

NORTH WEST VICTORIA HISTORIC MINING PLOTS

1848-1976

Historic Notes

David Bannear

Heritage Victoria

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AMHERST DIVISION - GENERAL

- 1848:** The original discovery of gold at Amherst or Daisy Hill occurred late in 1848. The discovery, by a shepherd Thomas Chapman, on the sheep run of McNeill and Hall, Glen Mona, caused the first gold rush in Victoria. [Flett, 1979, p254]
- 1851:** Dr. Herman Bruhn, the well-known prospector, found gold in the area (Amherst) in 1851, but the first real discovery took place in about May 1852, when a party of Germans, going overland from Adelaide to Bendigo, got gold near the later site of Amherst Cemetery, close to Daisy Hill, where Chapman got his gold in 1848. [Flett, 1979, p254]
- 1852:** The first important rush to Daisy Hill started, following the discovery of gold in Blacksmith's Gully in December 1852. The locality was about a mile east of the later town, and was known as Cowley's Rush. [Flett, 1979, p254]
- 1853:** Gold was going discovered in March 1853 at Kangaroo Gully and Grecian Gully was opened in May. There was about 1000 diggers on the field [Flett, 1979, p254].
- 1854:** The first discovery of gold at Talbot, about three miles south-east of Daisy Hill, and then known as Back Creek, took place at Kangaroo Flat, on the Back Creek and about two miles south-west of Talbot, early in 1854. The workings there, until August, were confined to a small lead on the flat, but towards the end of 1854 gold was discovered at Ballarat Hill, and amidst considerable activity, built up to a 'Goodwoman's Rush' in March 1855 [Flett, 1979, p254-255].
- 1854:** Gold discovered at Opossum Gully, Amherst, in October 1854; a large rush in January 1855 and the Adelaide Lead was opened. Flett, 1979, p254-255]
- June 1855:** There were about 10,000 diggers at Back Creek and Daisy Hill when the famous riots started at the bottom of Adelaide Lead in June 1855. Other discoveries in the area during 1855 were Mt. Greenock, east of Talbot; the White Hills; Cockatoo; and Daisy Flat at Amherst. Towns were surveyed at Back Creek and Amherst, but the general exodus to Fiery Creek in September 1855 led to the cancellation of Back Creek town survey [Flett, 1979, p254-255].
- June 1855:** There were about 10,000 diggers at Back Creek and Daisy Hill when the famous riots started at the bottom of Adelaide Lead in June 1855. Other discoveries in the area during 1855 were Mt. Greenock, east of Talbot; the White Hills; Cockatoo; and Daisy Flat at Amherst. Towns were surveyed at Back Creek and Amherst, but the general exodus to Fiery Creek in September 1855 led to the cancellation of Back Creek town survey [Flett, 1979, p254-255].
- May 1857:** The next important gold discovery was on a series of hills ranged along the south side of the Craigie-Amherst road. The discoveries caused what was known as the notorious Emu Rush, so called from the Emu Inn that was on the cross-roads just below the first workings. [Flett, 1979, p255-256]
- 1857:** Diggings at Back Creek and Amherst had nearly junction on Daisy Hill Flat, near Mia Mia, and in 1857 the Mysterious Lead, an intricate, winding, deep gutter, was discovered on the flat below the present cemetery [Flett, 1979, p.256].
- 1858:** McCallum's Creek - This goldfield, about five miles down McCallum's Creek from Mt Greenock, was opened in January 1855, at Garden Flat [Flett, 1979, p.256].

- August 1859:** Rocky Flat Lead - Giving employment to 300 men. Believed by many to be a continuation of the Scandinavian Lead. 10hp engine erected on the east end of the lead and two others in the course of erection. Scandinavian Lead has attracted such a large population 18 months ago, responsible for founding present township of Back Creek. Being traced in a northerly direction, at least 1300 miners actively engaged. Rocky Flat Lead, next in importance to Scandinavian, is giving employment to over 300 miners.
- 1859:** Scandinavian Lead - The last and richest gold discovery was the Scandinavian Lead, which was opened in early 1859 on the site of Talbot, and around which the town grew. For those comparatively late days of gold digging the rush was an enormous one. The lead, near the present Talbot railway station, was discovered by diggers Adolph, Carl Olsen, Carl W. Hallem and Joseph Bell ... Other discoveries were made during the Scandinavian Rush in 1859. Rocky Flat, east of the main lead was discovered separately, and the Union Lead, north of Talbot was opened by a party of Welshmen. Joseph Barnes and party opened Long Gully, Talbot, in May 1859, and Mt. Glasgow diggings were started in June 1859 by a party consisting of Rolstone, Wilson, McLoughlin and Wood [Flett, 1979, p.256].
- August 1859:** Rocky Flat Lead - Giving employment to 300 men. Believed by many to be a continuation of the Scandinavian Lead. 10hp engine erected on the east end of the lead and two others in the course of erection. Scandinavian Lead has attracted such a large population 18 months ago, responsible for founding present township of Back Creek. Being traced in a northerly direction, at least 1300 miners actively engaged.
- September 1859:** Engine shaft on Rocky Flat Lead struck payable gold at a depth of 90 feet. Scandinavian Lead: richness of lead - West of England claim, 210 oz. from 43 loads (principally cement); United Miners, 373 loads yielded 656-1/2ozs. Rocky Point - Sinking from 85 to 90 feet through 60 to 70 feet of basaltic rock.
- September 1859:** Mt Greenock - At the base of the hill, on the north side, there are about 100 miners busily employed mining in a paddock, the property of Mr. Ambrose ... Outside the paddock is a surveyed road, under which the gutter has been traced from the inside ... At a considerable elevation above the fence and road, with basaltic rock cropping out over the surface. There has been several prospecting holes being worked, and the prospectors entertain high hopes of the results of their labour.
- November 1859:** Kangaroo Flat, Amherst- Rush to head of this flat has subsided - population estimated at 400.
- November 1860:** Several companies are at work on the Mia Mia Reef, most of shafts are 100 feet deep ... I will send you a plan of Mia Mia Flat Diggings, connected with the Hard Hill ... Parts of the flat having been opened at different periods has caused it to possess a variety of names, such as Tick Nickle, the flat supports a settled population of over 300. Feb 1860: Kangaroo Flat, Amherst - Still supporting population of 400.
- February 1860:** Rocky Flat Lead - 27 frontage claims in full work (200 men employed). General opinion is lead is trending towards Gibraltar. Ground in that direction being taken up in 3 acre blocks, by parties of 18 men to each block.
- February 1860:** Nuggetty Gully when first opened up was very rich, with numerous nuggets found weighing from 1 oz. to 30lbs. At present it supports a mining population of about 200 (principally puddling). Nuggetty Gully located at east end of Ballarat Hill.
- 1860s:** Prince of Wales mine crushings at Cosstick's battery (also known as Croydon battery). (Records of Geological Survey, Vol. III, part 2, 1912)
- 1860s:** Prince of Wales Reef: First worked in 1860s - yields now unavailable. (Records of Geological Survey, Vol III, part 2, 1912)
- November 1860:** Several companies are at work on the Mia Mia Reef, most of shafts are 100 feet deep ... I will send you a plan of Mia Mia Flat Diggings, connected with the Hard Hill ... Parts

of the flat having been opened at different periods has caused it to possess a variety of names, such as Tick Nickle, the flat supports a settled population of over 300.

- 1861:** Victoria Gully, Tunnel driven ('so it is said') in 1861. (Records of Geological Survey, Vol. IV, part 1, 1917)
- February 1861:** Reefs being worked include New Years Reef, Carnabian Reef, Sydenham Reef, and Cockatoo Reef.
- 1861:** Two diggers - Herd and Tierney - in April, found gold in Reservoir Gully, near Amherst, during the excavation of the town reservoir. Liverpool Flat, south of Amherst, was also opened and there was a large rush in 1861 [Flett, 1979, p256].
- February 1861:** I will forward a plan and sections of Nuggetty Gully, connected with the end of Ballarat Hill.
- April 1861:** Construction of reservoir near the head of Amherst Flat, about 1-1/4 mile distant from Amherst township.
- April 1861:** Extensive rush set in near the head of Amherst Flat, about 1-1/4miles distant from Amherst township, and which owes its existence to the reservoir now being constructed there ... excavation to bedrock across the flat from range to range ... The rush at present is extending down the flat towards the old lead which was lost some years ago, a little above the township of Amherst.
- April 1861:** Kangaroo Flat, Amherst- Diggings principally being worked by puddling machines, and a few Chinese.
- May 1861:** Reservoir Rush is declining, at one time there was 3,000 miners on the ground, but as the lead proved to be a very narrow one there was not sufficient room, now about 15000 on the lead.
- May 1861:** Rocky Flat frontage claims yielding good dividends. Scandinavian Lead has joined Rocky Flat Lead - mining dull.
- 1864 to 1894:** The Dana Reef, which, in the early days yielded as high as 6oz. to the ton has lately been taken in hand by a company that is now busily engaged erecting machinery. The departmental records show that for a long time this line of reef supplied a large proportion of the gold credited to the Amherst division ... Within six months of the reef being opened in 1864, the mining surveyors report states that the Dana Reef so far had averaged 40z 5dwt to the ton and had cleared £4,000 in dividends. In March quarter of 1865, the Amherst division crushed 1,305 tons for 601 oz., and of this amount 401 oz. had to be credited to the Dana Reef as the produce of 188 tons. This was at 70 feet, and apparently the average yield fell to about 1 oz. per ton, until a depth of 240 feet was reached when the reef paid fair wages. The machinery was, however, removed [Special Report, 1894].
- March 1864:** Kangaroo Flat, Amherst- mining population of 600.
- March 1864:** Adelaide Lead - 350 miners working on the south end of lead.

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- March 1864:** From present appearance the lead promises to be one of the most important ever opened up in the Maryborough district. A small township is rapidly being formed at the northern base of the Mount ... Mines working on north side of the Mount include All Nations Co., Victoria Co. (adjoining All Nations), Perseverance Co. (adopting same system as Great Tunnel Co. = inclined tunnel on the side of the Mount). Southern Cross Co., Pioneer Co., Oriental Co., Darling Co. are all sinking. Black Ball Co. making good wages. Talbot Gold has bottomed their shaft. Perseverance Co. is building new brick chimney and replacing boiler. Prospectors south of the mount unable to reach bedrock with windlass on account of water. Tunnel companies on the east side of the Mount retarded by foul air - Princess Alexandra, Prince of Wales, and Exploring Gold Mining companies are in, respectively 1,200, 1,250 and 1,300 feet.
- March 1864:** Rocky Flat - 400 men. Mining matters improved, particularly near McCullough's Paddock - Prince Alfred Co., British Standard Co., Lancashire Lass Co., Irish Lass Co., and Rocky Flat Paddock Gold Mining Co.
- September 1864:** Progress good on Rocky Flat lead. Band of Hope and Rising Sun companies completed erection of machinery. Paddock Co., good weekly dividends. Britannia, Prince Alfred and Irish Lass being rewarded for labour. Royal Standard Co.'s engine started.
- September 1864:** Those claims that have bottomed and opened out are getting very satisfactory returns especially All Nations, Talbot, Perseverance, Oriental, Black Ball, Darling, Victoria and Prince of Wales. Pioneer Co. struck payable gold. Undaunted Co., sinking. Southern Cross Co., sinking. Search and Find It, purchased 25hp engine. Homeward Bound and Lone Tree Isola about to commence. Golden Ball, Koh-i-noor, and Grand Junction are sinking.
- March 1865:** A company has been formed for sluicing auriferous ground near the eastern base of Mount Glasgow ... their intention is to convey water from the Merin Merrick swamp, about one mile distant.
- March 1865:** Ground for about 100 miners occupied about 1-1/2miles south of Mount Greenock, near the Antrim Arms, or junction of Clunes and Ballarat Roads. A tunnelling company, in driving westwards into the plains, obtained some good prospects. It is probable this may be the Mount Greenock lead, or a tributary of it.
- March 1865:** Mt Glasgow and Swamp Companies: A Company has been formed for sluicing near the eastern base of Mt. Glasgow. Water to be conveyed from Merin Merick Swamp, about 1 mile distant.
- September 1865:** Messrs Leyland and Stewart's hydraulic works at Kangaroo. The hoses, with pressure of 33 feet, are equal to washing 1,000 tons of dirt in 20 hours with two shifts of men (six in each gang). The tailings are lifted 20 feet by a series of dredge buckets, which are attached to an overshot water-wheel of 14 feet diameter.
- September 1865:** Considerable falling off has taken place in the Mount Greenock Plain leasing companies.

- March 1866:** Owing to the continued drought, the miners in this division are in very straitened circumstances, which has caused a further decrease in the numbers employed, and those which have no means of removing have been under the necessity of “fossicking” about in the various small gullies in the hope of finding a little gold. The water races have been dried up during the whole quarter, so that the miner has had nothing to fall back upon when the natural beds of the streams failed to give a supply.
- April 1866:** Continued drought - decrease in numbers, those who cannot move now reduced to fossicking, water races have dried up.
- September 1866:** The alluvial mining about Mount Greenock continues in a depressed state, owing to the want of sufficient capital to work the main lead, which is so heavily charged with water. The Hoffnung Co., at Mt. Greenock South, has had a 12hp engine, with 6-inch pipes and a 70-ft lift, employed for some months past exclusively in pumping, but have had to suspend operations to place in 10-inch pipes, which is thought will clear the lead so as to enable the miners to proceed.
- September 1866:** The Victoria Co., at Whitehorse Reef, near Amherst, has erected a steam engine, of 30hp, outlay of £3000. 10-head of stamps.
- December 1866:** Decrease of 280 alluvial miners, left for harvest work and others are employed in fencing in the land which has been granted under the 42nd section of the Land Act of 1865. The deep alluvial lead from Mount Greenock to Fox’s Point, near Majorca, is still undeveloped from excess of water; the want of capital has caused a failure in every case where the miners have touched it. This may be fairly termed the “lead of the division”.
- March 1867:** Mining generally at very low ebb, from want of water in the shallow diggings and dearth of capital in the deep leads. Several public meetings held ... the Greenock deep lead will probably remain unworked for an indefinite period, unless outside capital is brought in.
- March 1867:** Mount Greenock Lead will probably remain unworked indefinitely until outside capital is brought in.
- June 1867:** Increase of 73 alluvial miners but some men are partly employed cultivating the land they have obtained under 42nd section of the Land Act of 1865. Mining operations in Division is in very depressed state, from want of capital to develop the quartz lodes and deep alluvial leads.
- September 1867:** Hoffnung Co. - broken down a third time.
- December 1867:** Sadowa Co., heads the list of alluvial mines ... has given an impetus to deep lead mining.
- December 1867:** A new rush has taken place at Emu, situate about four miles from Talbot, 30 men employed.
- March 1868:** Alluvial mining still in depressed state for want of capital. An effort being made by the Union Co. to raise sufficient funds to develop the Mount Greenock deep lead, need about £4000.
- March 1868:** Sadowa Co. - 1166 oz.
- June 1868:** Emu Diggings: A Ballarat company, combined with working men in the locality, have taken up 3000 feet of Bluchers Reef under bye-laws, and are about to place powerful machinery on the claim. Plan of Waterloo Claim, Blucher’s Reef, Emu Diggings, Talbot Prospecting claim, given name of Nuggetty Reef, found to be a spur of Blucher’s Reef
- June 1868:** Sadowa Co. - 1705 oz.
- September 1868:** Sadowa Co. - an increase of 532 oz. Nil Desperandum Co., Scandinavian Lead, has spent 9 months erecting steam machinery.

- September 1868:** The Union Co., Mount Greenock South, now erecting plant ... will assist the Hoffnung with water. Private ground on the south side of Hoffnung has been let to a mining company - Nicholls Freehold Co.
- 1868:** Rip Van Winkle Co. - first attempt to find Mt Greenock Lead. Party sank shaft to 230 feet, then mining depression set in and shaft abandoned. (MSR, 12/88).
- December 1868:** Prospecting claim gave 20 oz. a ton of quartz in the last crushing of 6 tons, from Prince Alfred Reef, near German Gully.
- December 1868:** An unusual quantity of ground has been applied for, under leases and otherwise, in this division during the last quarter, viz. 2,544 acres have been surveyed under mining leases, 158 acres in extended claims under the bye-laws, besides 258 acres on private land - making 2,960 acres. The recent large rushes don't appear to have taken many miners away from the locality as most miners have settled homes.
- March 1869:** Scandinavian Lead - Brunswick Gold Mining Co. - 27hp steam engine.
- June 1869:** Scandinavian Lead - Sadowa Co., 2105 oz. from No. 3 shaft. No. 4 shaft down 120 feet and has two substantial steam engines in course of erection.
- June 1869:** Emu Diggings: Waterloo Co., Blucher's Reef, have a crushing plant of 40hp in the course of erection. The shaft is 200 feet deep.
- September 1869:** The large gold mining companies near the swamps are making good progress, and have first class machinery erected, or in the course of erection. The Great Wheal and North Clunes Extended companies expect to be alluvial mines, the former being 85 feet, the latter 100 feet deep. The Great Northern and Talbot and Clunes will be quartz mines. Quartz mining greatly neglected, although many payable reefs known to exist, the total crushing plant of the division consists of two machines, one of eight stamps driven by a 10hp, the other 12-head driven by 12hp.
- September 1869:** Mt Glasgow and Swamp Companies: The large gold mining companies near the swamps are making good progress, and have first class machinery erected, or in the course of erection. The Great Wheal and North Clunes Extended companies expect to be alluvial mines, the former being 85 feet, the latter 100 feet deep. The Great Northern and Talbot and Clunes will be quartz mines.
- December 1869:** Mt Glasgow and Swamp Companies: the large companies near the swamps (on the prolongation of the Clunes Reefs) have not made much progress.
- December 1869:** Emu Diggings: Waterloo Co., would be one of the most permanent claims in the division.
- December 1869:** Waterloo Co., would be one of the most permanent claims in the division.
- December 1869:** The companies on the Big Reef, near Amherst, have not made progress in erection of machinery.
- March 1870:** The Great Wheal and North Clunes Extension companies are at a standstill, owing to the great depression in the mining market. The shallow alluvial workings through the division are on the whole unproductive, from the want of water to wash stuff, heaps of wash dirt being collected in various parts waiting for a supply of water.
- March 1870:** Mt Glasgow and Swamp Companies: The Great Northern Co., at Merin-Merin Swamp, have powerful machinery completed. The Great Wheal and North Clunes Extension companies are at a standstill, owing to the great depression in the mining market.
- June 1870:** Emu Diggings: Waterloo Co., Blucher's Reef, crushing plant not yet housed in.

- June 1870:** Hoffnung Co. in prosperous state, Union Co. to the north and Nichol's Freehold to the south. Rose Co. let on tribute. Potosi Co. not yet struck the gutter, so far spent £9,000. The Gladstone Co. have completed and started two engines.
- September 1870:** Emu Diggings: Waterloo Company on Blucher's Reef let on tribute, their excellent battery
- September 1870:** Mt Glasgow and Swamp Companies: Annuities Quartz claim at Mt Glasgow Reef has struck lode 23 feet thick, company propose erecting battery near the mine to save expense of cartage to Clunes.
- September 1870:** Arrangements to let the Victoria battery on tribute, so that good returns may be looked for from White-horse Reef.
- September 1870:** Scandinavian Lead - The Brunswick Co. have just completed the erection of a winding engine.
- September 1870:** Himalaya Co. at the Big Reef, near Amherst which yields 9dwts per ton ... company needs capital to erect steam machinery.
- September 1870:** Alluvial mining - a large decrease in the numbers of miners on the old shallow workings, which now appear to be nearly deserted. If these old goldfields were supplied with a continuous amount of water we should have sluicing employment for a great length of time.
- December 1870:** Emu Diggings: Quartz mining in this division does not appear to be well understood, or we should have valuable lodes like Blucher's, White Horse, and the Big Reefs, which are known to yield good payable returns, standing idle.
- December 1870:** Sadowa, 1,381 oz, Brunswick, 580 oz.
- December 1870:** Quartz mining in this division does not appear to be well understood, or we should have valuable lodes like Blucher's, White Horse, and the Big Reefs, which are known to yield good payable returns, standing idle.
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- December 1870:** Alluvial mining in the deep ground has disappointed our expectations. It was thought that Mount Greenock Lead, when found, would give good results; but after the expenditure of more than £20,000 in the Potosi and Gladstone claims, the aforesaid lead has been found worthless in the parts worked, so that we have nothing but the subsidiary leads to depend upon in alluvial mining. Nichol's Freehold, Union, and Hoffnung claims produced respectively 1,296 oz, 676 oz and 331oz.

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March 1871: Emu Diggings: The Nuggetty Co., at Emu, have just completed a battery of eight stamps on the claim.

March 1871: Mt Glasgow and Swamp Companies: Annuities Co., at Mt Glasgow, bids fair to be a first-class claim ... The company are now erecting a crushing machine on the margin of the Middle Swamp, about 1-1/2miles distant from the claim, which will be connected by a tramway ... The battery will be a 12-head revolving one.

June 1871: The reservoir and races of Messrs Stewart and Farnsworth:

Reservoir .	Cost £4,500
Eleven miles of head races, capable of carrying seventy sluice heads of water, at 20s. per chain	Cost £880
Eight five miles of supply races, capable of carrying twenty sluice-heads, at 7s 6d per chain	Cost £2,550
One hundred and fifty miles of distribution races, about 50 miles of which are now in use, and about 100 miles which can be brought into use if required; the whole is valued at about 2s. per chain	Cost £1200
About 100 miles of distribution races which Mr. Stewart considers as abandoned.	Nil.

September 1871: Alluvial mining - There is a falling off in the numbers employed, and also total yield of gold. This is owing to our shallow workings being nearly exhausted, which will not give a living except for sluicing with hose and high pressure of water; therefore, all those miners who have been in the position to move have departed for other goldfields, those left behind being, for the most part, married men with families, and who have blocks of ground under the recent Land Acts. The reservoir and races of Messrs Stewart and Farnsworth will be the same as my former returns.

September 1871: Nichol's Freehold, 659 oz.; Union Co., 358 oz.

September 1871: Sadowa, 934 oz; Band of Hope Cockatoo, 542 oz; and Brunswick Co., 466 oz.

September 1871: Forbach Co., on White Horse Reef, nearly ready to commence mining at 270 feet.

December 1871: Sadowa, 657 oz. Band of Hope at Cockatoo, 555 oz.

December 1871: Mt Glasgow and Swamp Companies: the Annuities Co., Mount Glasgow, has disappointed shareholders.

December 1871: The construction of reservoir, length and cost of water races, will be the same as for September quarter (last return), viz. £9,130. The following is the distribution for December 1871 - six sluicing parties, two sluice heads each, at 40s. per week, for 12 weeks, £144, and five puddling machines, one sluice head each, at 20s. per week, £60.

March 1872: Union and Hoffnung companies continue to work profitably. The alluvial ground on the south side of the Mount spreads over too large a space to be worked with profit. Nichol's Freehold has ceased working for this cause, and their fine plant, which cost about £5000, is being sold and removed.

March 1872: Forbach Company, in Amherst, have collapsed for want of means to carry on the works, notwithstanding a first-class crushing and winding plant on the ground.

- June 1872:** Laura Reef (Croyden Co-operative Company) has had an average yield of above 6dwts to the ton, with a lode 16 feet in thickness ... the lode has been worked for about 12 years.
- June 1872:** Sadow Co. (Talbot Tribute Co.) returns of 679 oz. New Band of Hope (Cockatoo) 627 oz. Lease No. 776 (Golden Gate) have sunk a shaft and found deeper ground than any yet worked on Rocky Flat
- June 1872:** Golden Gate have sunk a shaft and found deeper ground than any yet worked on Rocky Flat, washdirt being at 161 feet, which gave 1/2oz. to load. If the lead proves to be valuable, we shall have a first-class mining field all through the plains, which may be many miles in length.
- September 1872:** Laura reef has produced a greater amount of stone with a larger average yield than formerly. The mine has an immense amount of stone, being more like a quarry than a quartz lode for quantity.
- September 1872:** Emu Diggings: Nuggetty Reef (Bluchers) will have the water pumped from the mine, when the extraction of the stone will commence.
- December 1872:** The large companies are all let on tribute at from 12 to 25 per cent. on the gross yield. The result is that if any mishap occurs, the tributers throw the mine into the hands of the owners to the injury of the plant and drives.
- December 1872:** Prince Alfred Reef has produced less than 10ozs. per ton for the first time since the mine has been opened.
- December 1872:** Blucher's Reef is gain taken up as an extended claim.
- December 1872:** Steam machinery is now almost complete on Mia Mia Reef.
- September 1873:** Mia Mia Reef has turned out a complete failure. The company has now collapsed, after expending about £3000.
- March 1874:** Mining in general has been exceedingly dull.
- June 1874:** Tara's Hall claim, situate on the continuation of Daisy Hill Lead, has commenced puddling with encouraging prospects.
- June 1874:** Laura Reef has given slightly improved yields, will give good wages to the men employed.
- June 1874:** Prince of Wales lode gives good wages, men are now down to water level, when pumping engine, which is now being erected on lease No. 1765, is in working condition, yields should improve.
- September 1874:** A new company has been formed to work Nicholl's Freehold, about 1-1/2miles south of the Mount.
- September 1874:** Some of the puddling parties in the neighbourhood of Amherst have been very successful during the last three months. One party states they have made more wages during that period than for fourteen years previous.
- September 1874:** Prince of Wales Reef: Claimholders on the reef have sunk a shaft to 130 feet, permanent plant of 20hp is in the course of erection.
- December 1874:** Scandinavian Lead - Band of Hope company has collapsed, reformed under the title Narrigal G. M. Co.
- March 1875:** Hoffnung Co. employs 21 men, produced 660 oz.
- March 1875:** Scandinavian Lead -The New Greenock Park Tribute Co., Rocky Flat, have entirely suspended operations.

- March 1875:** A new battery of 12 stamps in Browns Gully, near Lexton, is expected to commence in second week of April.
- June 1875:** Scandinavian Lead -The Narrigal and Prince of Wales companies have ceased work and their plants are for sale.
- June 1875:** The alluvial mines were never in a more depressed state than at the present time. The Narrigal and Prince of Wales companies have entirely ceased working, and the plants are offered for sale. All the miners who are in a position to move are leaving the locality. On the other hand, Nicholl's Freehold are now engaged in the erection of steam machinery on the south side of their claim, and have the means of all the Crown lands in the south applied for under mining lease.
- December 1875:** The Prince of Wales Company have completed a battery of eight stamps, but the first and only crushing did not come up to their expectations.
- 1876:** Prince of Wales Reef - Lubie and party worked claim in 1876. 1/2 oz to the ton, up to 1 oz per ton. Perseverance United Co. held 10-acre lease, just north of Lubie's. Main shaft 225 ft deep. (Records of Geological Survey, Vol III, part 2, 1912).
- March 1876:** Norfolk Gully, Stoney Creek, Parish of Amherst - 1000 men. Sinking through alluvial drift but will dip under basalt at the southern end, probably be branch of Mt. Greenock Lead, which is about 2 miles distant, in an easterly direction.
- June 1876:** Lexton Reef: The Warrior Claim, near Lexton has improved, company will keep their 12-head battery working continuously.
- September 1876:** Tara's Hall Co. (alluvial) also shows an increased yield.
- September 1876:** The reefing operations of at Brown Gully, near Lexton, have turned out a failure, an excellent plant of 12-stamps for sale.
- September 1876:** Norfolk Gully Rush has dwindled, instead of 300 men now only 10 men at work.
- September 1876:** Hoffnung Co. still keeps up an excellent yield per ton of wash dirt.
- December 1876:** Nichol's Freehold completed their plant.
- December 1876:** Scandinavian Lead -Golden Gate Co. completed their shaft. The machinery from the Sadowa Co. and from the Greenock Park Co., valued at £5000, has been removed to the neighbourhood of Creswick.
- 1877:** Prince of Wales Reef - Lubie claim purchased by Perseverance United Co. (Records of Geological Survey, Vol III, part 2, 1912).
- March 1877:** Scandinavian Lead -Golden Gate Co. and United Miners Co., Rocky Flat, have both bottomed their shafts.
- June 1877:** A great falling off in alluvial mining during the quarter owing to lack of water. The reservoir is under repair.
- September 1877:** Hoffman Gold Mining Co., Mount Greenock, produced 404 oz, employed 20 men.
- December 1877:** Golden Gate Co., Rocky Flat, has mastered the water from the Sadowa old workings.
- March 1878:** The Golden Gate Co. burst their boiler and has stopped for want of funds.
- June 1878:** Churchill Co. and Prince of Wales Reef have suspended operations. In alluvial mining there is little doing.
- July 1878:** Prince of Wales Reef - Perseverance United Co. yielding up to 10 dwt per ton. (Records of Geological Survey, Vol III, part 2, 1912).

- December 1878:** Union Quartz Mining Co., Church Hill, sinking new shaft to depth of 180 feet and erecting new steam machinery.
- 1879:** Prince of Wales Reef - Dehnert & party had tribute on Perseverance mine. Worked just south of Perseverance shaft, for 10-15 dwt per ton. Last crushing 4 dwt per ton. (Records of Geological Survey, Vol III, part 2, 1912).
- September 1879:** Union Quartz Mining Co., Church Hill, crushed 86 tons for 260ozs. of gold.
- September 1879:** Union Gold Mining Co., Mount Greenock, produced 753ozs. of gold during the quarter. Mount Greenock Extended Co. is progressing fast.
- 1880:** Rip Van Winkle Co. - second attempt to find Mt Greenock Lead. Powerful machinery installed, costing £6,000. Ground purchased for £9,000 from Mr Samuels of Talbot. Ground proved unpayable. Abandoned and plant removed. (MSR, 12/88).
- May 1880:** Prince of Wales Reef - Perseverance Co. closed down. New company, Talbot Quartz Mining Co., formed. Stated in prospectus that 1,600 oz of gold had been obtained from Prince of Wales Reef. (Records of Geological Survey, Vol III, part 2, 1912).
- 1881:** Prince of Wales Reef - Talbot Co. unwatered shaft. Poor prospects. Last work on main portion of reef line was carried out in 1881. (Records of Geological Survey, Vol III, part 2, 1912).
- 1883:** Prince of Wales Reef - An attempt was made to float the Talbot Co. mine as Mt Emu Gold Mining Co. Unsuccessful. (Records of Geological Survey, Vol III, part 2, 1912).
- June 1884:** Union Quartz Mining Co. 420 tons yielded 871 oz 3 dwt - average 2 oz 11 dwt per ton. 35 men employed.
- June 1884:** Treasury Quartz Mining Co. - 70-acre lease pegged out on Talbot Flat, to work continuation of Black Lead. This ground includes the outlet of a gold-field of about 30 square miles, and has not been previously worked. Many of the tributary gold workings have been highly remunerative.
- September 1884:** Treasury Quartz Mining Co. - recently pegged out large lease. Have purchased machinery, now on the ground.
- September 1884:** Astonish-the-Natives Co: Mining operations suspended for six months, to enlarge company and erect machinery.
- September 1884:** Only dividend for quarter - £97 13s by Union Quartz Mining Co. of Dunach. Scarcely a dividend, as the claim is paying wages to tributers. The above amount was paid by tributers to original shareholders. Total yield for quarter less than 48 oz.
- 1884:** Mining on Private Property Act.
- September 1884:** Gold yield well below average. Principal claims doing dead work. Also miners who hold small farms are engaged in agricultural pursuits.
- December 1884:** Emu Diggings: Southern Cross Quartz Mining Co. has stopped work. Re-organising company on different basis.
- December 1884:** Treasury Quartz Mining Co. - Have erected substantial plant, sunk shaft 100 ft. Opening out.
- December 1884:** Union Co., Mt Greenock, has at last ceased work, after being in existence for about 20 years. A new lease has been taken up on Mt Greenock to work the ground to the east of of Union Extended claim in direction of the Princess Alexandra Tunnel.
- March 1885:** New Rip Van Winkle Co. at work shortly. Claim known to be payable if worked systematically Old Rip Van Winkle Co. getting 50 oz per week when work was

stopped. Adams' Freehold Co. - boring operations have shown where deep ground may be found.

- March 1885:** Flinders Co., All Nations Reef, sunk by prospecting vote money. Beginning to open out.
- March 1885:** Mining operations at low ebb for want of funds to sink deep shafts for prospecting quartz reefs.
- June 1885:** South Greenock Co. may return something payable soon. Rip Van Winkle Co. has taken up 293 acres north of Mt Greenock under Mining on Private Property Act. Not likely to start actual mining operations for some months, as machinery not yet on ground. Adams' Freehold Co. has taken up 800 acres of land under Mining on Private Property Act, 1884. Expected to bottom in a few days.
- June 1885:** Mining almost at a standstill, despite over £21,000 spent on mining machinery. Depression due to scarcity of money in locality and difficulty collecting calls. Found impossible to raise sufficient money to proceed with work, in some cases. Therefore mines have been let on tribute, with some satisfactory results.
- September 1885:** Emu Diggings: Rip Van Winkle erecting plant purchased from Southern Cross Quartz Mining Co.
- September 1885:** Flinders Co. All Nations Reef pushing on with main drives, with government assistance. Taken up a prospecting claim, under the by-laws, south of their lease.
- September 1885:** The old Union Quartz Mine, Amherst, purchased by Edward Morey, of Ballarat, and renamed the Daisy Hill Quartz Mining Co. 'It is hoped that the mine will now be opened with something like an enterprising spirit.
- September 1885:** Rip Van Winkle erecting plant north of Mt Greenock, at cost of £1,250, where payable gold is known to exist. Plant purchased from Southern Cross Quartz Mining Co. South Greenock Co. has stopped work, but Richard Hull, under the Mining on Private Property Act has lately taken up a lease close to the NE. Already on payable gold, which is supposed to be the real Mt Greenock Lead. Claim worked by tunnels from the left bank of McCallum's Creek, which effectually drains the ground; consequently the working expenses are almost nil. Adams' Freehold Co. - 16 men employed, main driving.
- September 1885:** Improvement in gold yield mainly owing to sundry patches obtained by small parties of alluvial miners - making good wages of late. Larger claims making very slow headway - difficulty obtaining calls and disposing of shares in new claims.
- December 1885:** Considerable decrease of gold during past quarter may be attributable to the fact that a large number of puddling machines have not been working, and that the larger claims have been chiefly engaged in prospecting and erecting machinery, etc.
- March 1886:** Granite Hill, Talbot: New lead discovered by prospectors employed by Caralulup Prospecting Association. For want of water, it is not yet known if it will yield ordinary wages. Some miners say it will only last about eight weeks - gutter narrow, wash only 3 inches thick. House and party are prospectors. About 120 miners on the ground, most sinking shafts, about 20 of which have bottomed. Sinking 7 to 20 feet, in easy country. All Nations Reef intersects upper portion of lead at right angles; lead runs westerly into Kangaroo Flat. Pieces of fine gold, 6 dwt and 2 dwt found at bottom of prospecting shaft. 1 dwt per tub, on average. In the course of a week, the lead will be properly tested - Talbot Council sending water down an old race from the reservoir to the rush.
- March 1886:** Small quartz claims taken up under the by-laws at Adelaide Lead turning out well. Chadwick & party - 92 oz 5 dwt from 90 tons, expenses, except crushing, being next to nothing.
- March 1886:** All nations Reef. All Nations Reef intersects upper portion of new lead ('Association Rush' Reily's Gully, near Granite Hill, parish of Amherst) nearly at right angles.

- March 1886:** New lead discovered by prospectors employed by Caralulup Prospecting Association. For want of water, it is not yet known if it will yield ordinary wages. Some miners say it will only last about eight weeks - gutter narrow, wash only 3 inches thick. House and party are prospectors. About 120 miners on the ground, most sinking shafts, about 20 of which have bottomed. Sinking 7 to 20 feet, in easy country. All Nations Reef intersects upper portion of lead at right angles; lead runs westerly into Kangaroo Flat. Pieces of fine gold, 6 dwt and 2 dwt found at bottom of prospecting shaft. 1 dwt per tub, on average. In the course of a week, the lead will be properly tested - Talbot Council sending water down an old race from the reservoir to the rush.
- March 1886:** 'Association Rush', Reily's Gully - lead runs westerly into Kangaroo Flat.
- March 1886:** New lead discovered by prospectors employed by Caralulup Prospecting Association. Named 'Association Rush'. (see Reily's Gully).
- June 1886:** Chadwick & Co. - 147 oz 16 dwt from 79 tons - average 1 oz 17 dwt per ton. Splendid yield obtained by three single young men. Average £14 per week per man, clear of all expenses.
- June 1886:** Rip Van Winkle Co. pumping out the shaft, clearing debris, which had fallen from surface. Tribute party has been formed to work the mine. Machinery in good working order. Adams' Freehold Co. has sunk shaft no. 2 to 103 ft.
- June 1886:** Many large claims have ceased work altogether. But, after many struggles for existence, mining industry looking brighter than for some years past.
- September 1886:** Rip Van Winkle Co. has started cleaning up old drives. First trial yielded 4 oz 7 dwt from two small machines. Adams' Freehold Co. has just bottomed their shaft.
- September 1886:** A number of small parties obtaining good wages in the vicinity of Adelaide Lead, although yield from this source has fallen off considerably of late.
- September 1886:** Scandinavian Lead - A large tract of country has been taken up under the Mining of Private Property Act, on the basaltic plateau lying between McCallum's and Back Creeks, which was thought by old mining men to be highly auriferous, as the old Brunswick and Martell's Paddock Company obtained a large amount of gold from the west side of the plateau, near Back Creek.

- September 1886:** Large tract of country taken up under the Mining on Private Property Act, on basaltic plateau between McCallum's and Back Creek. All large claims in quartz mining have ceased work. Gold yields still falling off. Not one engine claim in the division is yielding gold. But 'when things are at the worst they are sure to mend'.
- December 1886:** Chadwick and party have taken their quartz from Welcome Reef to the Cambrian Mill, Mosquito (Maryborough Division), for treatment.
- December 1886:** Rip Van Winkle Tribute Co. making fair wages, but have lost the run of gold. Adams' Freehold Co. making slow progress
- December 1886:** Considerable increase in gold yield.
- March 1887:** Rip Van Winkle mine being worked on tribute. The men have great difficulty in carrying on work for want of funds, have no help from outside. Look forward to government grant. Adams' Freehold Co. in difficulty. Lost their shaft. Work suspended until government grant forthcoming. 'It is a well-known fact that, if this company succeeds in striking gold, the whole line of country to Majorca will be prospected.'
- March 1887:** Shepherd's Flat, Splitters Creek, Two mineral leases, comprising about 200 acres, applied for by James Fay of Maryborough, for the purpose of mining infusorial earth (tripolite - a variety of opaline silica - looks like earthy chalk or clay, but is harsh to the feel and scratches glass), which occurs about 40 feet from surface.
- March 1887:** Lease of 122a 3r 10p granted to Majorca United Leads. Substantial plant erected, shaft bottomed at 79 feet on 4 ft of wash, bearing gold. It is supposed they are on or near the deep ground upstream from the Kong Meng Co. Shaft situated W and at the foot of Maiden Hill. Two extended claims have also been taken up to the E of Maiden Hill.
- June 1887:** The 'Providential Spur' prospecting claim, near Prince of Wales Reef, held by one of the Dunstones, had a nice patch - 2 tons yielded 13 oz 5 dwt, besides a small patch (only a pound) which yielded 6 oz. This quartz was obtained close to the surface, and was traced from an old wheel track.
- June 1887:** Last washing-up yielded 31 oz. Might be doubled by having a few more men on, but miners desiring to join the tribute party are required to pay a £15 premium. Adams' Freehold Co. - sinking third shaft. Loss of second shaft was great blow to company. Work would have stopped altogether without government grant.
- June 1887:** Majorca United Leads in good position for intercepting several lost leads. Will probably add to gold returns by the end of next quarter.
- June 1887:** Whim claim at the tail end of the lead. Wet sinking, 40 ft deep.
- September 1887:** Adjacent speculators waiting for Majorca United leads to strike gold (may happen any day. Then they should be able to find a market for their shares.
- September 1887:** Very little actual mining - considerable quantity of ground taken up by speculators. In many cases, lessees have no intention of commencing work, although bona fide miners anxiously seek ground. Speculators waiting to see if Majorca United Leads Co. strikes gold - will be able to sell their shares with no trouble then.
- December 1887:** W.H. Eustace, Nuggetty Gully, crushing tailings and cement from old claims, with some success.
- December 1887:** 'The Mia Mia' - Very good patches of coarse gold found by Chas. Anderson, 'who appears to be peculiarly fortunate in his prognostications relating to the existence of gold'.
- December 1887:** Majorca United Leads Co. have not yet opened out sufficiently to test nature of ground. On same run of gold as Kong Meng Co. Majorca Leads Estate Co. - Boring operations

being carried on vigorously at northern end. Two shafts being sunk in southerly direction, about 1/2 mile apart, to work central portion. North of Majorca United Leads Co.?

December 1887: David Anthony, of Talbot, and W.H. Eustace, of Nuggetty Gully, crushing tailings and cement from old claims.

December 1887: Hull and party tunnelling for the lead - on same run of ground as Adams' Freehold Co. Have met with little success - ground poor and hard to work. Rip Van Winkle, lower down the lead, still in full work. Ground has not yet paid more than half wages. claim could be worked better if additional boiler were installed - not enough steam to work three shifts. Adams' Freehold Co. - on Mt Greenock Lead, higher up than Rip Van Winkle Co. Just completed third shaft, 172 ft deep. 8 miles W of Talbot. Has lost 2 shafts through loose and friable ground.

March 1888: Rip Van Winkle - very low yield. Any stoppage at this point would be a severe blow to the district. Adams' Freehold Co. - another stoppage - breakage of engine shaft. Engine said to be too light for both pumping and winding.

June 1888: Rip Van Winkle Co. stopped work, after receiving £600 in government grants during the past two years. Mine worked on tribute, and nearly all the miners were over 60 years of age. Therefore, mine not given a fair trial - grant not spent in proper manner. Adams' Freehold Co. - main drives silted up with heavy flow of water. Machinery working well.

March 1888: Quartz mining has been dull, In alluvial mining there is little doing.

June 1888: Adelaide Lead: Jenkins & Son - 23 oz 5 dwt from 24 ton - gave wages of £3 per man per week.

June 1888: (Last report by Clarence Smith) 'Most of the miners in this division are too old to do a fair day's work, the majority being old fossickers; this would account for the small yield of gold. If more young men were engaged in mining, the difference in the yield would be very marked, as I am sure there are plenty of payable quartz reefs, but the young men prefer to work for wages or on contract at the Kong Meng and other mines at Majorca, where some of them make as much as £7 per fortnight by contract work.' re. Rip Van Winkle mine - stopped work - 'nearly all the miners were over 60 years of age. I do not, therefore, think that the mine has had a fair trial.'

September 1888: Adelaide Lead: Messrs Jenkins claim has not maintained its promise - averaging 6 dwt to the ton.

September 1888: Plant of Rip Van Winkle offered for auction in August, but not sold. May be sold or hired for use on Scandinavian or Black Leads. Adams' Freehold Co. - shaft 129 feet, on bedrock. Heavy water.

September 1888: Scandinavian Lead - Plant of the Rip Van Winkle Co. (Mt Greenock) may be sold or hired to pump Scandinavian or Black Leads, on both of which profitable employment for many hundred would be available if leads were drained.

December 1888: 'Old ground' at the rear of the township of Talbot. 12 oz nugget found.

December 1888: Rip Van Winkle Co. - plant remains idle. Ground held by this company has now been abandoned for the third time without having found the Mt Greenock Lead. Adams' Freehold Co. - after deciding to erect more powerful plant, have remained inactive.

December 1888: 'usual amount' of puddling and fossicking in old ground.

December 1888: Rip Van Winkle Co. - plant remains idle. Ground held by this company has now been abandoned for the third time without having found the Mt Greenock Lead. Adams' Freehold Co. - after deciding to erect more powerful plant, have remained inactive.

March 1889: Two crushing mills at work.

- March 1889:** Soudan Hill, Talbot - Reef discovered by Dunstone & party. About 1-1/2 miles N of Talbot. Yielding 3-1/2 dwt to the ton.
- March 1889:** White Horse Reef: Very little work done on lease by Henry Stone. After spending £2,000 over past two years, has been on two occasions unsuccessful in getting assistance from Maryborough Prospecting Board. Reef would be payable if sufficient capital spend on development.
- June 1889:** No crushing done this quarter at the White Horse Reef battery.
- June 1889:** Gold discovered on freehold land of John McPhee. Sinking 9ft. Very rich nuggetty gold. Prospectors Messrs Wyatt and Cane extremely reticent. Four lease applications lodged: one by prospectors, one by owner, one by his son, and one by a Ballarat speculator. Men came from Melbourne, etc., plus about 100 local miners. Owners opposed granting of leases. Work at a standstill.
- June 1889:** Four crushing mills in Division - 2 at work. White Horse Reef and Anthony's (Talbot) batteries idle. Alluvial mining almost at a standstill; only fossickers and small parties.
- June 1889:** Kangaroo Flat, Amherst- reef discovered by Talbot Prospecting Association. A party has about 8 tons at grass - expected to yield over 1 oz to the ton.
- June 1889:** Linden Hill Reef, Reef discovered by Talbot Prospecting Association
- September 1889:** Heavy roads caused cartage problems to crushing mills - small quantities only.
- September 1889:** Mr Stone, proprietor. Labour covenants suspended for three months, for prospecting. Shaft 700 ft.
- December 1889:** Mine remained idle, except small amount of prospecting by two men - indifferent.
- December 1889:** Messrs Toe and McKenzie applied for lease and proposed to form company to work Rocky Flat Lead at its supposed junction with the Mysterious Lead.
- December 1889:** Few alluvial fossickers. Only two of the four crushing plants in the Division have been working - putting through small parcels of stone and cement.
- c. 1891:** Sarah Bernhardt (John Bull) Reef, Talbot: Twenty miners at work.
- March 1891:** Talbot Prospecting Association resumed operating.
- March 1891:** Morrison and party continue to get payable gold.
- March 1891:** Scandinavian Lead - Black Lead Co. - favourable indications.
- June 1891:** Emu Diggings: Messrs Lumb and Munro working on a promising quartz claim.
- June 1891:** Lexton Reef: Several small but rich parcels treated.
- June 1891:** Scandinavian Lead - Phoenix Co. proved washdirt payable, but require more powerful machinery.
- September 1891:** Lexton Reef: 17 miles from Talbot. Worked by Karslake brothers. Excellent stone. No battery, so stone carted to Talbot.
- September 1891:** Talbot Prospecting Association - several parties at work, no successful results.
- 1894:** Amherst and Talbot quartz reefs - Besides the venture recently started on the Dana reef there are numerous small parties working in the ranges around Talbot and Amherst, and considerable quantities of gold are being extracted quietly from the reefs in this district, although a few of those engaged in the occupation are making much more than excellent wages. [Special Report, 1894]

- 1894:** On the All Nations reef a good deal of work has been done but without payable results, although 30 years ago stone averaging 1/2oz to ton was worked for half-a-mile along the line of reef down to water-level, a depth of 150 to 160 feet. [Special Report, 1894)
- 1894:** The Laura Reef, near Amherst, gave excellent returns for a long time at an average of 5dwts. to the ton, the reef having a thickness of from 10 to 15 feet. {Special Report, 1894, p9]
- 1903/1904:** Two crushing plants occasionally crush small parcels of stone. Two small cyanide plants working continuously.
- 1903:** Loddon Deep leads mine, Stony Creek - 18 men employed – boring
- 1904:** Loddon Deep leads mine, Stony Creek - boring.
- 1905:** Kangaroo Flat, Amherst- Royal Standard Co. has sunk shaft and is erecting machinery to prospect Kangaroo and Nuggetty Leads. Company holds about 1-1/2 miles. 16 men employed. Very good developmental work is being carried on.
- 1905:** Scandinavian Lead - Rocky Flat Co. - Very good developmental work being carried on.
- 1905:** Very good developmental work being carried on by Nuggetty Gully Co.
- 1905:** Royal Standard Co. has sunk shaft and is erecting machinery to prospect Kangaroo and Nuggetty Leads. Company holds about 1-1/2 miles. 16 men employed. Very good developmental work is being carried on.
- 1907:** A large amount of prospecting and developmental work done by companies and co-operatives. Nothing permanent discovered.
- 1909:** From the Prince of Wales engine shaft north to the Perseverance shaft (10 chains), there is a continuous line of old workings: Prince of Wales main shaft, Busch & Party's rich claim, Fentel's rich claim, Lubie's claim, Perseverance United Co. workings. Other workings to 60ft deep in places. Main Prince of Wales shaft is 240 ft deep, 9 ft 6 in. x 4 ft 6 in. Mine had own battery for some time, earlier crushings at Cosstick's Battery, 2 miles distant and Craigie battery, 4 miles away. North, and just across the gully from the main engine shaft, are old workings of Busch & party. Mined highly payable shoot to 130 ft by whim shaft. North again, Fentel and party worked to 130 ft. North again, Lubie and party worked claim in 1876. (reference to *The Mineral Resources of Amherst and Talbot*, G.D. Reid) (Records of Geological Survey, Vol III, part 2, 1912
- 1911:** Loddon Deep Leads Co. - average yield 16 dwt per fathom. Two steam puddling machines erected, good winding and pumping plant. 43 men employed.
- 1912:** Loddon Deep Leads Co. - 561 fathoms yielded 547 oz. No. 4 Roots blower erected, also 10-inch vertical engine and small electric lighting plant.
- 1913:** Mt Glasgow and Swamp Companies: Two men working a small but payable reef.
- 1913:** Loddon Deep Leads Co. unable to continue work, plant being too small to cope with water. Installing larger plant.
- 1914:** Loddon Deep Leads Co.- Only company working in the district. Main shaft 300 ft deep, 16 x 7 ft (has been enlarged to allow for larger plant). 22 men employed. 14 dwt per fathom.
- 1914:** A little reef prospecting - nothing payable.
- 1915:** A few parties work old alluvial diggings. Shallow outcrops in quartz belts - several small crushings put through Amherst government battery, some with payable results.

- 1916:** Several small parties working old shallow lead on Amherst Flat.
- 1916:** Loddon Deep Leads Co. unwatered mine.
- 1915:** Loddon Deep Leads Co. still idle. Average gold values 14 dwt per fathom. Machinery and pumping gear too small for properly draining mine.
- 1917:** Sarah Bernhardt (John Bull) Reef, Talbot: Formerly worked by Mr Thomas. Richest yields came from 40 ft. For some years before operations ceased, the net income was £400 per annum. Owners of two mines 'salted' the faces of the shafts when trying to sell them - capital was withheld and mines abandoned.
- June 1891:** Emu Diggings: Messrs Lumb and Munro working on a promising quartz claim
- 1917:** Victoria Gully: 1 mile west of Talbot. Formerly worked for over half a mile in length in an open cut, a tunnel and shallow shafts (including Gordon's shaft), up to 85 ft deep. The reef is 45 feet thick when exposed in the tunnel, which was driven, so it is said, in 1861. General desire by Prospecting Association to re-work the reef. (Records of Geological Survey, Vol. IV, part 1, 1917)
- 1917:** Victoria Gully - On east side of Tunnel Hill Reef, 1 mile W of Talbot. Formerly rich alluvial. The material in this gully is now being cyanided.
- 1917:** Several small parties working old lead near Amherst, in some cases winning payable gold.
- 1917:** A lamentable lack of enterprise on the part of the inhabitants of Talbot - now comes under the heading of a neglected goldfield. The surrounding country has been remarkably rich in alluvial gold, the source of which is the numerous quartz reefs running through the township. (Records of Geological Survey, Vol. IV, part 1)
- 1917:** Granite Hill, Talbot: A conspicuous knoll, 4 miles SW of Talbot. Formerly nuggetty alluvial found on W side of gully (Reily's Gully) at the southern end of hill (Association Rush?). Several holes sunk without discovering auriferous quartz (date?). (Records of Geological Survey, Vol. IV, part 1)
- 1917:** The population of Talbot is now not a mining one and, left to itself, is not likely to become one. A few members of the Prospecting Association recognise this, and for some time have been endeavouring to attract attention to the district. The general desire seems to be to-work the Tunnel Reef. (Records of Geological Survey, Vol. IV, part 1)
- 1918:** Small parties at work with very little results.
- 1918:** Talbot Alluvial - Encouraging prospects.
- 1936:** Talbot Alluvial - No. 1 shaft employing 160 men. Returns disappointing. No. 2 shaft (Norbury's) up-to-date plant - electric winding engine, motor-driven puddlers, etc. Employing 77 men. Expensive mine, due to amount of water.
- March 1936:** Talbot Alluvial - Long report in *Chemical Engineering & Mining Review*, with diagrams. No. 1 shaft was sunk many years ago and dewatered by Talbot Alluvial Ltd. Description of plant.
- 1936:** Nuggetty Gully Central Co. Assisted by government aid, sunk shaft 50 ft.
- July 1937:** Talbot Alluvial - Ceased operations at No. 1 shaft. Work concentrated on No. 2 shaft.
- 1937:** Report, pp. 642-3. Formerly rich in alluvial gold, noted for nuggets. Nuggetty Gully Central Co. has three-compartment shaft, 10 x 3 ft 6 in, 160 ft deep, windlass, pump. 1,500 oz of gold obtained, yielding up to 12 oz per ton. Harrison's Reef opened up 'many years ago' - tested more or less superficially - south of Nuggetty Gully Central's operations.

- 1938:** Talbot Alluvial - Employing 120 men, extensive development work, No. 2 shaft.
- 1938:** Nuggetty Gully Central Co. - mentioned.
- July 1938:** Talbot Alluvial - Nos. 1 & 2 shafts, electric power and electric winding machinery.

Bendigo General History

- 1851:** The original discovery at Bendigo has one strange feature, in that notwithstanding all the reward committees between 1853 and 1866, no one lodged a claim for this discovery, and when eventually, in 1890, the matter was dealt with by the Select Committee, no less than thirteen people claimed to have been the first to get gold on the field.¹
- Sept 1851:** Giving evidence before the Select Committee of 1890 ...William Johnson (shepherd)... claimed to have found gold in the vicinity of what was later Golden Gully on or about 21 September 1851 and have found it in the vicinity of the Bendigo Valley when employed as an assessment-server in the area in the 1840s* (* A reliable witness, Walter Sandbach considered Johnson to be the first to discover gold on Bendigo. Sitting almost forty years after the event and faced with a bewildering array of contradictory evidence from some twelve claimants, the Committee was unable to decide who first found gold there but was of the opinion it was not Henry Frencham, although he was the first to report its discovery)²
- Sept/Oct 1851:** The Bendigo Diggings grew out of the Mount Alexander Diggings and were at first, regarded as an extension of that richest of all surface fields³
- Sept/Oct 1851:** Fredrick Fenton and Stewart Gibson ... (squatters) ...in their slab homestead on Bullock Creek viewed events with increasing satisfaction. Each morning their drays went lumbering south piled high with carcasses to feed the hungry throng on the other side of the mountain. One day they rode down to Mt Alexander to see the diggings. They tried their hand at dishing and noticed how closely the yellow clay and white quartz gravel resembled that of Bendigo Creek on the northern fringe of their range. Soon after, either in late September or early October, they rode over the range to the Bendigo Valley and there, so Fredrick Fenton claimed later, began tapping the outcropping quartz in what became known as Golden Gully and found gold. However, shearing was in the offing; already they had despatched their overseer, 'Happy Jack' Kennedy to recruit shearers from among the less successful diggers at Buninyong. So they said nothing about their find.⁴
- Oct 1851:** It is difficult to accept that gold was not found on Bendigo Creek prior to the official discovery in late October 1851. The spot on Bendigo Creek where gold was alleged to have been first discovered that October was ... a great sandstone bar known as the 'slate bar' and later, as 'The Rocks', dammed back the water. It was a spot probably much frequented by both shepherd and hutkeeper - to dip water, to wash their clothes, to sit in the sun and while away the hours. ... Yet in all the years the shepherds were in the valley none had noticed gold there⁵
- Oct 1851:** The scene and to pick up a few hints on dishing for gold. When he enquired of Gibson if he might do a little searching for gold on his own account as there was no coopering to be done, the affable Stewart Gibson readily agreed. The women returned and a dray was got ready ... Reaching Chris Asquith's hut by the 'slate bar' on Bendigo Creek, they wasted no time ... On the first big sandstone bar they sat down with their nail can and spare stockings and rolling up their sleeves, set to work. They were quickly rewarded⁶
- Oct 1851:** A day or two later ... the women glanced up from their dishing to see a party of red-shirted diggers approaching. Margaret Kennedy thrust the stockings of gold into the water beside her and sought to disguise their activities. But the small, alert man with curling moustaches noted Mrs Kennedy's milk-dish and nailcan. Henry Frencham was a prospector himself; also, he was a journalist, trained to observe ... Henry Frencham and his companions, Robert Atkinson and a fellow reporter, James Ogilvie Ross, had been prospecting in the Bendigo Valley for some days. They had first found gold in the vicinity of the White Hills and were working their way up the creek, getting gold here and there along the way.

1 Flett, 1979, p204
2 Cusack, 1973, p27
3 Cusack, 1973, p24
4 Cusack, 1973, p25
5 Cusack, 1973, p23
6 Cusack, 1973, p26

Nov 1851: Some nine or ten persons were camped ... on Bendigo Creek. There were the station hands and unknown to them, hidden in the darkness of one of the innumerable gullies, Henry Frencham and his party, quite certain *they* were the first to have discovered a new goldfield. A day or two later, Frederick Fenton and Stewart Gibson with a friend, Henry Byass, rode into the valley to see how the prospectors were faring ... Fenton judged the time opportune to dispatch Byass to Forest Creek to inform his friend, Captain Harrison that payable gold was to be had on Bendigo Creek. But if Harrison was first to receive the glad tidings, all Forest Creek knew of it soon after. Margaret Kennedy watched the one-armed Byass daubing out notices to pin up at Mount Alexander that told of women getting quart-pots of gold on Bendigo Creek. Fenton purchased his shepherds' gold and pondered the slaughterhouse and butcher's shop he proposed building nearby. A few days later, as spring was giving way to summer, the first drays began lurching into the Bendigo Valley ... The firstcomers were sorely disappointed. Most had moved onto Bendigo Creek because every inch at Mount Alexander was already pegged or ransacked. That was a goldfield - this, with grassy flats and great shady trees was like a park at home. They were certain it was not gold country. Many of them did not even unpack their wagons. Disappointed and angered at being, they felt, deceived, they headed back to Forest Creek.¹

Dec 1851: It was almost mid-December 1851 when Assistant Commissioner Horn rode out of the Government Camp at Mount Alexander and headed north with instructions to establish a first government camp on Bendigo Creek Horn set up his camp on the eastern side of the creek and overlooking Golden Gully ... before the year was out the dashing Captain Dana ... replaced him. ... At Bullock Creek Commissioner Gilbert set up camp and by February, Ousley Cockburn was similarly established at the Sheepwash. Their task was mainly to ensure that trouble did not erupt at the washing-places.²³

Dec 1851: Henry Frencham was still in the valley. The retreat of the newcomers did not dampen his enthusiasm. On 9 December he sat down and scribbled a brief account of the discovery of the new goldfield on Bendigo Creek and in its issue on 13 December 1851, the *Argus* carried the first public announcement of the discovery. But even before Frencham's report was released, diggers were beginning to trickle back to the valley. Each day brought new arrivals.⁴

Dec 1851: December grew onto Christmas and the whole 603 of them mustered to a man 'to unite their food resources in an associated Christmas dinner' ... The summer of 1851-2 ushered in a long, unbroken spell of dry weather. The creeks dried up and the yellow clay baked porcelain-hard. The more experienced diggers moved south and waited for the weather to break; the newcomers purchased their picks and shovels and hastened north. The rainbow's end was Mount Alexander but already the diggers talked of a new Eldorado - Bendigo Creek.⁵

According to Benjamin Dodds giving evidence before the Select Committee of 1890 the Bendigo Diggings were, in fact known as the Porcupine Rush.⁶

Gullies and Nuggets – Whipstick 1852:

White Horse Gully Four large nuggets found. In January a nugget of 332 oz (Dascombe); September a 340 oz nugget (Victoria); lump of gold weighing 573 oz partly encrusted with gold; 4th nugget was 384 oz.⁷

Whipstick - Minor gullies and rushes 1852:

Beelzebub Gully was among the earliest Whipstick gullies to be worked. On what was perhaps the first survey map of the Bendigo goldfield, by W S Urqhart in 1852, the gully known today as Beelzebub was named Wellington Gully ... One rush reported in 1863 ... Although nobody lives there today, remains of old chimneys and walls are evidence⁸

1 Cusack, 1973, p28

2 Cusack, 1973, p63

3 Cusack, 1973, p63

4 Cusack, 1973, p28

5 Cusack, 1973, p29

6 Cusack, 1973, p35

7 Perry, 1975, pp166-176

8 Perry, 1975, pp190-198

- Jan 1852:** Though less than twelve months had passed since the hole was bottomed ... Every ounce of the precious dirt was swept and scraped into buckets, hauled up and piled into barrows. Then, with the Bendigo Creek bone-dry, they set off pushing barrows to the Sheepwash or Bullock Creek or even the Axe, to wash it ... At Bullock Creek ... Commissioner Gilbert was in charge ... From dawn to dark the road to the Sheepwash was thronged with men carting wash-stuff ... On the waterhole at the Sheepwash every inch of washing-space was occupied and men sat around for hours waiting their turn. Afterwards, with gold stowed in their matchboxes, they plodded the slow, eight miles back to the valley.¹
- 1852:** Marong - Bullock Creek - Marong, about eight miles west of Bendigo on Bullock Creek, became a gold-washing place and the Commissioner's Camp early in 1852, when the water gave out at Bendigo. The station, owned originally by Hugh Glass, was then occupied by the Campbell's, who had the Argyle Inn there. Early in 1853 there was a report of gold discoveries at Bullock Creek 'equal to Bendigo' and there were reported later discoveries in 1854, and 1856. There was a rush there in 1863, when gold was discovered at Yankee Flat by two diggers, House and Belkam. The opening of the field began with the discovery of various rich reefs in 1867; Carter and Wood opened the Duke of Edinburgh Reef, and Henry Wilson opened Wilson's Reef on Wilson's Hill.²
- Jan - Sept 1852:** It was realised there was gold in The Whipstick. As early as January 1852 parties had ventured into it. One night, a man walked into the firelight at the nearest Government Camp with a sack over his shoulders and up-ending it, tipped out a lump of gold weighing thirty two pounds. It was the largest nugget to have been found in the colony till then and he had come upon it almost on the surface in White Horse Gully in The Whipstick [Dascombe Nugget][the 1852 drought forced men out of The Whipstick] The Whipstick was an arid, hungry domain. It possessed no streams and lacked permanent water even in a normal season. Now in the Spring of '52 men began once more scouring its wastes. The red ferruginous clay was still soft from the winter rains and The Whipstick blazed with wattles. On 20 September in the same gully and close to where 'The Dascombe' had come to light, an even bigger nugget was turned up. [The Victoria Nugget purchased by the Victorian government for £1650] ... Within weeks of the finding of 'The Victoria' a still large nugget, 'The Whipstick', weighing 573 ounces, was unearthed scarcely a foot below the surface. Another of 384 ounces was found in White Horse Gully. This was probably 'The John Bull' that was sold in London for £5000. Many smaller nuggets were also found, but Whipstick gold proved notoriously patchy and many who ventured in with high hopes had little show when summer drove them out again.³
- 1852:** The reefing field known as Ellesmere-Fosterville was discovered in 1852, but only became an established place in 1895.⁴
- 1852/53:** Bendigo Reefs. The quartz reefs at Bendigo were easily discovered. They were there in long lines above the surface, showing gold, yet so rich was the alluvial the reefs were ignored even in 1852-53. The first recorded interest was by E. N. Emmett, the later first mayor of Bendigo. He took specimens of gold in quartz, from what later became Hussler's Reef, to the Commissioner's Camp, but apart from the matter being reported to the Governor on 30 December 1852, little interest was aroused.⁵
- Jan 1852:** The Act 'to restrain by summary proceedings unauthorised Mining on Waste lands of the Crown' received assent. It empowered commissioners, inspectors, constables, troopers - in fact, any persons so appointed by the Crown, to apprehend any digger believed to be mining without a licence. Justices were empowered to issue warrants for arrests and offenders could be dealt with summarily, according to the provisions of the Act. The fine for the first offence was £5, for a second, £15, and for a third or subsequent offence, £30. The way was cleared for the past-time of digger-hunting.⁶
- March 1852:** March moved into April. The heat grew less but the drought persisted. The Sheepwash was dry; the nearest water was at Bullock Creek or Emu Creek, many miles off; only the stream of diggers flowed abated into the Bendigo Valley. Golden Gully was honeycombed, almost deserted and presently, it was Peg Leg's turn. {Accounts differ concerning the order in which

1 Cusack, 1973, p39
 2 Flett, 1979, pp251-52
 3 Cusack, 1973, pp45-46
 4 Flett, 1979, p 252
 5 Flett, 1979, pp 243
 6 Cusack, 1973, p79

the various gullies were opened up. K.McKenzie Clarke, who was on Bendigo from the outset, claimed New Chum was the next, along with Spring Gully and Tipperary Gully; then successively, Long Gully, California Gully, Eaglehawk, Devonshire and Peg Leg. Others place Peg Leg much earlier) ... Lucky diggers who struck 'the pockets of Peg Leg' made fortunes in minutes ¹

April 1852: On Saturday 16 April the rush to California Gully, one of the poorer gullies, took place.²

May 1852: At last, the long drought broke ... Floods poured down the valley. Its bed and banks gouged away, the creek surged unchecked across the flats, swamping the stores and the diggers who woke to find the holes brimming with water and unworkable.³

May 1852: The breaking of the drought early in May 1852 led to the abandonment of the Bullock Creek and Sheepwash stations. But the big influx of diggers and their wide dispersal throughout the valley necessitated the setting up of government outstations. From Golden Gully the diggers soon began gathering the spoils of nearby Spring Creek and the rich gullies about Diamond Hill. Cockburn established station there which, on his transfer to Forest Creek, was taken over by Captain John Urquhart. Assistant Commissioner Panton ... was moved to Bendigo Creek in June to open a new camp at Kangaroo Gully. At Myers Creek Assistant Commissioner Read set up tents for nine troopers ... whilst at the White Hills another outstation opened under Commissioner J M Clow ... The Junction Camp, well known station at the junction of Long Gully and the Bendigo Creek, would appear to have been opened at a later date. Removing from Bullock Creek in May 1852, Assistant Commissioner Gilbert had pitched his tents on the ridge overlooking the creek and the workings below, almost in the centre of the valley ... Gilbert was not at this time in charge of the field, being senior to his fellow commissioners only in length of service. The field was still administratively part of Mount Alexander with its assistant commissioners directly responsible to Commissioner Wright ... By the time Gilbert ...[during first week of October 1852] ... moved to Mount Alexander the camp he had established above Bendigo Flat was rapidly becoming the administrative centre of the field. Soon, it was almost a self-contained township spread over some seventy acres. Apart from the Commissioner's quarters, there were barracks for detachments of foot and mounted police, a licence tent, the gold receiver's office, extensive stables and the grim, log-cabin type lock-up.⁴

April 1852: Gold was found three miles north of Bendigo at Eaglehawk in April 1852 by a party searching for a lost horse. Thew extremely rich Eaglehawk Gully was soon the scene of intense activity while in mid-May a great rush to Red Hill (now known as Virginia Hill) occurred where the surface was very rich. At the foot of Red Hill on the northern side was Sailors Gully, which also yielded well. ⁵

Winter 1852: The Whipstick ... In the winter of 1852 the diggings in the Whipstick at Bendigo began, in the dense forest of low trees and scrub that extended then almost to Eaglehawk. Wright's map [C&W Reports. Plan Bendigo Goldfields by Chief Comm. W. H. Wright, 14 June 1852] showed 'Whipstick Gully' on the verge of the scrub, which was then being worked. The first places opened where Wellington, Napoleon's and Fiddler's Green in about July 1852 ... Commissioner Reef tells us that Devil's Den, Beelzebub Gully and Sydney Flat were discovered in this area soon after he arrived in 1852. ⁶

1 Cusack, 1973, p41

2 Cusack, 1973, p41

3 Cusack, 1973, p41

4 Cusack, 1973, p64-65

5 Perry, 1975, p7

6 Flett, 1979, p245

1852: Three quarters of a mile north of the site of the Government Camp rose Lightning Hill ... The pioneers knew it as White Horse Hill ... soon to be gouged and ever scarred. It too, contained golden treasure. By the close of 1852 most of the gullies around Bendigo and as far north as Sailors Gully had been worked, although some were still receiving attention. A few miles north, over the ridges from Sailors Gully, Sydney Flat and neighbouring gullies were perhaps the northern limit of activity on the Bendigo goldfield at the time. W.S. Urquhart's map of Bendigo diggings, 1852, shows Wellington and Napoleon Gullies, Fiddler's Green (now Fiddler's Gully) and Sydney Flat as the northern limits of Bendigo goldfield. C. Rudston Read, a gold commissioner, established his camp at Myers Creek in 1852. Napoleon Gully was about a mile east of his camp ... The extension of mining was in 1852 temporarily halted along a curved line extending some ten miles from Sydney Flat, along the northern side of Lightning Hill to Epsom. The Whipstick had been reached. The scrub and dense forest, together with a shortage of water and a reduction of population were perhaps the main reasons for halting the advance.¹

May 1852: It was on the 8 May, just a few days after the breaking of the drought, that rumour reached American Flat that in the hills five miles north, beyond California Gully, men were shovelling gold from between each others' feet. The field pulsed with excitement. Rumour flashed from gully to gully - the great bonanza, the mother-lode had been struck. In Adelaide Gully, in New Chum and Derwent, on Spring Creek and Back Creek, tents were down and flung on to carts and barrows with tubs and shovels. The holes were deserted - the rush was on. The murmur of ten thousand men on the move, the fever sweeping the field, even penetrated the sanctum of the government tents as a commissioner wrote:
From the camp the night before we could feel the flutter of excitement. Tents were being struck and baggage packed - the gold fever was in the air. Next morning, as we rode along the bush track, the site was simply incomprehensible. The road was covered from end to end with every conceivable kind of vehicle, from wagons to handcarts and wheelbarrows. The destination of the hurrying throng was Red Hill. The spectacle was, indeed, a remarkable one. It was no longer red, but grey with diggers. They were clustered on it like ants on a mound. Hundreds lay upon their backs, with outstretched arms, gripping perhaps a pistol in one hand, a sheath-knife in the other, and claiming to own at all the ground they could encompass. Hundreds of others were hurrying away the surface stuff in bags so rich was it. The din was tremendous...
It was the opening up of famous Eagle Hawk Gully. Commissioner Panton thought the upper portion of it 'the richest alluvial ever discovered'. It was one of the historic rushes, retaining a charisma over the years. When old diggers met to reminisce, to have been at Eaglehawk, to have participated in the mad rush to Red Hill that autumn day in '52 was to have drained the cup of adventure to the lees. Some 20,000 diggers packed into the surrounding gullies and scavenged the nearby hills. The returns were fantastic. News of the dazzling riches of Eaglehawk Gully electrified the colony ... By June 1852, at the height of the rush, diggers were said to be arriving on Bendigo at a rate of 5-6,000 a week. The road from Mount Alexander was 'one continuous line of vehicles and passengers' and the estimated population of the field reached 40,000.²

July/Aug 1852: Of great interest to the early diggers were the six or seven rounded white hills, 'unique and peculiar to Bendigo', that glistened against the dark of the nearby range at the northern end of the valley. Masses of smooth, water-washed quartz pebbles were cemented to a conglomerate of almost blinding whiteness that was possessed of a 'most obdurate hardness'. Many a digger had blunted his pick on them without unravelling their secret but at length a party of Cornish miners, refusing to accept defeat, drove through them for some sixty or seventy feet. It was back-breaking, slaving toil but they got their reward. Suddenly, their picks sank into soft-pipe clay, white, satin-smooth and seemingly depthless. The men began tunnelling. Presently, the roof forming above showered gold at their feet - the secret of the famous White Hills lay revealed. A wild rush followed. Within days the tents and stores stretched out to Epsom Flat. "The White Hills yielded enormously" writes Mackay, 'and some pretty piles were made of Epsom Flats. The Bendigo Creek Diggings now extended the full length of the valley ...[the diggings] ... embraced almost a hundred gullies and flats.'³

1 Perry, 1975, pp8-9

2 Cusack, 1973, p43

3 Cusack, 1973, pp44-45

1850s+ [1910: April 26]: The White Hills - Cemented alluvial deposits. The somewhat unpretentious chain of hills extending almost from the city to the hamlet of White Hills has been described by geologists as an ancient river bed. ... The early day diggers were not slow to recognise the hidden wealth contained in the different hills, and with the primitive appliances then in use directed their energies to working the richest of the deposits. Some idea of the magnitude of the deposits in these hills is afforded by the cemented alluvium extending in places to a height of 50ft. above the matrix. The thickness of the deposits gradually diminishes on the outer fringes of the hills, where owing to the removal of the surface gravels the Silurian rocks are exposed. In the early stages of operations attention was concentrated upon the removal of the alluvial substance immediately overlying the matrix. The wash was highly auriferous in the bed of the ancient watercourse, which according to data available was in places 300ft. in width. The methods adopted in working the wash was by sinking shafts, and where opportunity presented itself access to the main gutter or bed was gained by tunnelling from the hillside. The extent of the operations is evidenced by the innumerable shafts sunk along the course of the range of hills and the old tunnels exposed to view. At intervals there has been extensive subsidence of the overburden, and in many places the crests of the hills have settled down. In later years the surface deposits provided profitable employment for sluicers, and at the present time there are some old identities who still eke out a living in the locality. One of the few surviving pioneers of the locality is Mr. Sanneman, who, notwithstanding his advanced years, is still engaged working the deposits. When a visit was paid to the locality yesterday the old man was seen collecting material for sluicing at what is known as the fourth White Hill. In conversation with the old aged prospector he grew reminiscent, and recounted his experience, extending over a period of 55 years. The hills nearer the city, he said because of the friable nature of the deposits, had almost entirely been removed. Of the seven hills comprised in the section of the fourth hill contained most extensive deposits. There appeared to be a greater concentration of the cemented at that particular section, and as it was harder the material was not so easy of treatment. The ordinary process of treatment was by sluicing and puddling but in the early period crushing batteries were in operation. About thirty years ago (1880) a co-operative syndicate of Chinamen, working from an open cut on the western slope of the fourth hill carried on sluicing operations. They worked in relays, and sluiced continuously night and day. At that period, Mr. Sannerman states water for sluicing cost £4 per week. The syndicate, it was reported at the time, obtained an average of 60oz. gold per month, and worked there close on two years.¹

August 1852: Despite its size and richness, the field ...[Bendigo Creek Diggings]... could be as fickle as any other. Also, there was a limit to surface riches and the field become greatly over-crowded, so that by August 1852, the *Argus* correspondent could report that 'these hitherto wonderful diggings are now disappointing thousands. Eaglehawk, Spring, American, Sailors, Pegleg have turned out wonderful yields but now the neighbourhood appears to have given up its treasures. He believed that of a diggings population of 50,000 then on the field, not more than one in fifty was making enough to pay for provisions ... Spring brought news of discoveries in other parts of the colony and the less successful or more restless shouldered swags and headed off ...[to]... the Ovens and Creswick Creek. However, those who remained were doing well, particularly on Bendigo, where the flat opposite the main camp had been opened up with 'remarkable success' and some of the old ground at Spring Gully and the Back Creek was being reworked with excellent results. The most adventurous were roaming further afield and probing the forbidding wildness of scrub at the northern edge of the field known as The Whipstick.²

Oct 1852: During the first week of October 1852, Captain Bull arrived on Bendigo Creek to replace Gilbert, and on Wright's appointment as Chief Commissioner of the Goldfields Administration and his removal to Melbourne, Bull was appointed first Resident Commissioner. His stay was brief and in early 1853 he returned to Mount Alexander ... and Joseph Anderson Panton was promoted to the rank of Senior Assistant Commissioner in charge of the Bendigo District and of the Sandhurst Camp ... Panton remained in charge of the Bendigo field throughout its days as an alluvial diggings, and after the sweeping changes following Eureka, was one of the few commissioners retained under the new administration. [appointed Warden of the field]³

end of 1852: By the close of year, the Bendigo Creek Diggings had produced 475,857 ounces during its first full year as a goldfield. Most considered it nearing exhaustion, yet such was the

1 Bendigo Advertiser [DMID records]26/4/1910

2 Cusack, 1973, p45

3 Cusack, 1973, p65

unpredictable nature of gold digging the year ahead saw that amount considerably exceeded.¹

Dec 1852: As early as December 1852 a slab church was erected near Golden Point and by the following March, additional chapels had been opened at Golden Gully and the Commissioner's Camp.²

Dec 1852: Growing civic pretension extended even to nomenclature. On 2 December 1852 the area about Bendigo Flat and including the Government Camp, was officially designated Castleton ... on 18n January 1853 La Trobe rescinded the decision, insisting that henceforth the township should be called Sandhurst.³

1852-1909: Bendigo districts nugget finds.

1852	5730zs	White Horse Gully
1852	384	White Horse Gully
1861	377	Robinson Crusoe Gully
1865	350	Whipstick
1852	340	White Horse Gully
1854	338	Bendigo
1852	332	White Horse Gully
1852	288	Bendigo
1862	243	Kangaroo Gully
1858	242	Kangaroo Gully
1865	190	Whipstick
-	180	New Argus mine
1863	176	Red Jacket, Whipstick
1852	172	Ironbark Gully
1909	157	Catherine Reef United
1903	112	Marong Lead
1852	108	Pegleg Gully
1867	100	Kangaroo Flat
1866	64	Sailor's Gully
1875	60	Ironstone Hill
1873	52	Spring Gully. ⁴

By 1853: at least occasional diggers were casting a wondering eye on ... [reefs] ... In the beginning of that year, two storekeepers from Van Dieman's Land, Amos and Cave, opened up a quartz reef on Specimen Hill and were said to have taken £2-3,000 worth of gold from it. By September the reef was being extensively worked by reefing parties. The quartz was crudely crushed with hammers ... In the same year Jonathan Harries, usually described as an American Negro, secured gold from the reef that subsequently became one of the most famous on the field - the Hustlers ... Certain factors militated against an earlier development of quartz mining on Bendigo. Not least was the small size of the claims. Suitable equipment was at a premium and even the most primitive implement for quartz crushing, a heavy hammer, an unwelcome encumbrance to the nomadic digger. Undoubtedly, however, nothing so discouraged an earlier exploration of the reefs as popular scientific theory that scoffed at the likelihood of rich returns at lower depths - 'even the most learned savants give it as their *ipse* that gold would not be got in quartz below the depth of 300 feet'⁵

1 Cusack, 1973, p46

2 Cusack, 1973, p53

3 Cusack, 1973, p67

4 Bendigo Advertiser [DMID records] 16/12/1912

5 Cusack, 1973, p122

1853: The Hustler's line was discovered in 1853 by an African black named Jonathan Harris, who found gold on the northern slope of Mac's or Hustler's Hill in the lease now held by the Great Extended Hustler's Co. In 1854 J Hustler, Jonathan Latham and John Watson bought Harris's ground (12ft x 12ft), and purchased several of the adjacent claims. These by amalgamations became the famous Great Extended Hustler's mine. Rich gold started at the surface - the first crushing yielded 26ozs. to the ton - and was worked down the northern slope of the hill to Ironbark Gully. "The number of shafts sunk on the reef from its outcrop to the Ironbark Gully gave it more the appearance of shallow alluvial mining than of vein mining," says Wm. Nicholas in one of his letters on "The Golden Quartz Reefs of Australia", contributed to the 'London Mining Journal' in 1884.¹

1853: United Hustler's and Redan - Some early day reminiscences. The ground comprised in this company's extensive lease was first opened in 1853. In that year there were over a dozen claims working on the co-operative principle. Each of the claims had its own shaft and, despite the comparatively small holdings, operations were, on the whole, attended with considerable success. According to the records the spurs and leaders were very rich. There were no fewer than seven or eight different parallel reefs worked in the group of claims. The names of the reefs were, starting W., and going E., the Hustler's, Redan, White, Ragman's, Williamson, Maiden, Sophia, and Bignell's. The last named reef is described as a large formation. Some phenomenal yields were obtained from the different reefs which, starting almost from the surface, were operated at comparatively shallow depths. The water difficulty presented itself at depth was attained, and, as might be expected, retarded the exploitation of the deeper ground. In 1862 some of the properties were amalgamated, and a 12-head battery was purchased by the Alabama Co. from Mr Henry Kock, who afterwards built the present Koch's Pioneer battery. Following the amalgamation another period of great prosperity was experienced. There were 11 small companies in possession of the ground in 1876, and it was agreed that a further amalgamation was advisable. Owing to there being several makes of stone on the surface, there were at that time three, four, and even five claims abreast, while in length the claims were very small. At that time the western ground was considered to be twice as valuable as that on the E. side. The negotiations for consolidation of the various interests were greatly protracted and it was not until October 1877, that registration was affected. The K.K Company at the last moment declined to come into the scheme. Its lease was 47 yards long and 90 to 100 yards wide. For many years the K K Company did little work, and eventually the United Hustler's and Redan, as the parent company, secured the ground, and the K K shaft since remodelled and deepened constitutes the principal base of the company's operations in the S. portion of its lease. It is computed that the gold won by the various claimholders in the locality reached at least 250,000ozs. The present company has won over 112,022ozs. gold, and its dividend record is £162,827.²

1853: The need for better crushing equipment constantly occupied the thoughts of the first quartz reefers. Hustler and Harris had crushed their quartz in 1853 with a dolly. Ballerstedt was using a primitive stamping contrivance worked by a horse. Some Cornish miners were doing the same³

1 Bendigo Advertiser [DMID records] 22/1/1914

2 Bendigo Advertiser [DMID records] 13/2/1912

3 Cusack, 1973, p123

1853:

Bendigo Reefs ... In April 1853, another report said that quartz was being opened with success at Bendigo [C&W Reports, 16 April 1853]. One of the first workings was at Specimen Hill, Eaglehawk, where a digger named McNair had worked with some success in 1852. Another source tells us that two men, Cave and Amos, from Tasmania, worked the first reef at Bendigo in October 1853, which was then known as the Old Specimen Hill Reef, and was worked out. Reefing at Bendigo began in 1853. The story goes that in 1853 a party of African Negroes, who deserted ship, discovered Hussler's Reef [Hustler's?], just south of Ironbark Gully. They cut down the scrub and found gold all over the surface, and soon after sold the reef to Thomas Hussler, a one-armed German. He paid the Negroes, Jonathan Harris and party, a few hundred, and made a fortune selling it to John Watson and Jonathan Latham. Another story of the earliest reefers at Bendigo was of two boys, who discovered the Victoria Reef near Ironbark Gully and sold their claim to Ballerstedt. The 'eccentric German' Christopher Ballerstedt, an old soldier of Blucher's army, with his son Theodore, brought a puddler for £60, after seeing specimens on the surface, at the end of 1853. He soon had a half-ton of gold at the Bendigo treasury. The New Chum Reef, a line of rock running up the hills, was first worked in 1853, and one of the first claims belonged to a Swede named Tyneborg, who once got £2300 worth of gold from thirteen tons of stone there. [Age 11 Jan 1856].¹

By 1853:

Increasingly, life on Bendigo Creek began to revolve about the Camp, and Gilbert's choice of site was already beginning to shape the pattern of future development. With the flow of traffic to and from the Camp, stores began to appear along the banks of the creek below. Soon, they also dotted the flat opposite and began clustering about the western entrances to the Camp at View Point ... Permanence and prosperity began to generate a sense of community, and social attitudes and pretensions, suppressed or forgotten during the more hectic adventure of gold-seeking, began to reassert themselves. 'The blue and red shirted denizen of '53, writes George W. Thomson, 'became the citizen of '54.'²

1853+

Quartz mining. Cornish diggers, many of them from South Australia and the Burra copper mines, began concentrating in settlements about the western gullies where the sinking was deeper and the rewards, generally richer. German diggers ... A German geologist, Gustave Thureau, was to frame the first course in geology and mining when a School of Mines was established, and it was the itinerant German engineer, Jacob Braché who, when alluvial mining showed signs of waning, urged the exploration of the reefs. German initiative was largely responsible for putting his suggestions to the test. Pioneer quartz-reefers included Wittscheibe, Roeder, Christopher Ballerstedt, Kock and Bruhn, Niemann, Collman, Luuffsmann, Lazarus and Hildebrandt ... German diggers also laid the foundation of another important local industry. When alluvial mining began to fade, Doctor Backhaus urged his compatriots to look to the land, and along the ferruginous slopes of the adjacent valleys Grosse, Fuchs, and Albert Bruhn, Carl Pohl, Grieffenhagen and other began hewing out wine cellars and planting vineyards.³

Alluvial diggings: many Italian diggers, and even more Italian-speaking Swiss remained, dispersed particularly, about Epsom and Huntly, at Myers Creek and about the edges of The Whipstick ... Few made fortunes from the fickle Whipstick gold, and with the growth of quartz mining, as a group they turned increasingly to charcoal-burning and timber-getting for the mines.⁴

American diggers poured into the Victorian fields. However, they left in droves a few years later when gold strikes were made in Colorado and in Peru. Mining experience and prospecting skill put them amongst the most successful diggers on Bendigo ... American Flat, American Gully, California Gully and California Hill all bear witness to the presence of the American digger on Bendigo.⁵

Of the cosmopolitan crowd forming the 'strange assembly' in the gullies of Bendigo in the fifties, apart from the diggers of British origin, none were so numerous after 1853 as the Chinese. Mainly Cantonese⁶

1 Flett, 1979, pp 243-244

2 Cusack, 1973, p66

3 Cusack, 1973, p58

4 Cusack, 1973, p60

5 Cusack, 1973, p60

6 Cusack, 1973, p62

- Oct 1853:** From the fines paid at the Police Office £400 was added and the Government made a grant of £500. As a result in October 1853, on a site that came to be called Hospital Hill, Sandhurst's first hospital was built at a cost of £1,078/5/-.¹
- Dec 1853:** Sandhurst's civic aspirations received a fillip in December 1853 when, despite the cold breath of local depression, the township's first newspaper appeared [Diggers Advocate].²
- 1853:** In production, the year 1853 was the richest the Bendigo Goldfield was to know, but before it was out there were clear signs the richer gullies were nearing exhaustion. The digging population was moving further afield; hopeful that if one gully carried gold, so also might the next. In April '53 news broke of the discovery of gold on McIvor Creek, some thirty miles away, and in. excited hordes men streamed off to it. The McIvor road was so choked with traffic that first day wrote one who was there, a man might have covered the distance on top of the hastening procession.³
- late 1853:** The field was depressed. The wild rushes to Bryant's Ranges on Bendigo Creek was past, reluctant though the inveterate digger may have been to admit it, and henceforth, the vitality of the field would depend increasingly upon the unpopular activities of the puddlers and the vision of the first quartz-reefers.⁴
- 1854 onwards:** Nowhere else was puddling practised so extensively and from 1854 onwards it was the puddlers' efforts that had kept the escorts on the road. With its shallow, innumerable gullies and creeks and the vast extent of the early workings, the Bendigo Diggings lent itself to puddling ... The idea was simple but puddling machines could cost as much as £200 each. The machine and horse to operate it were often beyond the resources of the individual miner, so that puddling hastened the trend towards partnerships and small company enterprises. Horses were soon at a premium on Bendigo where some 3,000 were in use in puddling ... As the puddling population swelled from 1854 onwards, sludge from the machines soon began to pollute the creek and in places, almost to choke it ... The alluvial miner regarded the puddler as sourly as did the townsfolk - sludge, like a creeping lava, was depriving him of what little auriferous ground remained. However, the puddling mania continued unabated. At the beginning of 1854 there were a thousand machines in use on Bendigo; by mid 1854 their number had risen to 1500... So rapidly was the creek disappearing and so loud became the public outcry, the Government at length agreed to cut a new course for the creek from the vicinity of Golden Square to Epsom ... soon, the new channel was also filling with sludge.⁵
- 1854:** Bendigo Reefs ...New Chum Reef - In 1854 a well-known claim there was Power and Thompson's Reefs discovered in 1854 were Johnson's Reef (discovered by Walker), Specimen Hill (near New Chum), Tinpot Reef (the first reef opened on the Carshalton line), the Flora Reef at Back Creek, Tyson's, Bird's (discovered by C A Bird), Iron's (opened by James Iron, licensee of the Black Swan Hotel) and another Specimen Hill Reef opened by Edmons. Another reef opened that year was Wetherall Reef opened by George Vance Wetherall, who got £8000 worth of gold before he died after trying to fly from the window of the Victoria Hotel.⁶

1 Cusack, 1973, p71
 2 Cusack, 1973, p68
 3 Cusack, 1973, p71
 4 Cusack, 1973, p99
 5 Cusack, 1973, p116-117
 6 Flett, 1879, pp243-244

- 1854:** The old year died miserably - it seemed the golden gullies had no more to give and economic depression settled over the field. Scarcely had the New Year broken, however, when the news ran through Bendigo Flat of a rich strike to the west, at Bryant's Ranges ... [The rich Maldon field was later worked in the vicinity] ... By mid-years Bryant's Ranges was little more than a memory. Within days, 30,000 diggers had caught a whisper blown across the Charlotte Plains of gold at Simsons [The Maryborough Goldfield] ... Eight weeks later, on what was one of the colony's richest goldfields, only 8,000 of the restless throng remained.¹
- 1854:** In 1854 the Surveyor General, Captain Andrew Clarke arrived with a survey team to straighten out the tortuous tracks of the carters' wagons, and to ink in the permanent township on the blank map of the Bendigo Valley. The subsequent task of planning and surveying the township of Sandhurst was allotted the Englishman, Richard William Larritt.²
- Autumn 1854:** Throughout the autumn of 1854, the diggers from Canton flowed into the Bendigo Valley in an increasing stream, little perturbed at being late arrivals.³
- Winter 1854:** Brought not only a continuing influx of Chinese into the field; also, it brought disillusioned diggers tramping back from abortive rushes. Sludge from the puddlers' tubs was beginning to clog the creek and ooze across the valley.⁴
- August 1854:** The first Sandhurst land sales were held ...in. August. By October the following year, all the allotments in the centre of the township had been taken up and Sandhurst was experiencing a mining building boom.⁵
- Oct 1854:** The need led Captain Bell, Hustler and Irons to procure and install an imported Berdan quartz crusher in October 1854; others, including Ensor at New Chum, Nicholas and party at Specimen Hill, and Young and Co. at Kangaroo Flat, followed their example ... The introduction of such equipment soon pointed to another need - capital with which to purchase and operate it. A Berdan ore crusher, for instance, could cost from £650-£2,400, according to the number of bins carried. Because of this, and despite the rich rewards of the pioneer reefers, development prior to 1860 remained slow and sporadic.⁶
- 1854:** The 1854 census had shown the population of the Bendigo Diggings to be almost 15,500.⁷
- 1854:** Whipstick ... In the scrub proper gold was first discovered at Snowball and Cricketer's gullies in May 1854.⁸
- 1850s:** The recognised Chinese camps on Bendigo during the 1850s were at Ironbark, White Hills, Back Creek, Charcoal Gully, Kangaroo Flat, Long Gully and Peg Leg.⁹

1 Cusack, 1973, p72
2 Cusack, 1973, p72
3 Cusack, 1973, p100
4 Cusack, 1973, p101
5 Cusack, 1973, p73
6 Cusack, 1973, p124
7 Cusack, 1973, p74
8 Flett, 1979, p245
9 Cusack, 1973, p103

1854/55: Bendigo Reefs ... One of the first and richest claims on Hussler's Reef was Sibley's. The crushing machines were operated by horse power until the first steam engines arrived in 1855. Sailor's Reef was one of the richest in 1855, and in June that year five tons of stone from it yielded 1000 ounces of gold. Two Cornishmen, Bassett and Nicholls, on this reef kept there amalgamated gold, like huge Dutch chesses under their beds. By August 1855 there were 400 small warden's leases being operated at Bendigo, and of the 7500 white diggers, 5000 were on the reefs. [C&W Reports, 1 Sept 1855]. The first reef worked on the Sheepshead Line was taken up by Gongire, Lysle, Nerrison, Porter and Griston (Union Co.) in 1855. The first worked on the Derby Line was the Nelson Reef, also taken in 1855. Another reef discovered that year the Anglo, near Job's Gully, about the time that Dawborn, a butcher, got the first real gold at Jognson's Reef. The first reef opened on the Deborah Line was in 1855, just south of Monument Hill. William Kelly ... took a reef on the New Chum Line at Bendigo in early 1855, in partnership with Glissold. He was offered what was later the rich Lazarus mine, then owned by Gibbs and Lazarus, for £40.¹

1855: Hitherto, mining had not been an attractive field for capital investment; the risks were too great. But the 1855 Act for Better Regulation of Mining Companies and the related Act of 1858 had removed the hazards of full liability. No longer could partners be held liable to the extent of their assets for debts incurred in partnership. Liabilities became limited to the extent of holdings.²

1855: Whipstick ... Some rich reefs were opened in the Whipstick in 1855 in about June, and there was a rush to Red Jacket Gully in July following. The discovery of a 'new goldfield fifteen miles north of Eaglehawk, in the marley scrub', opened by Thomas Champion, was reported at this time.³

Quartz Reefs - Whipstick.

June 1855: Flagstaff Hill Quartz reefs on Flagstaff Hill were among the first to be worked in the Whipstick. In June 1855, miners were working on Morehead's Reef, which, however, proved unprofitable, and was soon unprofitable. Extending over many years, a number of parties and companies have with little success, mined this hill and vicinity. Two such companies were: 1907, the Flagstaff Extended Co NL - capital £8000 in 32,000 shares. 1907, the Flagstaff Co NL - capital £4,000 in 32,000 shares ... Miners worked the hill with shaft, tunnels and costeans (former now filled in). Costeans still survive - some are from 12 to 30 ft long, from 3 to 4ft deep, and 3 to 7ft wide. One is 90ft in length ... Nth of the trig station, about 1/2 way down the hill, ruins of an old stone hut (10x10ft inside, 1ft thick walls & remains of chimney).⁴

1855: By June 1855, on Flagstaff Hill, some four miles north of Sydney Flat, a party of miners were working a quartz reef.⁵

1 Flett, 1979, pp244-45

2 Cusack, 1973, p129

3 Flett, 1979, p245

4 Perry, 1975, pp176-185

5 Perry, 1975, p9

- 1855/57:** The Whipstick Diggings were situated along Scotchman's Gully, 1/2 mile south of Flagstaff Hill. It is not known when prospecting commenced in this gully, but during June 1855, miners were working on a quartz reef known as "Moorhead's Reef" on the nearby Flagstaff Hill. ... Until a road was cut through the scrub to the northern plains in 1857, the Whipstick Diggings remained the northern outpost of the Bendigo goldfield. ... [By 1857] ... Along Scotchman's Gully a population of between 1,000 and 1,200 were congregated in a settlement which extended for 3/4 mile. There were at least a 100 bush stores or shops, including refreshment tents and numerous butchers and bakers. Several large, slab bulk stores had been erected and a hotel was in the course of erection. ... The population of the Whipstick Diggings settlement was constantly changing. Disappointed diggers left for other places, but were immediately replaced by others hoping to strike it rich. It was now observed that more newcomers were bringing their families with them. ... During the winter of 1857, the Whipstick Diggings remained the centre of activity in the Whipstick ... Brandy Gully joined Scotchman's Gully in the vicinity of the Whipstick Diggings settlement, and produced a crop of small nuggets over a period of time. To mid-1857 a lot of gold, not to mention several large nuggets had been obtained from the Whipstick, but no rich gullies of fabulous wealth such as were found around Bendigo in its heyday had as yet been discovered.¹
- March 1855:** On 29 March 1855, the Royal Commission appointed to enquire into conditions on the goldfields tabled its report ... The most far reaching recommendation was the abolition of the licence fee and its replacement by a miner's right of twelve months tenure to cost £1 ... The Goldfields Act of June 1855 which gave effect to most of the Commission's recommendations, marked the abolition of the Goldfields Commission and its replacement with Wardens and Local Courts. Under the act any goldfield could be created a Mining District and a Warden appointed to it ... On 29 June 1855 the Mining Districts of Ballarat, Sandhurst, Castlemaine, Avoca and The Ovens were proclaimed.²
- July 1855:** The abolition of the Goldfields Commission and the changed character of the administration after July 1855 made for the first substantial development in the field of local government. [Sandhurst proclaimed a municipal district on 24 April 1855]. One of the Council's first tasks was to carry out a property assessment of Sandhurst which showed the township to possess 1,532 properties possessing a rateable value of £99,021 ... Other issues - the provision of an adequate water supply for the township and the mining industry; the problem of dealing with the puddlers' sludge and the question of street lighting and making - soon began to call for attention.³
- 1855:** [1896, Sept 22]: The South Prince of Wales. [The Prince of Wales line of reef] ... was first pegged out on Good Friday 1855. The outcrops of quartz that had prior to this been discernible on the top of the hill near the old engine shaft had for some time been a favourite hunting ground, where visitors could occasionally pick up very good specimens. There were at the time two camps of blackfellows in the immediate vicinity, and one of the aboriginals picked up and sold to Mr. Hamilton, a storekeeper, a stone that contained 10ozs. of gold. This resulted in some prospecting, and a man named George Clark (no relative of the speaker's) first sunk a shaft and obtained payable gold. As a consequence the reef was first called Clark's reef. Clark soon disposed of his claim to Messrs Hopkins and Denyer, whose names were prominent in the annals of early mining. They soon acquired two or three adjoining claims, and amalgamating the lot, rechristened the line "prince of Wales", a title which has proved lasting. The first little crushing plant on the line was put up by Hopkins and F. Denyer in 1857. It consisted of four light stamps and a Chilian mill. Shortly afterwards a Mr. Brown bought into the claim. In January 1858, the light battery was replaced by heavier stamps, and these early in 1860 gave way to a 24-head battery of revolving stampers. At this time good cakes of gold were coming in weekly. The old engine and pump shaft was commenced and the first winding engine erected in the latter part of 1860, and for about 14 years the mine was worked with profitable results, but later on the line was idle for some time. The South Prince of Wales, the starting of whose machinery they were assembled to witness, was formed out of the southern portion of the old Prince of Wales lease, and a lease to the south including the old Southern Cross claim ... registration in July 1893.⁴
- 1855+:** The tenacity of the first quartz reefers was being richly rewarded. On Victoria Hill, the eccentric German, Christopher Ballerstedt, veteran of Waterloo and father of quartz reefing on Bendigo, who began working an open cut systematically in 1855 ... Ballerstedt

1 Perry, 1975, pp 19-27

2 Cusack, 1973, p109

3 Cusack, 1973, p110

4 Bendigo Advertiser [DMID records] 22/9/1896

was possibly the first to debunk theories of the diminishment of gold at depth. When it petered out in the reef he had been working at 200 feet, he drove deeper to uncover a new reef at 300 feet equally rich. His success lent spur to the efforts of his contemporaries. On Hustler's Reef, Latham, and Watson continued to exploit a rich claim and at Happy Valley, Gibbs, Annear, Wells, Rodier and Young - 'The Happy Family' as they were known - were meeting with much success. Cooper was reefing at Comet Hill and Buckie and others at Windmill Hill. At Eaglehawk, McNair and Caldwell were tapping the eagle Reef and just west of Sandhurst, C.J.Brown, with capital won from highly remunerative storekeeping at Eaglehawk and Sandhurst, was following a golden trail at Break-o'-Day. For a length of 150 feet the outcropping quartz was splashed with gold, yielding 30 ounces to the ton. From 2,000 tons of quartz Brown took away some £7,000 worth of gold. There were others in the vanguard of quartz reefing - Rae and Jackson, Wittscheibe and Company, Luffsmann and Company, Woodward, Noy and Captain Sterry, and not least amongst those who in the latter part of the decade were firmly convinced of the future of the reefs, was the young Englishman, George Lansell, then in partnership with his brother as a candler at View Point.¹

Whipstick nuggets

Sept 1855 Red Jacket Gully - 48oz. From 1855 to 1864, 8 were found)² Whipstick - Minor gullies and rushes

18 April 1856: Canadian Hill ... [reporter from *Bendigo Advertiser* 29 April 1856]. Canadian Hill situated near the Whipstick's southern fringe only 2 miles from Eaglehawk, where 2,000 people were camped. Here the gold was in the surface of red clay. There was no water but the miners were digging dams to catch winter rains and stacking the dirt in heaps ready to wash off later.

April 1856: Peter the Great ... [reporter from *Bendigo Advertiser* 29 April 1856] ... Peter the Great gully being worked. Adelaide Hill ... a miniature of Bendigo's famous White Hills (cemented gravels) was being prospected ... Adelaide Hill for many years proved a tantalising area to the diggers. The sinking was often deep and hard ... There was a minor rush in 1858 ... A number of sawpits were operating around Adelaide Hill in 1858 ... The sawn timber was used for "the construction of puddling machines, tent store frames and bush erections of all kinds". Towards the close of July 1860, 3 men prospecting the north-eastern slopes of Adelaide Hill struck payable gold at the shallow depth of 4 feet. By the 2 of August, some hundred claims were pegged ... the lead was traced northwards where the sinking increased from 20 to 30 feet and over. It was estimated that by 13 August, between 250 and 300 men were on the site ... Scarcely a week later the lead had been followed into private property, several paddocks owned by Mr Matchett, a Sandhurst business man [land owner set terms, usual strife] ... 26 of August it was reported that although 1,000 claims were pegged out shepherding. Towards the end of September much of Mr Matchett's land was deserted and many miners had left the rush. As the lead was followed northwards, the shafts were over 70 feet deep. Most claims were poor, and also there were carting/ crushing costs. One party was carting 4-1/2miles to Catherine Reef Battery.³

1856: By 1856 the problem had begun to assume alarming proportions. Many fine holes along the creek had been filled and irretrievably ruined, and the spreading sludge was beginning to damage private property. As Warden, Panton urged the puddlers to cut sludge-drains. As a result, a haphazard network of drains came into being feeding into the main channel. The creek itself was already inundated and as winter rain and floods gouged out the old channel, the spreading floodwaters deposited thick layers of silt and slime about the shops...⁴

1 Cusack, 1973, p125

2 Perry, 1975, pp166-176

3 Perry, 1975, pp190-198

4 Cusack, 1973, p117

- 1856:** Most of the small gullies were deserted as the results of a new rush to the lower end of Sydney Flat. Some 2,000 people, including a number of Germans, occupied the flat for a length of two miles where the sinking in places reached thirty feet ... Later, in September, the population had decreased considerably. Some went to a new rush at Ironstone Hill near Epsom, but many travelled to the big rush further afield at Dunolly ... In 1856, several puddling machines were at work on the previously-worked upper end of the flat. Here, where Beelzebub Gully joined the head of the flat, a Chinese camp was situated for some time. ¹
- 1856:** Whipstick. Many of the smaller gullies nearby, some of them tributaries of Sydney Flat were scenes, sooner or later, of short-lived rushes. During July 1856, there was great activity for a brief time in a small un-named gully some 3/4 of a mile distant from the flat. An East Indian had struck it rich, finding ten small nuggets weighing over forty ounces. The sinking was shallow, up to 12 feet, and within a few days between five and six hundred diggers were at work. ²
- 1856:** Whipstick - Early in 1856 Myer's Flat had been rushed, Wellington Gully was opened and there was a rush to Adelaide Hill in the Whipstick. ... In April 1856 'a new gully in the Whipstick' was discovered and 600 men were there in a few days. The chief places worked at that time were on the Whipstick verge, at Red Jacket and Blue Jacket Gullies, German Gully and One Eye, where a one-eyed man got twenty-seven ounces of gold in a patch. In May 1856 surfacing on Canadian Hill was opened up, and a few weeks later Dead Horse Gully, Centipede and Sydney Flat depopulated the other places round about, and there was a rush of about 3000 men. In July 1856 Peter the Great's Gully and Opossum Gully were opened, and the following December there was a large rush near Wood's Pick and Shovel Hotel ... ³
- July 1856:** Wallace Reef ... was worked by a party, Scott & Co, in July 1856. They preserved for some time, and by Oct 1857, Wallace Reef was a busy place with a dozen claims in operation. One party had already struck payable gold at a depth of 20 feet ... A visitor to the Whipstick in 1862 inspected the mines on Wallace Reef, and described a crushing machine there "a primitive looking battery of from four to six stamps driven by a small high-pressure engine, and worked by a party of Germans" ... Towards the close of 1863, Wallace Reef was deserted ... The battery was later shifted further into the Whipstick to the Shamrock Reef, where it remained in operations for many years. ⁴
- 1856 [c. 1907]:** New Prince of Wales. Some early day records. Record available show that the ground now included in the New Prince of Wales lease was first worked in 1856. At that period rich surface spurs were operated upon, and a large quantity of gold was won by the pioneer prospectors. It is recorded that crushings from spurs yielded from 1 to 10ozs. to the ton. In 1859 the small claims were amalgamated and two co-operative parties were formed. Hopkins and Co., a party of four, taking the southern ground, and the Pegleg Company, the northern. Hopkins and Co. working to a depth of about 300ft. were very successful, and the Pegleg Company operated with good results down to 100ft. or more. The two co-operative parties between them paid in dividends over £80,000. The next claim N. of the Pegleg, known as the N. Pegleg met with the same results. Later on, an amalgamation of Hopkins and Co. and the Pegleg claims was effected and they became the Prince of Wales United. It is also recorded that this company worked successfully from 260 to 320ft. ⁵

1 Perry, 1975, p11
 2 Perry, 1975, p13
 3 Flett, 1979, p246
 4 Perry, 1975, pp176-185
 5

late 1850s: The issue that occupied the most attention in the post-Eureka period, far transcending local issues was the Land Question. The licence fee had been abolished; digger hunts were an ugly memory; the digger voice had found an echo in parliament and local government was groping its way into being. One major grievance persisted - the squatters iron grip on the land. The grievance deepened as the digger's world began to disappear. Occasional rushes flared to keep alight his hopes but as the years drifted into the late fifties, the digger, tired of scratching a meagre living, mostly on dying fields, turned envious eyes to the squatters' holdings. The dream of returning home, fortune in hand had faded; for many, adventure had ceased to beckon. Most diggers had been in their early twenties on arrival; they were now nearly thirty. They thought of marriage, of settling down - but the lands were locked against them ...¹

late 1850s: But if the thoughts of many diggers in the late fifties and early sixties turned hungrily to the land, there were others in the Bendigo Valley content with the glint of gold in the puddling tub, or convinced of the riches awaiting discovery in the great quartz reefs that buckled and plunged deep below the valley.²

Whipstick nuggets

Sept 1857: Brandy Gully² nuggets, 194oz & 68oz by puddler named Pahlow. A reminder of Pahlow still exists in Sandfly Gully. Enclosing an area of perhaps 1/4 acre, the remnants of an old stone wall and foundation of old chimney. Pahlow's former home.

Nov 1857: Elysian Flat. Greatest rush in the Whipstick was to Elysian Flat in Nov 1857. It was rich nugget country and from 1858 to 1904, 21 nuggets ranging from 22 to 240 oz were recovered. 16 of this number found during 1858, the boom year at Elysian Flat. 1857-58: Scotchman's Gully: 7 nuggets of from 22 to 370ozs - the 370ozs (named Whipstick monster).³

Nov 1857: The Elysian Flat Diggings (now Neilborough) on the fringe of the Whipstick revived ...[alluvial]...hopes.⁴

1857: Whipstick - A note in 1857 tells us that one of the chief openers of the Whipstick was a Mr Moorehead, who discovered Sandfly Reef. Early that year Drunken Scotchman's Gully, Paddy's Gully and Sandfly and Brandy Gullies were opened up ... The gullies north-west of Scotchman's, near Flagstaff Hill, were discovered at this time, and in May 1857 Phillips and party discovered gold about eight miles to the north-east at what became Phillip's Gully, where 400 men were working in July.⁵

1857: *Bendigo Advertiser* 29 May 1857 - made Phillips Gully Rush public - new and payable gold-field had been discovered by some parties working near the outskirts of the Whipstick Scrub, in the vicinity of Piccaninny Creek, about 28 miles from town. The greatest drawback to mining in the Whipstick had been the almost continual shortage of water. At Phillips Gully, the diggers united in an effort to improve their supply. By mid-June it was possible for anyone to reach Phillips Gully without becoming lost. From the recently-finished road from Scotchman's Gully to the northern plains, a rough track branched off to the new rush ... At this rush the population was estimated at between 150 and 200. Three small stores and a butchers shop had been erected and the miners were busy building their new dam ... The gold in this gully was very fine, no nuggets were found and only a few were successful. For most it was a failure and the end of June spelled "Finish" to this rush. Seven years later, Phillips Gully was again the scene of a minor rush. In April 1864, some 50 miners were working here, but with unspectacular results. Today, Phillips Gully is deserted, but numerous eroded, shallow holes remain. Also there are remnants of several puddling machines, relics of those who worked in the gully later.⁶

July 1857: The Whipstick Prospecting Association. By July 1857, many prospectors and residents of the Whipstick realised the necessity for a combined effort to promote a more thorough search of the scrub for mining purposes ... Little was heard concerning the Association until on 31

1 Cusack, 1973, p112-113

2 Cusack, 1973, p115

3 Perry, 1975, pp166-176

4 Cusack, 1973, p125

5 Flett, 1979, pp246-47

6 Perry, 1975, pp33-37

August 1857, a Bendigo newspaper *The Courier of the Mines and Bendigo Daily Mail* reported the Associations activities. “ We are glad to find that the Whipstick party have lately succeeded in obtaining some assistance (to a very small extent, however) in the town, have set to work in earnest. Four men are at work under a manager”. The committee is opening an entirely new country about 5 miles to the westward of the Flagstaff. The party have been at work only a week, but they have got two shafts down - one to the depth of 22 feet and the other 25 feet; neither of them yet bottomed ... The new ground now being opened up has been christened the Elysian Flat. *The Bendigo Advertiser* made no mention of operations on Elysian Flat until November 1857, when it announced, “A prospecting party consisting of Messrs. Ross, Mason, Jamieson, Smith & Glover, have struck gold in payable quantities close to the Deadman’s Hut, on the other side of the Whipstick, near the road from Piccaninny Creek to Myer’s Flat. The results are about one ounce to the load.” By November, some dozen shafts were being sunk, and the greatest rush ever in the Whipstick had commenced. The Victorian Government made rewards available for the discovery of new and payable goldfields. On 15 June 1864, the sum of £350 was recommended as payments to discoverers of the Elysian Flat Goldfield. ¹

Oct 1857: Whipstick ... In October 1857 a party consisting of P. G. Emmett, Eugene Ross, Alexander Lovell, Christopher D. Smith, Robert Jamieson and W T Glover, discovered a new goldfield north of Flagstaff Hill in the Whipstick, which became known as Elysian Flat, which was surveyed soon after as Neilborough. This party applied for and was paid a reward of £350 by the Rewards Board in 1864. By May 1858 there were 5585 diggers working in the Whipstick. The bulk of these were at Elysian Flat, but soon after this lead was lost and not re-discovered until 1862.²

1857 - 1904: Greatest rush in the Whipstick was to Elysian Flat in Nov 1857. It was rich nugget country and from 1858 to 1904, 21 nuggets ranging from 22 to 240 oz were recovered. 16 of this number found during 1858, the boom year at Elysian Flat. ³

1 Perry, 1975, pp38-41

2 Flett, 1979, p247

3 Perry, 1975,p172

1857-1902: Elysian Flat Goldfield: The lead on this flat was to prove a lengthy one, and where mining first commenced, the shafts were down from 20 to 40 feet. As the lead was traced in a north-westerly direction the sinking increased, finally reaching depths of 100 to 120 feet, forming a deep lead. The lead was also followed south where it gradually shallowed, trailing off into the scrub where it was known as the Shallow Diggings. Eventually the bed of this ancient, buried stream was followed along its tortuous path for over 3 miles. A visitor to the new rush in mid-November 1857, estimated the population at no less than 600. He observed that with one exception all the stores on the Whipstick Diggings had been moved or were in the process of removal to Elysian Flat ... Towards the close of November the population had risen to 1500, some 700 of them miners ... Many miners were coming from Sandhurst and Epsom. The Epsom diggers were renowned for their skill in sinking deep shafts in alluvial ground ... Each day, newcomers arrived at Elysian Flat, but because of water shortage, and many also left. Washdirt had to be carted to a creek 3/4 miles to be treated, the cartage costing 15 shillings per load. During December ... down on the flat were between 50 and 60 stores. They had formed a street some 120 yards long ... Many miners were now bringing their families. As the first month of 1858 came to a close, the population on the diggings was estimated at 2,000. The first hotel was under construction. Sometimes the run of the lead was lost, only to be found again by some miner who chanced to sink in the right place. Early mining on Elysian Flat became a series of minor rushes. The first school at Elysian Flat was opened on 26 April 1858. The Whipstick and Elysian Flat Water Company - formed to create a permanent water supply for the goldfield. Eventually two sites were chosen close to Elysian Flat, and a contract for the sinking of one shaft and the excavation of a reservoir was let to McNair and Co. By early June, the excavation of a dam 200 feet long, 18 feet wide, and 6 feet in depth was commenced, while the shaft was almost a hundred feet in depth ... After reaching the contracted depth of 150 feet, the shaft was making water very slowly - a 1/4 pint per minute ... The last known report 23 Sept 1858 "at Elysian Flat, the respective works of Mr. Benson and Messrs. McNair and Sayers, still progressed slowly, and there is little doubt by the time the warm weather sets in, water to a certain extent will be available, at either, though of course on a very limited scale". By the close of 1858 the Elysian Flat Rush was past its peak, the population considerably reduced, to dwindle further over the years. Series of rushes: worked out by July 1858, known as The Shallow Rush. August 1858 - 2 miles east of Elysian Flat known as Black Rock Flat. During August 1858, a survey was commenced for the site of the township of Elysian Flat. The township was to be on rising ground a short distance west of the Elysian Flat Creek ... The town site was gazetted the Township of Neilborough on 3 August 1860. In 1865 Neilborough was included in the Borough of Raywood at its formation. The Borough of Raywood eventually amalgamated with the Shire of Marong in 1915. Early in 1859 the population of Elysian Flat declined. Occasionally there were minor rushes to various parts of the flat, but most alluvial mining was confined to the lower end of the flat in deep sinking. The last mining on the deep lead was in 1902, where Morshead's shaft reached a depth of 121 feet. This was the deepest shaft on the Elysian Flat alluvial, and Morshead's mine was called the Ram's Horn. ¹

1857: Interest quickened with each reef opened and with growing awareness of the potential value of the crushing machine. It came to be accepted that in the reefs lay any future development of the field. Unfortunately lack of capital excluded most diggers from participation. A first attempt to grapple with the problem was made at a meeting at the Criterion Hotel in June 1857 when forty or fifty miners formed the Bendigo Quartz Mining Company, each paying a membership fee of five shillings and promising a weekly contribution of a similar amount, in order to raise capital. Each was allotted a single share. Usually regarded as the first mining company formed on Bendigo, it did not meet with marked success but, at least, it represented a beginning.²

1857-1859: In other respects the field was dying. At Epsom the 'cement' was yielding payable results in the late fifties with crushing; the Huntly alluvials were mostly deep leads beyond the scope of the individual miner. As a final gesture the Camp Reserve was thrown open to digging in 1859 but yielded little. By contrast, the achievement of the reefers dispelled any lingering doubts of the potential of the reefs. In April 1859 the first 'golden cakes' went on display. Sibley and Company showed a huge 'cake' of 1,230 ounces of solid gold won from eighty tons of stone at Ironbark Gully. That produced by the Canadian, Richard Burrowes and his partners from their claim on the South Victoria reef, represented an even richer return. Its 730 ounces had come from a mere forty-five tons of stone.³

1 Perry, 1975, pp42-62

2 Cusack, 1973, p126

3 Cusack, 1973, p126

- April 1858:** In April 1858 the local Mining Board passed a first by-law governing the sludge question. A series of amendments and subsidiary regulations on the issue followed. A fee of £12 per machine per annum was introduced for the maintenance of existing facilities until such time as the Government provided a main sludge channel for the district.¹
- 1858:** Lightning Hill/Whipstick ... One of the richest so-called "main" lines of reef on the Bendigo goldfield was the Hustler's ... The reef continued northward, entering the Whipstick ... at the foot of Lightning Hill. It was here in 1858n that a party of Germans began prospecting on their claim that extended for 200 yards long the line of reef. At first they were unsuccessful, but they preserved until in 1861 they struck rich stone which yielded 2-1/2ozs of gold to the ton. A company consisting of 11 partners was formed, and as most of them came from the Black Forest region in Germany, they named their mine after this district of their homeland. On 18 Nov 1861 ... named the mine "Black Forest Reef Company" ... from 1861 to 1867 some 2036 oz of gold were obtained. In 1899 the Black Forest was being worked by the J.R. Exploration Syndicate, when a shaft was sunk to 250 feet ... This syndicate erected a wooden poppet legs and installed a steam winch. Later the shaft was deepened to 1060 feet but with poor results. Calls amounting to £8770 were paid during the years 1904 to 1907, and the mine proved a failure.²
- mid 1858:** As Chairman of the Sandhurst Mining Board, 'the indefatigable John McIntyre' fought a last-ditch stand on the private miners' behalf but it was a losing battle. In mid-1858, O'Shanassy, then Premier, convened a meeting of representatives of the Boards to resolve the issue.
- 1858:** Gold was being worked near Axedale in 1858, and in 1860 the Great Eastern Reef at Axe Creek was discovered by Lowden, Lamont and Talbot.³
- Nov 1858:** A Royal Commission under the chairmanship of Sullivan, was appointed to enquire into the best means of coping with sludge disposal on the Bendigo Goldfield and £25,000 was placed on estimates for dealing with the problem throughout the colony. When the Commission tabled its report, it recommended construction of a box-drain channel running the length of the valley (10 miles) and draining into Tyson's Swamp, below Huntly. There, a reservoir was envisaged. As well, the construction of a storm-channel was recommended. Work commenced almost immediately ... The channel did not prove wholly satisfactory. Maintenance was costly. The Commission's recommendations of hardwood planking were shortsighted. Before the decade was out, it was replaced with sandstone, and in some instances, bluestone flagging of the central section of the creek. Later still, it was considered advisable to pave the bed of the creek itself.⁴
- 1858-1860s:** The air of 'progressiveness' that so excited Stamer was directly related to Sandhurst's emergence, as the colony's most important quartz mining centre. Confidence in mining investments had been restored and the Bank Act of 1858, enabling mining companies to give a lien and mortgage, gave impetus to company formation. By the end of the sixties, three million shares held in local companies exceeded the combined share-holding of the Ballarat and Beechworth mines by more than half-a-million, whilst the Sandhurst mining claims were worth almost £2,000,000 more than any other fields.⁵
- 1858:** Messrs Cornish, Bruce and Company, the biggest contracting firm in the colony who were then engaged in building the Houses of Parliament, put their signatures to the contract for the construction of a double-track line to Sandhurst at a price of £3,356,937. Work commenced on the line near Footscray on 7 June 1858 ... For its contractors, Sandhurst's dream of a rail-link with Melbourne soon became a nightmare. Apart from industrial and constructional problems, bad weather during 1859-60 seriously hampered progress, particularly through the Black Forest quagmire to Woodend ... By October (1861) the line was nearly completed. Castlemaine celebrated on 15 October 1862 and a week later, His Excellency, Sir Henry Barkly, accompanied by Lady Barkly, arrived to add lustre to Sandhurst's great day.⁶

1 Cusack, 1973, p118

2 Perry, 1975, pp176-185

3 Flett, 1979, p 252

4 Cusack, 1973, p119

5 Cusack, 1973, p137

6 Cusack, 1973, p142-46

- 1859:** The Government had voted a grant of £50,000 for the provision of water on the colony's goldfields. Sandhurst decided to spend its share of the vote on a reservoir ... Not until the beginning of 1861 was a start made ...[on a reservoir]...at Grassy Flat.
- 1859:** Quartz mining - Elysian Flat Goldfield. During Jan 1859, a party of miners sinking a shaft on Elysian Flat struck a rich quartz reef at a depth of 50 feet. The party was known as Oates & Co. [named Sir Henry Barkly Reef] ... Another reef on Elysian Flat, the Nuggetty Reef, which ran parallel to the Sir Henry Barkly Reef, was opened up in August 1859 ... Other reefs worked on and in the vicinity of Elysian Flat was Moore's Reef, Stringer's Reef, Kannobian Reef and Uncle Sam Reef. The Sir Henry Barkly Reef proved the best, and mines on this line worked for many years. The first record of a crushing machine on Elysian Flat was that of Whisker and Co. By the close of 1858, this company had installed their boiler, a dam was under construction and the installation of machinery to operate a steam puddling machine and a quartz crusher, was almost completed. A Mr. McPhail commenced erection of a crushing plant on the flat during April 1859. This was driven by a 12hp steam engine. ¹
- 1859:** Whipstick ... A rush began in January when Alexis Luichard got gold near Gilchrist's, and Patchy Flat was discovered and caused a rush of 100 men. This was followed by another rush to Myer's Flat when Vincent Pyke re-discovered the lost lead there.²
- 1859:** Ironically enough, the boom in mining which Sandhurst was about to experience stemmed indirectly from the very absence of water so essential to mining. Tentative efforts over the years to provide Sandhurst with a water-supply had come to nothing. The Coliban-Campaspe country had been surveyed from levels in 1854 and in 1855 Emmett had attempted to initiate a scheme to provide Sandhurst with water. Interest was lacking but Emmett was persistent. At a public meeting in Melbourne on 19 April 1858 he announced plans entered into with the Municipality of Sandhurst for providing a permanent water supply. A reservoir holding 86,259,000 gallons was to be built at Golden Square. Company promotion was in the air and Emmett envisaged a realisation of his scheme through the formation of a company incorporated by Act of Parliament, and possessing capital of £60,000, subscribed in 12,000 £5 shares. So it was that on 11 August 1859, the Bendigo Waterworks Company ... was launched. The company was concerned with more than water. Gold won from the excavations for the bank of its first reservoir would, it was anticipated, pay for the reservoir's construction. Seven subsidiary reservoirs were planned. In effect, the Waterworks Company was a fully-fledged mining company. Its shares quickly soared to £13 and attention focussed upon Sandhurst and its reefs. Speculators descended on the field. Elated by his success with the Hercules, Butters launched the Johnson's Reef Company and so great was the rush to invest in the venture, the Company had to close its doors at 3 pm. on the day of its launching and refuse to accept further moneys. Sandhurst found itself in the throes of its first great investment spree. By the end of 1859 a hundred-odd mining companies had been floated. Their number doubled over the ensuing twelve months. At the height of the boom 391 applications for leases were lodged within a fortnight, involving 2,280 acres of alluvial ground and 27,000 yards of quartz reef. Much of the activity represented a 'take-over' of existing claims. During 1859 only three mining leases had been issued in the Mining District of Sandhurst. In 1860 the figure rocketed to 214, most of them on Sandhurst itself and representing more than half of the total number of leases granted in the colony that year. Such, however, was the deceptively ephemeral nature of the boom that by 1861 the figure had dropped to 59, and as early as January of that year, no more than fourteen of the hundred or so surviving companies were paying their way. The rest had mostly ceased operations, if, in fact, they had ever started. Some £1,000,000 in capital investment, or approximately \$30,000,000 in today's currency, had disappeared. Many of the companies got no further than the broker's office and were never intended to do so. Others 'put in an appearance' on the field and folded overnight. A very few prospered. Mostly, these were companies operating on proven ground and controlled by mining men who served an apprenticeship on the field. ³

1 Perry, 1975, pp62-64

2 Flett, 1979, p248

3 Cusack, 1973, p130

Aug 1859: No 1, or Kangaroo Flat Division. (Edward T Harper).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2586	1150
Quartz miners	1114	
	3700	1150

The machinery is as follows:

Alluvial mining:

Steam engines,	6-175hp
Horse puddling machines,	321

Quartz mining:

Steam engines,	17-252hp
Whims,	7
Horse whips,	4

Approx value of all plant in the Division is £69,268. There are 411 horses employed in quartz and alluvial mining. Water is very scarce on this division ... puddlers, who have in the meantime betaken themselves to other pursuits, the principal of which is wood splitting for fuel, which is in great demand, owing to the large number of steam-engines to be supplied therewith. Steam puddling companies supply themselves with water mainly by shafts sunk through the quartz to sufficient depth below the water-level to insure an adequate and constant supply. Many of these veins or leads run through the ground taken up by all our alluvial mining companies and will, I have no doubt, after the alluvium shall have been worked out, become a source of revenue ... In my division there are six alluvial companies - two of which are at work, and the rest are in active preparation. Quartz mining is steadily progressing, and perceptibly approaching a more mature and permanent condition, which is shown by the number of fine powerful steam-engines in the course of erection in and around Bendigo, principally for the purpose of drainage, without which no depth under water-level could be attained, and it is at such depths that the wealth of the colony exists ... Until the machinery, etc, of the various quartz mining companies shall have been completed, and a good supply of water obtained in their dams, very little change will have taken place, except that each company is employing a large number of miners, extracting and burning immense heaps of quartz, preparatory to the completion of their crushing mills. These kilns, in many instances have been tested, sorted and classified, so that they may know what returns to expect from them. In my last report I substituted the name of Messrs Dott for that of Messrs Fagg & Co. whose claim on Glasgow Reef (called Wellington Reef) had turned out rich stone yielding 12oz. to the ton. They have carried the body of stone entirely before them done to water-level, and they have stopped working to sink a whim shaft, without which it would be impossible to follow the stone any deeper. Glasgow Reef - The Golden Point Company on this line has commenced in earnest. They have opened out on the surface the entire reef, and are carrying away the whole mass of quartz, which yields on the average about 3oz. to the ton. Thistle Reef, Dr. O'Connell's Claim - from this line they are still taking out very rich stone, yielding about 7 oz. to the ton. The next claims N. and S. have also struck the lead and getting out stone equally rich. Sheep's Head - The Union Company's claim on this line has struck a new body of quartz, which is yielding about 4oz. to the ton.¹

Aug 1859: No 2., or Bendigo Flat Division (William Jahn).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	806	131
Quartz miners	682	
	1488	131

The machinery is as follows:

Alluvial mining:

horse puddling machines,	200
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Quartz mining:

Steam engines pumping, crushing, etc.	10-260hp
Whims,	26

Approx vale of all plant in the Division is £51,800².

1 Mining Surveyor's Reports, August 1859

2 Mining Surveyor's Reports, August 1859

August 1859:

Eagle Hawk Division (G W Hart).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	4471	56
Quartz miners	372	
	4843	56

The machinery is as follows:

Alluvial mining:

Steam engine,	1-6hp
Horse puddling machines,	195
Whims,	6

Quartz mining:

Steam machinery, 24-467hp

Approx value of all plant in the Division is £43,700

Alluvial mining in this division is in a complete state of stagnation, the want of rain being so severely felt ... Nearly all the puddling-mills have left off work, and of course the men who were employed on them are idle ... The scene is, however, in some measure, enlivened by the proceedings of the steam puddling companies, who are making preparations for the ensuing season. None of their works are yet sufficiently advanced to merit a separate description ... This event [advent of alluvial mining companies] is anxiously looked forward to by the more indigent part of the mining population, in the hopes of getting permanent employment. There are still a few men working with the tub and cradle, making a very precarious living, and I am lead to believe that most of them would prefer earning moderate daily wage where there is certainty than trust to the more uncertain produce of the now almost exhausted gullies and flats Among the more advanced of the works belonging to the lately formed companies in my division are those of the Eagle Hawk United Steam Puddling Company.¹

August 1859:

Elysian Flat Division (Michael Ryan).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	810	480
Quartz miners	1,184	
	11,994	480

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping, puddling, etc -	1-12hp
Horse puddling machines,	240
Whims,	13

Quartz mining:

Steam engines winding, pumping, and crushing, et - 19-290hp

Approx value of all plant in the Division is £56,580

My division comprises Sandhurst and Elysian Flat. The latter portion is about 16 miles distant from Sandhurst. Up to the present time it has not been well prospected, although an area of about six square miles has been partially worked. Latterly individual mining has become unremunerative, and most of the miners have abandoned their claims. There are, however, four application for leases, and a very general opinion exists, that the reefs would richly repay a judicious application of capital. In the Sandhurst portion of this division also, individual mining is declining. The Chinese, who formed a large section of this class of miners, fail to realise subsistence, and a considerable diminution of their numbers is very perceptible. In September and October, 1859, numbers of alluvial miners sought and obtained grants of sites for horse puddling machines and dams, but alluvial mining becomes gradually less remunerative, and is declining in this division. The present yield of alluvial, however, is more than just adequate, to the reimbursement of outlay. The condition of the miners is affected by want of water; and this want seems to be caused by the method adopted for the preservation of water, viz. in a gully, or a flat, where a number of horse-puddling machines are at work in close proximity. Each owner has, for his own machine, a reservoir or dam, generally very shallow, but of considerable superficial extent, thereby presenting the greatest surface for evaporation. Instead of being so distributed, if all water were held in one reservoir, sunk to the bed-rock, and properly constructed, the supply would last much longer, and probably not fail at all.²

1 Mining Surveyor's Reports, August 1859

2 Mining Surveyor's Reports, August 1859

1850s: The most easterly of the three main lines of reef on the Bendigo field, the very first crushing from its surface outcrop on Hustler's Hill in the fifties, had yielded 26 ounces to the ton.¹

1860s: Robin Hood Company was founded in the mid-1860's and one report in *The Bendigo Advertiser* 14 July 1865, stated that a new whim was in the course of erection to enable further shaft sinking to proceed. Two years later, when the shaft had been sunk to 300 feet, the mine was not paying, but in June 1868, the company crushed 130 tons of quartz for 86 oz, their largest return to date. By 1871 the Robin Hood Company had been reformed into a Registered Company with capital of £20,000 ... This company was not successful, and in 1878 their lease, on which the shaft had been deepened to 400 feet and a winding plant erected, was purchased by an adjoining company, the New Moon Company who were later to recoup a fortune from the Robin Hood claim.²

1860s: The sixties ushered in Sandhurst's first mining boom. In 1858 ... James Stewart Butters who, a couple of years before, had entered into a highly successful partnership with W.G.Baillie, as gold-buyers and share-brokers. Butters had heard of the 'golden cakes' being won by Sandhurst's quartz-reefers. He lent a close ear to tales of vast riches below, waiting to be tapped. It was a situation, he felt, ripe for exploitation. Hitherto, mining had not been an attractive field for capital investment; the risks were too great. But the 1855 Act for Better Regulation of Mining Companies and the related Act of 1858 had removed the hazards of full liability. No longer could partners be held liable to the extent of their assets for debts incurred in partnership. Liabilities became limited to the extent of holdings. Butters was much impressed, and soon, was making history as the originator of the local gold mining companies. The same year he launched the Hercules on the rich New Chum Reef as a first joint stock venture. He chose shrewdly. The Hercules had been worked as early as 1855 and very profitably; the venture could hardly fail.³

1860: There had been 1,592 machines on the field.⁴

Jan 1860: No 1. or Kangaroo Flat Division [Edward T Harper].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2,586	1,150
Quartz miners	1,114	
	3700	1,150

Of the above 2,306 alluvial miners, and 350 quartz miners are idle

The machinery is as follows:

Alluvial mining:

Horse puddling machines, 148 at work, 173 idle

Quartz mining:

Steam engines pumping, and crushing, etc, 16 at work, 7 idle

Horse whims, 2 at work, 5 idle

There is a great diminution in the mining population in my district this month in consequence of the absence of water for mining purposes. From actual observation, I find that three-fifths of the alluvial miners have ceased working altogether, hundreds of whom are literally out of employment; other are going, and have gone to other diggings; but the majority of them will return, have left there interests here, and resume working at the first sign of a supply of water. The table shows a decrease in working this month of one hundred puddling mills. The horses, etc, have been necessarily disposed of at a sacrifice to supply funds for the maintenance of the miners, which when they can return to work will put them to a great deal of inconvenience to procure against such another equipment; evils which would be obviated could we, during winter, on some of our elevated watersheds, store sufficient water to supply us for two months, when necessary during summer.

1 Cusack, 1973, p150

2 Perry, 1975 pp214-227

3 Cusack, 1973, p129

4 Cusack, 1973, p119

Quartz mining is pretty brisk in comparison with alluvial mining. The reefers are not troubled with the scarcity of water, but with the over abundant supply, and yet I do not believe that were the whole of our mines perfectly drained with efficient machinery, the supply would be at all adequate to the requirements for mining purposes only, even were it possible to collect the whole; and yet the quantity is so great as to inflict a loss to this district of not less than £15,000 per week. Sarnia Reef - The Sarnia Reef Company have not yet disposed of a sufficient number of shares to warrant them in commencing operations in mining ... Guss and Company, from their claim within the company's ground are continuing to take out very rich stone. Specimen Hill, Tinpot Reef - This company have completed all their dams, and are now busily erecting a very fine 35-hp steam engine; also, an inclined tramway for the conveyance of quartz from the claim to the engine. The claims to the N. and S. are also getting good stone, and the whole of the line is looking very well. Bird's Reef, Kangaroo Gully - Mr Le Capelain, who represents a private company holding about 550yds along the line, is displaying great energy. He has completed the erection of one of the two fine engines the company have got upon the ground, and is about to commence the other; meantime he is crushing a large stack of quartz from the upper reef, above water level, until the other engine is completed, when he will be enabled to sink deeper. The majority of the claims on the line are doing well. Glasgow Reef, Golden Gully - The claims on the northern end of the line are briskly working, and some are doing well. Ness and Company's claim yielded at the last crushing 6oz. to the ton ... Fagg and Company have left off working the quartz, which was increasing in richness, in consequence of the water. They are now sinking a water shaft and erecting a whim ... The pumping engine is near to completion. The Golden Gully Company is still lifting good stone; but have no water with which to crush. The Glasgow Reef United Company intends to commence their operations in raising quartz, etc, on Monday, the 20th of February. Sheepshead Reef - This line is very quiet as yet; none of the ground that was leased has been yet worked. The Union Company's claim is still being worked, and yielding a handsome dividend. Mr. Curnow's claim, on Iron Reef (a continuation of Sheepshead), is yielding a fair payable stone. The Specimen Hill Reef to the west of this is looking brisk. This is supposed to be a continuation of the line of Victoria Reef. Whip Reef, Kangaroo Hill - Two or three claims are busily working, but no stone has been raised at present. Mr Shiress, the chemist, of Sandhurst, is analysing and making experiments upon the conglomerate found within Noble and Company's claim, and gives satisfactory accounts thereof. He is making use of the furnaces built by Mr Carpenter for that purpose within the claim. This line is being extended to the southward, along which several shafts are being sunk. Hibernian Reef - This line is being well worked, but there are no great results as yet. This reef runs through the waterworks ground, upon which a pumping engine and crushing engine has been erected. It is more than possible that a revenue will be obtained by the Waterworks Company, by the drainage of this and Whip Reef, the water from which will always be the objective of the company. Stafford Reef, Diamond Hill, and Stafford Gully - The German's claim on this line is still being worked, and yielding very remunerative stone. They have struck the main reef, which they found by following the underlay to a depth of 100ft. The second claim to the N. of this is being rapidly sunk to the main reef ... other claims are going down in various directions. Alexander Reef, Lockwood - The claim south of the prospecting shaft, at a depth of 125ft, struck a solid mass of quartz. Axe Creek Reef - There is a large body of stone on this line cropping out at the surface. The prospecting claim, and the two to the south of it, is crushing stone which yields from 2 to 5oz. per ton. The machine was incomplete, and the quartz was kept back until repairs were done.¹

Jan 1860:

Eaglehawk Division (G.W.Hart).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	4,305	137
Quartz miners	408	
	4,713	137

The machinery is as follows:

Alluvial mining:

Horse puddling machines, 11 at work, 185 idle
Whims, 6

Quartz mining:

Crushing mills, 23 engines at work

No improvement in alluvial mining is expected for as long as the dry weather lasts ... even the owners of crushing machines are suffering from want of water. Huntly and Epsom are the only places in my division where there is activity in alluvial mining. The Huntly Lead still bears northward, while the ground is getting deeper, none of the holes are less than 100ft deep. The head of the rush is now about a mile beyond the limits of the surveyed lands of that parish. It is impossible for the miners to ascertain the yield, as they have no means of washing the auriferous earth, but they are storing the stuff in anticipation of rain. In addition to the Steam Crushing and Pumping Company, already formed at Huntly, another company is about to be started in the same locality for a similar purpose, that of draining the wet bottom so general here. Blocks, numbered 160,161, 162 and 428, are those applied for by the Eaglehawk United Steam Puddling Company. Their reservoirs and drains are constructed, and their buildings are nearly complete, but they have not yet erected their machinery. I am informed that they intend to employ the old puddling mill worked by steam, as being more suitable to the nature of the soil, mostly soft red clay, in preference to the horizontally revolving cylinder, which is more adapted to washing stuff of the gravelly nature. Blocks 173, 174, 117, and 426, are those applied for by the Eaglehawk Steam Puddling Company. They have also constructed their reservoirs, and are erecting their machinery, but both companies advance slowly for want of water. Blocks 105 and 133 are those applied for by the Jackass Reef Steam Crushing, Pumping and Puddling Company. They have not yet commenced operations.¹

Feb 1860: No 1, or Kangaroo Flat Division. [Edward T Harper].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1,520	773
Quartz miners	928	
	2,448	773

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping, puddling, etc - 6-175hp, 4 at work, 2 idle
Horse puddling machines, 221 at work, 100 idle
Whims, 5 at work, 4 idle
Whips, 3 at work, 2 idle.

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 22-330hp, 8 at work, 14 idle.

Owing to scarcity of water, the division has remained in a dormant state. Quartz mining is becoming more and more developed, and the operations are more systematic. Now that the miners see daily substantial results, the fruits of perseverance and enterprise combined with system hitherto unknown amongst us, and new reefs being opened daily with brilliant prospects as shown by the specimens exhibited, claims are becoming more and more valuable, and it would be difficult to find out an unoccupied spot on any well-known line of reef. Alluvial mining - This is rather dull, in consequence of no water. Upwards of 1000 puddlers, etc, and a few quartz reefers have gone to the Inglewood rush, which is distant only 25 miles from Bendigo by the bush. Many of our steam gold washing companies are now ready for operations, and only wait for the first fall of rain to make a start. Some of these intend using the common puddling mill, on an improved principle, instead of Hart's patent, and others intend erecting powerful engines and passing all the stuff under a number of stamps (similar to a quartz mill) of light weight, to crush stones, clay, and everything likely to contain gold. This last method, in my opinion, will prove to be the best and most economical, being more compact and requiring less water. Newchum - This line is brisker. The Newchum Company are completing their pumping and crushing machinery; meantime many of the claims have started work, anxiously waiting for the pumping to start. Paddy's Gully - The working on this line was discontinued, in consequence of having been entirely taken up by the Paddy's Gully Company, which unfortunately lapsed for want of a little support ... however, the three upper claims: Hope Company, Albion Company, and Caledonian Company, came to an understanding, and they are now erecting a pumping engine which is almost completed. Bird's Reef, Kangaroo Gully - There is a private company of three amalgamated claims - 150 yds - about to be formed on this line; £3000 are to be given for the ground, to be raised by 30 shares of £100 each, and 30 shares at £100 are to be offered to the public, for the purchase of machinery, etc ...

Mr Wright, who is crushing his own stone, is doing very well, averaging 1 oz. per ton. Messrs Capelain and Company, further up the gully, have commenced crushing with one of their beautiful 25hp engines ... they are crushing about 45 tons in 24 hours. Axe Creek - Good stone is still being raised, and in one or two claims yields about 3 or 4 oz. per ton. Stafford Reef - Another claim on this line has struck the reef, which yields 5oz. to the ton. This is the second claim S. of the Germans.]. Glasgow Reef - This line is becoming brisker, as the pumping engine approaches completion. Several new claims have struck gold in the stone above water. Lane's prospecting claim yield 1oz per ton. Fagg and Company, 10 ton for 90ozs. Ness and Company, 5 ton for 35oz. Other claims have good stone.¹

Feb 1860: No 2 or Bendigo Flat Division [William Jahn].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1850	470
Quartz miners	900	
	2840	470

The machinery is as follows:

Alluvial mining:

Steam-engines - 1 at work

Horse puddling machines, 146 at work, 292 idle

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 20 at work, 5 idle

Horse whims, 15 at work, 15 idle.

Approx value of all plant in the Division is £90,000. Puddling operations have been nearly at a standstill on account of scarcity of water. Only a few machines are working in the smaller gullies, which have no underground drainage. The greatest number of machines are working on the lower Bendigo Flat. Alluvial companies - The works of the Bendigo Flat, Bendigo Valley and the White Hills steam puddling companies are progressing rapidly and I shall soon be able to report their having commenced work. Quartz Reefs - The success the greater part of the miners in this district have met with, has given more encouragement to prospecting companies. On the northern part of the Ironbark Company's ground (North Victoria Reef), payable stone has been found on the surface. Ballerstadt and Son re-commenced working in their claim on the Victoria Reef, which had been lying unworked on account of insufficient drainage, and have struck some rich stone again. Derwent Gully Reef - work going steadily. The yield is on average one ounce and a half to the ton. Cape Clear Reef, Long Gully - some very rich stone discovered some time ago in Messrs Robert's claim. Victoria Reef - the pumping engines on the Victoria Reef are constantly at work, and already begin to be effective. Redan Reef - Mr. Cooper has erected a powerful engine for crushing and pumping. Mr Cooper intends to drive across at every 60 feet to those lines of reef running parallel with the Redan, as Hussler's and Maiden Reefs. Long Gully Reef - The Back Creek and Long Gully Companies have erected their engine on Long Gully Reef, and are draining the reef. Maiden Reef - The Ironbark Company are sinking a water shaft on Maiden Reef, in consequence of having struck rich stone below the water level.²

Feb 1860: Eaglehawk Division [G W Hart].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	4,297	87
Quartz miners	351	
	4,648	87

The machinery is as follows:

Horse puddling machines, 9 at work, 196 idle

Crushing machines, 26 at work

Whims, 6 at work

¹ Mining Surveyors' Reports, Feb 1860

² Mining Surveyors' Reports, Feb 1860

Alluvial mining remains much in the same state as it has done for the last three months, and still as Before Huntly and Epsom are the only places where any work is being done. The head of the line at Huntly is still progressing to the northward. The Crushing and Pumping Companies are advancing with their works. Among which I may mention the Prince of Wales Company, they have just put up a 25hp engine with 24 stamps; at present they are raising between 3 and 400 tons of stone per week, and employ 20 men; they are now waiting for water, but when in full work they will give employment to about 60. The Catherine Reef Claimholders Pumping Company have also made considerable advancement having just finished their chimney, and will soon be ready to pump the water from the reef more effectually than they are now doing by means of a whim. The Bagshot Steam Crushing Company is making great advances towards the completion of their well appointed works. The ground belonging to the company is purchased land, situate at about 10 miles from Sandhurst ... They have 2 shafts, one the engine and drawing shaft, the depth of which is 103ft; from whence it has been sunk 30ft in the slate and a drive prosecuted W. for 150ft, thus forming the main level for drawing the cement to the engine shaft. The other or westerly shaft, is very useful in creating a current of air through the works below, and is 107ft deep. Water was struck at 94ft from the surface, which is kept under by a 14hp engine, to which is also applied the winding gear required for raising the cement etc. These shafts are finished in a very superior manner being boxed throughout and divided into two compartments by a partition from top to bottom. The cement is now being excavated in both a N. and W. direction, averaging about 2ft in thickness. A battery of 12 stamps to be driven by a separate engine is also in the course of erection, and a very large reservoir of water pumped up from below has been dammed back opposite the works. From about 20 to 25 men are employed on the works in addition to contractors in the bush cutting timber, firewood, etc. The erection of these works has caused quite a little village to be brought into existence in their vicinity, on a spot that but a few months since was silent bush. The Alluvial Steam Puddling companies are in some cases ready to commence operations, and more will no doubt be ready to begin by the time they have water in their dams.¹

March 1860:

Eaglehawk Division [G W Hart].

The population is as follows:

Alluvial miners	3,824
Quartz miners	342
	4,166

The machinery is as follows:

Puddling mills: 146 at work, 73 idle

Quartz mining:

Crushing mills;	28 at work
Whims	6 at work
Steam puddling mills	2 at work

A great alteration for the better has taken place within the last fortnight, in consequence of the rain. About two-thirds of the puddling mills are again at work, and something of the old activity is manifest in the principal gully; but in the more outlying gullies the same dullness is apparent, as most of the mills are still idle. I attribute this to the long dry season having exhausted the means of the owners of the mills, who have left their homes and gone, at least for the present, elsewhere in search of work. Very little is being done by the tub and cradle men, and it appears to me that our gullies are for ever deserted by them. Of the few that were working in places where a little water could be found have also left, and gone to find other ground. The Huntly Goldfield is the only one that appears in a vigorous condition; the lead there is still going north ... The sinking varies from 90 to 100ft. Some of the owners of crushing machines at Huntly and Epsom purpose erecting new ones about the head of the lead, where several sites for dams and machinery have been surveyed, I regret to say that the alluvial workings at the Elysian Flat hold out very poor prospects at Present. Most of the inhabitants have left the place, and it is almost deserted. Perhaps, now that the Autumn rains have commenced, better success will attend those still working there. Water has been very scarce in that district, as the country is flat. The greater part of the quartz claims is also left unworked.²

1 Mining Surveyors' Reports, Feb 1860

2 Mining Surveyors' Reports , March 1860

Gullies and Nuggets - Whipstick

Nov 1860 Poverty Gully Nuggets of 22, 80 and 95ozs found - creates small rush.¹

April 1860: No 1, or Kangaroo Flat Division [Edward T Harper].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2618	481
Quartz miners	826	
	3,444	481

The machinery is as follows:

Alluvial mining:

Puddling mills at work, 559; puddling mills idle

Whims 4, at work: 173

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 33

Whims 26

The increase in my returns of mining population, puddling mills, and steam machinery, is owing to the extension of my district. Of the 37 steam engines in my returns, 25 are at work this month, the aggregate power is about 500hp, and 12 are idle (310hp), employing directly 100 men and indirectly 47 in carting quartz and tailings. There are 2 more engines in course of erection, and several others in course of erection, by private quartz companies composed of 3 or 4 good paying claims being amalgamated, which system is becoming popular on Bendigo, and is the only true method of success. Mining in all its branches is looking better this month. The puddlers have a good supply of water, and consequently, are enabled to work in the best ground, some of which has never been got at before. Very few mills are being erected, but those we have at work employ nearly double the number as formerly, owing to the late increase in puddling claims awarded by the late Mining Board. There have been several new and distinct bodies of quartz discovered in and around Bendigo this month. One body of quartz was struck in a drive about 40ft below the surface, in an old claim on the Wilson Reef, parallel and adjoining the Cooper's Maiden Claim, Redan Hill, which yielded 215oz. of gold to 2 ton of quartz. Another was found on Johnston's Reef, which gave an even greater return, and two in the Break o' Day, Lockwood ... This is not far from Brown's Reef but in a different line. The old workings are much as usual, some at work others under protection. The Specimen Hill Tin Pot Company have commenced crushing with one of Tennant's horizontal high pressure engines of 30hp, with good boilerage of 22ft 6in with a 12ft fly wheel, 18 stamps of 3 1/2cwt each in frames of 6 each, and is expected to crush 250 tons per week. The company has 1200 tons ready for the engine and has put on extra miners to insure a constant supply. It is expected that the whole of the quartz stacked will average almost 1oz. per ton. Bird's Reef, Kangaroo Gully - Four claims have amalgamated on this line and formed themselves into a private company with capital of £3000 ... They are in treaty for an engine, and have stone enough to last them for 2 or 3 years. Le Capelain's Company to the south has crushed some very good stone, but has not been able to work regularly due to unforeseen problems with machinery. Mr Wright's claim to the north of the Bird's Reef Company has been constantly at work for the last two years. He has a beautiful little 4hp engine kept constantly at work crushing top stone. The yield is under 1oz. per ton generally ... The top reefs to the south of Bendigo Flat are generally very patchy, but often exceedingly rich, and I am of the opinion that the reefs lying deeper or underneath the top stone and below water level will be more regular and not so patchy. Glasgow Reef - The pumping engine is nearly completed, and the claims to the N. and S. of it are briskly engaged in sinking their main shafts for the extraction of quartz, which at a depth of 130 feet was found very rich. The water level here is about 110 feet. Fagg and Company has been constantly taking stone from a depth of 75 feet, which averaged 5oz. per ton. Ness and Co. to the east, have crushed 14 tons, averaging 3 1/2oz. The Golden Gully Company have been constantly at work, stone yielding about 1oz. per ton. The United Glasgow Reef Company is making preparations for a start. The Diamond Hill Company are again at work ... This and Schilling's Claim to the north, keep their crushing machine constantly at work. Sarnia Reef - The German amalgamated claims are doing well. Skene and Company to the north intends to sink about 170ft. Sheep's Head Reef - The Union Company on this line have a very extensive claim, and employ a number of men ... They crush their own stone as well as for the public. They have made extensive excavations, and extracted thousands of tons of stone, averaging generally 1oz. Several of the other claims have got stone, but with the exception of Blewit's claim none of them are having it crushed.

¹ Perry, 1975, pp166-176

Paddy's Gully Reef: the entire line has been stopped by the increase in water in claims, consequently the Hope, Albion, and Caledonian Companies have purchased, and erected for about £1500 and excellent 8 hp engine, with pump complete. It is now at work ... in the shaft of the Caledonian Company. New Chum Reef - The New Chums Company's engine is almost complete ... they are sinking a new pump shaft ... Beagethole is raising stone from his claim to the north of the company's ground. He is crushing his own quartz and doing well. All other lines are more or less getting gold; but reefing is not as we could wish it, nor will it be until a liberal and efficient drainage act is made. They think that the Mining Board by-laws are illegal, and liable at any time to upset. Therefore the miners care not to invest their capital in drainage without protection. The price for crushing quartz remains generally at # per ton. At Epsom cement is crushed for 12s. The Glasgow Reef Pumping and Crushing Company intend reducing the price to 15s per ton; but we shall shortly see it down to 10s. ¹

April 1860:

Eaglehawk Division [G W Hart].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	4060	157
Quartz miners	360	
	4420	157

The machinery is as follows:

Alluvial mining:

Steam-puddling mills, 2

Horse puddling mills at work, 140, idle 69

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 34

Whims, 8

Horse crushing mill, 1

No increase in the number of working puddling mills has taken place. The owners of those now idle have in most cases abandoned the district. Some of them have been dismantled and the woodwork taken away. The tub and cradle system is nearly extinct. New crushing mills were erected about Huntly by persons owning similar machines in the old gullies. The returns from the reefs are likely to increase, as pumping engines come into operation, and on reefs where they are at work, the draining of claims has been so beneficial that contributing to a fund for the erection of pumping machinery will become general. ²

May 1860:

The Bendigo Waterworks Co which to a large extent, initiated the boom, found itself in difficulties when the earth excavations failed to yield gold. Emmett was castigated by shareholders ... and on the 22 May 1860, work on the main reservoir was suspended and eventually discontinued. The company planned seven subsidiary reservoirs along the watershed of the Bendigo Valley with gross storage of 22,118,000. Only the one at Big Hill commenced. Work on it continued and by June 1861 water from it was flowing into Sandhurst in sufficient quantity for household needs.

March 1860:

No 1., or Kangaroo Flat Division [E J Harper].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1,544	551
Quartz miners	463	
	2,007	551

The machinery is as follows:

Alluvial mining:

Steam-engines, 7

Horse puddling mills at work, 598, idle 135

Whims, 34

Whips, 9

Quartz mining:

Steam engines crushing, pumping, bailing, etc, 29

Whims, 8

¹ Mining Surveyors' Reports, April 1860

² Mining Surveyors' Reports, April 1860

Mining matters are much brighter; there is a great increase in the number of horse puddling machines in operation water is very plentiful, and few dams are without ample supply. There are very few new mills being erected, owing to a deal of the good ground having been shut up by leases, but many of these are now being withdrawn, which will give facility to those who choose to take advantage of it for puddling purposes. A few public companies have gone to work with very satisfactory results. The Back Creek Company have a splendid 30hp horizontal engine, with an ample boiler; two patent revolving cylinders, with a patent cylindrical amalgamator, attached to which is a long ripple sluice, emptying into a box, partially filled with mercury, which is kept agitated, and which is the last process, thereby saving every particle of gold. Several trials were made from various parts of their ground (about forty acres), and the results were such to give them every hope. The Bendigo Puddling Association has at last made a start; the results of their washing are not yet known, but the ground is known to be rich. The North British Company also commenced; they are washing on the principle of the old horse puddling machine, which is better adapted for breaking up the clay, thereby saving gold which would otherwise be lost. The Bendigo Valley have not yet commenced, but are in active preparations ... I am told by those who have wrought on the spot that there are two bottoms, or two deposits of gold in the alluvium; the first one is at a depth of 8ft, was not discovered in the early times, but was turned over along with the mass of headings, and became lost, in a remunerative sense, to the tub and cradle men; the second bottom was found to be very rich, especially near the old creek, but too wet to work it effectually; the company have a splendid dam cut down to the sandstone bed, which will effectually drain the ground and yield them a constant supply of water. The Water Works Company have ceased to wash at Golden Square, as has the Kangaroo Flat Company, Grove, etc. Quartz - The old leads are steadily progressing, and some other new claims on the various lines of reef becoming remunerative and turning out quartz more or less auriferous. Stafford Reef - Two claims on this line have got gold - one to the north and opposite Diamond Hill have struck a fine body of quartz which will yield, it is expected, about 5oz. per ton. The claim to the S of this has also got very payable quartz. The German's claim, Herne and Co., are still getting payable stone; they sunk a new shaft on the same body of quartz from which they are now crushing about 15dwt. per ton. Silverlock and Company's claim farther to the south has got the reef. Glasgow Reef - This line still looks very dull, very few claims in proportion to the many are working, and these are sinking to the water level, near the supposed main line, to be in readiness for the pumping engine. Fagg and Company is still getting good payable stone. Ness and Company have creased working at Present. Western Reef - The Golden Gully Company are getting some good stone from the Western Reef, they are crushing for the public, and have reduced the price to 16s. per ton. The Diamond Hill Company are getting very good stone just below the water level; they purchased Schilling's claim to the north, which joins their workings, which gives them 270 yds of reef with a beautiful 8hp engine, in good order, and kept in constant work. Sheepshead Reef - This line is looking up. The Union Company's Northern Claim is now yielding some excellent stone ... Hooper and Co's claim to the N, has found the same run of gold ... Thompson and Co's to the N are getting some good stone ... Three leases intervene betwixt this and Bendigo Flat Paddy's Gully Reef - This line is improving, principally to the south, and Watson's claim is yielding 1 1/2oz to the ton. Smith and Co., are getting up stone, but of rather inferior quality; they need to go deeper, and are anxiously waiting for the pumping company to cut the reef in their claim, when there is little doubt but that the whole line will be effectually drained, meantime most of the claims are remaining idle. Specimen Hill, Tin Pot Reef - The company has commenced to crush ... The German Amalgamated Claim, to the north, are constantly taking out stone which averages 1oz. per ton, and other claims to the N are working with similar results. The Blue Lead is with few exceptions lying dormant. This has been a good lead and very rich stone has been taken therefrom. Thistle Reef - Little being done on this line at present. A few claims are sinking to water level. Birds Reef - The entire length of the line, as at present known, with the exception of two claims which are taken up by two companies, one composed of a few Melbourne gentlemen, under the management of Le Capelain; the claim consisting of about 600yds along the reef in three leases. The company have two engines, one for crushing which is erected and at work, having four batteries of stamps of four to each frame, capable of crushing 30 tons per diem ... The other engine is for pumping ... The two machines will stand together in one house, which is a large substantial stone building with strong corrugated iron roof, with a span of 45ft and very lofty. The other company has 4 claims, in all 200 yards of the best part of the reef. and preparations are being made for the erection of the machinery; meantime nothing is being done in the mines. Specimen Hill, Long Gully, Newchum, Victoria, Sparrow Hawk, Garden Gully, Hustlers, Windmill Hill, and the Perseverance Reefs fall into my division, the working of which I am not very conversant with, but hope to report upon them in my next.¹

1860: Whipstick - In 1860 gold was found at Elizabeth Gully, a tributary of Bendigo Creek heading from Brandy Creek and about six miles from Elysian Flat. Other places were also discovered in the Whipstick in 1860.¹

May 1860: Eaglehawk Division [G W Hart].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3250	300
Quartz miners	480	
	3730	300

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping and puddling, 5-70hp

Horse puddling mills at work, 210

Whims, 8

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 29 - 318hp

The Chinese population has much increased in my division, and they may be seen working in many places with great activity; indeed they are now nearly the only persons employing the tub and cradle, the greater part of the miners of that class having removed to other locations. In quartz mining there is about the usual activity.

List of Steam machinery:

Names	Locality	hp	No of stamps	Remarks
John Taylor	Epsom	8		Crushing cement & tailings
Kneebone and Enwood	Epsom	8		ditto
Nicholl and Company	Epsom	20		ditto
Ironstone and Huntly Co.	Huntly	80		Now erecting crushing & pumping
United Company	Huntly	15		16 Crushing cement & tailings
McEwan and Company	Huntly	10		14 ditto
Southey and Ellis	White Hills	15	8	ditto
Ryan and Company	White Hills	10	12	ditto
Mitchell and Company	Back Creek, Huntly	18	16	ditto
Thomas Brett	Back Creek, Huntly	25	20	
Gowan, Lucas and Co.	Back Creek, Huntly	10	8	
Feran, Kingsland & Co.	Back Creek, Huntly	15	12	Erecting
Bassett and Hunkin	Back Creek, Huntly	15	16	Erecting
Tucker and Company	Eaglehawk Creek	6	6	At work
Kneebone and Thomas	Eaglehawk Creek	6	8	At work
Davis and Webb	Eaglehawk Creek	8-1/2		8 At work
Ewan Williams	Ironstone Hill	10	10	At work
Knox and Company	Butchers' Hill	12	12	At work
Broadbent and Company	Butchers' Hill	5	6	At work
Davis and Company	Ironstone Hill	8	8	At work
Acott only	Ironstone Hill	4	5	Crushing for himself
Goodwin and Murphy (machine)	Eaglehawk Gully	8	8	(late Whisker's
Eaglehawk United Co.	Eaglehawk Gully	16		Puddling, now erecting
Eaglehawk Company cylinders	Eaglehawk Gully	12		Puddling, at work by
I. & J. Crowley Harrows	Eaglehawk Gully	4		Puddling, at work by
McNair and Company	Sailors' Gully	10	12	Crushing quartz
McNair and Company	Sailors' Gully	12	12	Crushing quartz
Specimen Hill Company	Specimen Hill	25		Pumping and winding
Bassett and Company	Sailors' Gully	11.3/4-12		Crushing quartz
Clarence Reef Company	Sailors' Gully	8	8	Crushing quartz
Franklyn Pumping Company	Star Reef	4		Pumping only
Mitchell and Company	Sailors' Gully	6	8	Crushing
Claimholders' Company	Peg-Leg	30	18	Crushing, pumping,
Ditto	Peg-Leg	35		Crushing, pumping,

¹ Flett, 1979, p248

Peg-Leg Company	Pennyweight Reef	15 12	Crushing
Prince of Wales Company	Pennyweight Reef	15 12	Crushing
Brown and Company	Dead-Horse Gully	8 8	Crushing
Mungo Reef Company	Mungo Reef	12	Pumping, erecting
North Bendigo Company	Jackass Reef	25 12	Pumping and crushing
Evans and company	Wallace Reef	8 8	Crushing
McPhail	Elysian Flat	10 12	Crushing
Bagshot Mining Company	Bagshot	14	Pumping
Bagshot Mining Company	Bagshot-	12	Crushing for Co cement
Myers' Flat Freehold M C	Campbell's Paddock, Myers' Flat	30 24	Crushing for Co cement pumping

Campbell's Paddock contains 240 acres, purchased by the company, and is a continuation of the leads of auriferous drift in Myers' Flat. The washing-stuff is raised from a shaft, about one-third of a mile from the engine, by horse whim and skips, with a tramway to the engine, and delivering into bins for feeding the stamps. A plentiful supply of water is contained in two large reservoirs formed in the bed of the creek. This company commenced to work about a month since, but it is not yet known with what success.¹

June 1860:

Eaglehawk Division

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3600	450
Quartz miners	660	
	4260	450

The machinery is as follows:

Alluvial mining:

Steam-engines employed in winding, pumping and puddling, 7-112hp
Horse puddling mills, 297
Whims, 14

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 38 - 499hp.

Additional machinery:

Owners	localityhp	stamps	remarks
Herschel and Company	American Reef	16 12	Crushing
Newhouse and Company	Wetherall Reef	18 12	Pumping and crushing
Quartz Mining Company	Johnston's Reef	10 10	Winding and crushing
Emu Company	Johnston's Reef	16	Pumping
Gold Mining Company	Johnston's Reef	46 16	Crushing and winding
Shellback Company	Shellback Reef	10 12	Crushing
Bendigo Valley Co.	Bendigo Flat	30	Puddling (erecting)
Guy and Knuckey	Bendigo Flat	8 12	Crushing
British Company	Bendigo Flat	12	Puddling (erecting)
Lewis and Company	Bendigo Flat	8 12	Crushing
Third White Hill Co.	Third White Hill	50 36	Crushing

Alluvial: as much of the alluvial ground that had been locked up, by being under application for lease, has now been thrown open to individual miner in consequence of the applications having been withdrawn, several new puddling mills have been put up, and others that had been for a long time idle have recommenced working ... The number of Chinese tub and cradle men is certainly on the increase: they may be seen in every direction, not only sinking holes in the old gullies, where it is said that none but themselves can make a living, but they are to be found on the reefs also, paring off the surface of the soil and washing it in the nearest pool: the only complaint against them is that, in this way, they spoil a great quantity of water, as they never remain long in one place. Some of the pumping engines lately erected are now at work, and doing good service in draining the reefs. Among those now pumping are the North Bendigo's engine, on Jackass Reef (in a few days the lately and long-flooded workings will be free of water) and the Specimen Hill Company's (McNair and Co.) engine, which is constantly drawing up a large body of water. The pumping engine of the Claimholder's Company on the Catherine, which is expected to drain the whole of the important reef, has not yet commenced: this company is still at work with their whim.

The Huntly and Epsom Crushing and Pumping Company have not yet got their powerful machinery into working order: this is the largest engine in the district. Application has been made ... for a prospecting claim on a reef said to be lately discovered on Jeffrey's station, on the Echuca Road, about thirty miles from Sandhurst. I understand that other claims have been taken up on this reef. The Elysian Flat district is now nearly abandoned, although my impression is that both payable reefs and good alluvial ground will yet be found in that neighbourhood. Within the last week auriferous quartz has, in two instances, been picked up on the surface at a short distance from the township of Neilsborough.¹

July 1860:

Eaglehawk Division. [G W Hart].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,500	500
Quartz miners	700	
	4,200	500

The machinery is as follows:

Alluvial mining:

Steam-engines employed in winding, pumping and puddling, 7-112hp

Horse puddling mills at work, 227 at work, 124 idle

Whims, 12

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 38 - 531hp

Additional machinery:

Owners	locality	hp stamps	remarks
Nelson Reef Co.	Nelson Reef	40 24	Pumping and crushing
Goodwin and Murphy	Eaglehawk	32 16	Crushing (removed to Inglewood) ²

August 1860:

No 1., or Kangaroo Flat Division (Edward T Harper).

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2,592	486
Quartz miners	1,136	
	3,728	486

The machinery is as follows:

Alluvial mining:

Steam-engines employed in winding, pumping and puddling, 8-204hp

Horse puddling mills at work, 648 at work, 108 idle

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 65 - 1165hp

Whims, 33 at work, 23 idle

Whips 8 at work, 6 idle

Alluvial mining - Much improvement ... owing greatly to the superabundance of water which has been steadily falling (with the exception of one flood) throughout the whole month. Very few of the steam puddling companies have commenced operations as yet. The Bendigo Valley, North British, Kangaroo Flat, and the Enterprise Companies are among the number, the last mentioned of whom, it is expected, will shortly make a start with one of Thompson's patent conical cylinders ... The Back Creek plant was offered for auction, and bought in by the company at £850. The waterworks alluvial washing ground is still lying idle, shutting up a valuable piece of ground which could be advantageously worked by the puddlers. Quartz mining - This branch has been rather stagnant for the last 3 or 4 months back, owing to the numerous workings on the various well-known lines of reefs having been put back or stopped altogether, owing to many of the best yielding claims having been purchased by or thrown into the many public companies which have been formed on Bendigo, many of which have not yet got to work, and some others not completed their water shaft, until which shall have been completed, and the reefs drained, no great depth can be obtained; but I am happy to say that many are in an advanced state, and many claims have already been enabled to sink considerably below the water level, which has long been waited for with the greatest excitement in this district.

¹ Mining Surveyors' Reports, June 1860

² Mining Surveyors' Reports, July 1860

Hustlers Reef - Latham and Watson's claim, in the gully (Ironbark) have discovered some excellent stone. The Hustler's Reef Company will be completed and ready to start work in a week, with their pumping engine, at a depth of 230 feet. Redan Reef - The southern claims on this line are quite at a standstill. Cooper's Comet Company, on the summit of the hill, are in constant work raising and crushing; they have a large claim in two leases, one on the Redan and the other on the Sophia Reef, and are at the present time employing upwards of 100 men; their yield of gold weekly ranges widely from 150 to 300ozs. Wade and Blair's claims are doing well; their average yield is about 3oz. per ton, at a depth of about 225 feet ... The Ironbark Company's claim is doing pretty well; last week's work yielded 70ozs. this is on the Sophia Reef. Silk and Company, and Johnson and Company, on the Sophia are also doing well. Stanley's Reef - Stanley and Company in their claim are taking up all the stone they passed in the drive ... Palmer and Company, to the north are also getting good stone, as well as Wilkie and Company, to the south. Tyson's Reef - The Tyson's Reef Company have just struck another golden reef. Paddy's Gully Reef - The prospects of this line is looking much brighter. Smith and Company have been crushing stone for 1 1/2oz to the ton ... Watson and Company, to the north, is also getting good stone from the same lead. Tipper and Company, to the south, have tried some of the same stone from the water level, but not so good ... The pumping engine is not as yet doing much good in the way of draining; the engine shaft is sunk to the required depth it is supposed, and is now being driven to the east in which direction it is expected the reef will be struck, when the south claims will be enabled to sink 100 feet at least below water level; the Union and Hope Companies will then have an opportunity of searching for the second reef. Garden Gully Reef - This line, with exception of 3 claims is idle. Perseverance Reef, Long Gully - Three claims on this line are raising stone for crushing; Kershaw and Company are working down a western spur ... New Chum Reef - The New Chum Company ... [presently employing 40men] ... have finally commenced pumping and crushing; they have evidently drained the whole hill, the shaft on the summit (Phoenix Company) being 220 feet deep, and many of the claims have now got to work. Victoria Reef - On the South Victoria Hudson is working a small irregular body of stone ... The Phoenix Company, to the south, have at last got onto the same body ... Mr Burrows, to the north of Hudson, is working the Black Lead ... Wybrant, the next claim in the gully, is working the top stone, which pays tolerably well. The Medway, on the North Victoria, have driven to the west and found the Old Victoria Reef ... Wittscheibe, in the next claim, have struck the reef, but not the same run of gold. The Victoria Mines Company, in their 220ft level, has struck 3 or 4 small bodies of quartz.¹

August 1860:

Eaglehawk Division
 The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,500	550
Quartz miners	900	
	4,400	550

The machinery is as follows:
 Alluvial mining:
 Steam engines employed in puddling, 5-74hp
 Steam-engines employed in winding, pumping and puddling, 5-92hp
 Horse puddling mills at work, 233 at work, 122 idle - 355
 Whims, 14
 Quartz mining:
 Steam engines employed in winding, pumping, and crushing, etc, 41 - 641hp

In consequence of the greater portion of the alluvial ground now being rendered free, many tub and cradle miners have returned to their former pursuit, and I have observed several places now occupied that had been for a long time deserted; this may, however, be attributed to the abundance of water. The puddling is also rather on the increase than otherwise, especially in some of the small gullies opened within the last year in the vicinity of the Whipstick Road, where several small nuggets and payable ground have been found. A rather vigorous rush has lately taken place at Huntly, on a part of the flat lying about half a mile east of the Back Creek, and at six miles from Sandhurst. I am of opinion that this ground will ultimately be found to be a branch of the great Huntly Lead. It is shallow sinking...and produces from 14 to 17 dwt. to the load. It makes good wages for the Huntly miners, and is found just when it is wanted, as many of them, I regret to say, have suffered severely from the late inundations - by that unfortunate occurrence about five hundred men have been deprived of work.

¹ Mining Surveyors' Reports, August 1860

All the claims in the vicinity of the Miners' Arms Hotel are completely flooded, most probably never to be recovered, unless the powerful pumping engine adjacent to them, and now nearly ready, is able to drain them. Some of the ground has fallen in from the surface, and the entire flat in that neighbourhood is deeply covered with silt, brought down by the flood, all which gives the place a most deplorable appearance. This accident was to be anticipated as for a long time past the creek having been filled up with silt and dry sludge, the water had full play on the adjacent flat, and no channel exists capable of carrying off the storm water which rushes down here with great impetuosity. Should such another flood occur, the damage that would be done at Huntly would be very great, as all the ground in the lead is excavated, and being now much weakened by its last saturation, it is not improbable that a sinking of a large area would be the consequence. The Miners' Arms Hotel and many stores are built upon this dangerous ground. The Eaglehawk United Steam Puddling Company has at length commenced operations. Their machinery consists, for the present, of one revolving cylinder, and one mill on the principle of the old horse mill; the latter appears to me to be the more effective of the two, as most of the gold produced by the first day's puddling, both machines being at work and supplied from the same place, came from the mill. I believe that it is the intention of the company, should the experiment succeed, to erect several others. But the most novel feature of this mining plant is, the means employed to raise the washing stuff to the level of the platform (about 12 feet). Hitherto the usual method has been to draw the laden trucks up an inclined plane by steam power; but in this case they are run on to a lift, and raised to the required height by a hydraulic ram; they afterwards run down an inclined plane by their own weight; in this way a great economy of steam power is effected. This company's establishment appears to me the best devised and most effective of any for puddling purposes that I have visited. On the reefs the pumping machines are beginning to take effect on the subterraneous waters, and soon some of the workings will be completely drained. When this is done, I believe that very few of the now unworked claims will remain idle. Water is the only impediment to general exertion on the part of the quartz miner.¹

Sept. 1860:

Kangaroo Flat Division

The population is as follows:

	European	Chinese
Alluvial miners	2,311	442
Quartz miners	1,144	
	3,455	442

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping and puddling, 8-204hp
Horse puddling mills at work, 636 at work, 129 idle - 765

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 66 - 1,175hp
Whips, 10 at work, 7 idle - 17
Whims, 40 at work and 20 idle - 60

Since my last report there has been an over abundance of rain, resulting in floods which have proved very destructive to the alluvial miners, breaking down dams, and flooding the claims of the puddlers... This evil is very much felt by the puddlers on Bendigo Flat in particular ... Quartz mining, Bird's Reef, Kangaroo Gully - This line has again resumed its usual activity; the New Bird's Reef Gold Mining Company have fairly started to work, they have had several crushings, the result of which were quite satisfactory; it is, I believe, the intention of the company to erect pumping gear, to search for the second reef. Sutton's claim, to the south of this company has yielded some very good stone lately; he is taking all before him where it is found remunerative, and having his own engine crushing is only a secondary consideration. Le Capilain and Company, to the south of this claim, are crushing pretty fair stone from the north end of their claim; they have 24 stamps ... Tin Pot, Specimen Hill, Company - This line is almost abandoned in appearance; the company have long since discontinued operations... There has been a new reef opened this month situated at the head of Dead Dog Gully, and at the foot of Diamond Hill to the east, about the line of the Victoria to the north, and the British and Foreign to the south. Glasgow Reef - The water shaft of the Drainage Company has struck the reef to the east at a depth of 145 feet ... Stafford Reef - This line is looking up, several of the claims are crushing very fine stone. The German's Claim or Hince and Company is extracting very rich stone from a very large reef below water level... The Advertiser claim to the north is upon a very nice-looking body of stone...

Best and Company, to the north, have lately struck stone in the same body they have all along been working, which is undoubtedly the best yet discovered on Bendigo ... Carshalton Reef -

This line is improving, at least a dozen claims are in active work; the lead is shallow, and about 17 dwt appears to be about the average yield. Whip Reef - This line has been very little worked lately, the company have taken out a lease for their principal claim ... Sheep's Head Reef - This line is being extended north and south, and many claims are doing well; the Union Company, who hold a large portion of the reef and a splendid 12 horse-power crushing machine of twelve stamps upon the ground, continue to crush all before them... Wills and Company, to the south, are progressing; they also crush as it comes, and sometimes pays very well. Curnow and Company, to the south, have lately erected a small crushing machine which is now at work... the Red, White, and Blue Company to the north of the Union Company are getting quartz yielding 5 oz to the ton. Hooper and Company's claim, to the north, are also realising handsome dividends. Wilson's Reef, Sparrow Hawk - This line will shortly be actively at work; they have a drainage company of 5 claims, worked by horse-whims, their shaft is 190 feet deep... The All Nations claim have the same stone but are not sufficiently deep for the same lead of gold... Specimen Hill Reef, Long Gully - the various claims on this line are more or less busy at work raising stone for crushing, which stone is exposed on the surface in great masses... The Mary Ann, prospecting claim, at a depth of 100 feet struck a spur of quartz 6 inches thick... Axe Creek, Great Western Reef - This line is looking busy; the prospecting claims are getting better than half an ounce per ton... there is some talk of arrangements being made for pumping and crushing machinery... Alexander Reef, Lockwood - The prospecting claim seems the only one in which gold can be found, and there, eventually it fell off very much...¹

Sept. 1860:

Eaglehawk Division -
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,500	300
Quartz miners	900	
	4,400	300

The machinery is as follows:

Alluvial mining:

Steam engines puddling, 5-74
 Steam-engines winding, pumping and puddling, 5-92hp
 Horse puddling mills at work, 239 at work, 123 idle - 362
 Whims, 14

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 41 - 637hp

The most remarkable feature in this division is the great reduction in the number of Chinese during the last month; in one locality alone, where a short time since there were about two hundred, I can now scarcely find one; but it is their general practice to move about in large companies; it may be owing to the wet state of the gullies, as they have been much flooded of late, and the Chinese may have removed to drier ground. The number of puddling mills is rather on the increase than otherwise, as grants for six of them have been issued during the last month... One new crushing machine of 6 horse-power has been lately put up on the Wallace Reef and is now at work, but the one at the Elysian Flat has stopped work, which causes a reduction of 4horse-power in the returns for this month. The 80 horse-power condensing engine at Huntly (40 stamps) is now at work and the company are beginning to bring their powerful pumping apparatus to bear on the flooded claims - it is the only chance there is of recovering them; the pumping has not yet reduced the depth of water. The rush lying to the east of Back Creek is still progressing northward and affords good wages to the miner ... one claim on the Catherine Reef, however, merits particular notice (the claim of Messrs. Keith and Company) from which stone of extraordinary richness has been raised and it is supposed that it will become still more valuable. When the pumping engine that is now at work on this reef has got the water under so that the workings may be deepened, it is expected that most of the claims will make excellent returns.²

1 Mining Surveyors' Reports, September 1860

2 Mining Surveyors' Reports, September 1860

Nov 1860:

Kangaroo Flat Division

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2,827	637
Quartz miners	1,521	
	4,348	637

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping and puddling, 6-160hp

Horse puddling mills at work, 647 at work, 120 idle - 767

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 64 - 1,135hp

Whims, 30 at work and 17 idle - 47

Whips, 10 at work and 4 idle - 14

Alluvial Mining - I am happy to have to state that this month (November) has been a most prosperous one for the alluvial miners, puddlers, &c. of Bendigo. There has been a constant and steady fall of rain all over the district, in just sufficient quantities not to do any injury to the dams, the inspiring effects of which upon this gold field is quite gratifying, as this branch of mining more nearly concerns more or less the entire population in the number of men and animals it employs, the maintenance for which is something enormous, taking at the lowest estimate for each puddling mill, two horses and four men. Taking this season, so far, it has undoubtedly been the best ever yet known on Bendigo. Quartz Mining - This branch does not show itself so visibly to the eye, one might walk over the entire length of one of our richest gold-yielding lines without being a bit the wiser, or even knowing where the principal operations were being carried on; there is very little show on the surface, as everything is carried on underground, excepting the indications of their whereabouts, namely the various pieces of machinery which are kept constantly at work night and day. Quartz mining is gradually becoming more developed, more ground is being taken up every day in the out districts, where I am happy to say some good permanent reefs are being opened out; those at the Axe Creek, both south and north, are turning out some fine quartz averaging from 1/2 an oz to 7 oz per ton ... Birds Reef - The West of England Company are steadily persevering; three of their batteries of four heads each are kept constantly going, and I believe they are doing very well. Birds Reef Company is almost now completed with their pumping machinery, the water level here was so shallow that the company found it absolutely necessary to erect their pumps... Mr Wraight, immediately to the north, with a four horse engine, crushes from his claim about 50 tons per week yielding on the average 1oz per ton. Larma Reef - This line is likely soon to be brought into active work again, there is a company called the Larma Reef Pioneer Company who have taken up by lease a large area of ground, including that very rich claim of Guss and Company, which in several crushings yielded 92 oz per ton consecutively. It is a private company of about 40 £5 shares. Victoria Reef - This line is, with the exception of one or two claims, entirely at work... The Victoria Quartz Mining Company crushed from it 11 tons, yielding 17 oz of gold. The Endeavour Company are still working the White Lead and showing very good returns. The Hercules Company have a body of stone at least 8 feet thick, which yields all through 1 oz per ton; the stone being near the surface and a large mass, and having also their own machinery on the spot, an excellent 16 horse-power, driving 12 heads. The Victoria Gold Mining Company is steadily progressing; their eastern shaft is nearly completed... There is another spur to the very east side of the hill, which was lately struck by the Try Me Well Company. Tyson's Reef - This line has proved itself not inferior to any on Bendigo, so far as it has been worked, and I am sorry to say that this has been confined to three or four claims. The claim of Enghisch and Myers, 61 feet long, has been a remarkable fine one... To the south of this comes the Tyson's Reef Company, composed of 16 original shares... they have a splendid 30 horse-power engine pumping and crushing; the pipes are down 220 feet and the reef is being drained to that depth...¹

November 1860:

Eaglehawk and Huntly Divisions

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,700	400
Quartz miners	1,000	
	4,700	400

The machinery is as follows:

Alluvial mining:

Steam engines puddling, 5-74hp

Steam-engines winding, pumping and puddling, 5-92hp

Horse puddling mills at work, 357 at work, 104 idle - 461

Whims, 15

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 41 - 637hp

A considerable improvement has of late taken place in the alluvial mining, several small gullies lying towards the Whipstick Scrub have been lately opened, and in some of them the miners have been very successful. Some new applications for grants for puddling mills and dams that have been made for this part of the division, attest sufficiently that gold is to be found there; and it appears that gradually the dense wood will vanish before the exertions of the adventurer ... The new lead at Huntly is still giving about its usual return of gold ... In quartz mining, Messrs McNair and Co., of Specimen Hill, Sailors' Gully, are now putting up an extensive addition to their present machinery, and the Anglo Reef Company have nearly completed their new engine.¹

1860:

With gold production declining throughout the colony, the Government spent £30,000 in 1860 on prospecting, subsidising 150 parties involving a thousand or so men. On Bendigo, with the older auriferous areas increasingly denied him with the onset of company mining, the inveterate digger moved northward to The Whipstick - 'the Atlantis of the Goldfields'²

mid 1860s:

The largest Chinese encampment on Bendigo in the mid-sixties was at Epsom (the White Hills Camp), with a population of approximately 1,000. At the once flourishing Ironbark (Emu Point) Camp numbers had dropped to about 500.³

Jan 1861:

No 1., or Kangaroo Flat Division.

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,268	563
Quartz miners	1,438	
	4,706	563

The machinery is as follows:

Alluvial mining:

Steam-engines winding, pumping and puddling, 5-130hp

Horse puddling mills at work, 638 at work, 116 idle

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 62 - 1,115hp

Whims, 22 at work, 24 idle

Whips, 7 at work and 7 idle

There has been a rush this month to the Lower Sheep Wash Creek about 6 miles from Sandhurst ... unfortunately it proved a failure; some 900 people (all miners) went to the spot, nearly the whole of whom returned next day ... the greatest depth of the lead was 6ft. Quartz mining is till very dull ... but I am happy to say that I can perceive a gradual change and steady improvement within the last month, which seems to be general throughout the entire district. Some heavy finds in the quartz have taken place this last week or two, at greater depths than hitherto been attained. Glasgow Reef - There is another crushing machine going up on this line in the claim of Messrs. Hunt, Kater, and Company, to the north.

The Glasgow Reef United Company is now working a good payable body of stone, and two claims to the north are upon the same lode. Stafford Reef - Heine and Company from this line

1 Mining Surveyors' Reports, November 1860

2 Cusack, 1973, p132

3 Cusack, 1973, p121

obtained some very fine stone last week ... Best and Company to the north struck the rich vein again. Sheep's Head Reef - is looking pretty brisk; about 6 claims together are getting stone more or less payable. New Chum Reef - This line, with the exception of Gibbs and Lazarus's claim is quite at a standstill. The New Chum Company is not at work, and thereby the water has risen and flooded all the claims again north and south. Victoria Reef is, perhaps not so briskly at work as I have seen it. Ballerstedt is raising stone from the back of his house, but not very rich ... The Hercules Company are still raising and crushing stone from their very large reef. Tyson's Reef - The company are still crushing from the reef, which appears to thicken as it deepens ... Engisch and Myers are upon the same stone. Perseverance Reef - Kershaw and Company ... have had another good crushing. Should say that seventy out of the hundred of quartz claims in this district are standing idle. Upon the lines where there is pumping machinery at work some bustle and life is visible, but upon those where there is none, the lines from north to south appear to be quite abandoned, most of the claims having been thoroughly worked and prospected to the water. I know that if we had about four times the quantity of pumping engines well placed upon the various lines, with a good drainage law to suit the poor miner as well as the rich, we should be able to send down 20,000oz. weekly, instead of one-fourth that quantity, as at present.¹

Jan 1861:

Eaglehawk and Huntly Division. [G W Hart].
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,700	400
Quartz miners	1,100	
	4,800	400

The machinery is as follows:

Alluvial mining:

Steam-engines puddling, 4-62hp

Steam engines pumping and winding, 5-92hp

Horse puddling mills at work, 345 at work, 125 idle

Whims, 17

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 42 - 647hp

Alluvial mining, except in the case of puddling mills, I cannot find that any perceptible alteration has taken place during the last month. In the quartz nothing of importance has occurred, the reefs in general continuing to yield about the usual amount of gold, nor is there likely to be much improvement until the reefs are cleared of water, and this cannot be done as long as the holders of claims are not obliged to contribute to the expense of pumping.²

April 1861:

Kangaroo Flat Division -

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,348	714
Quartz miners	1,379	
	4,727	714

The machinery is as follows:

Alluvial mining:

Steam engine winding, pumping, puddling, &c., 4-105hp

Horse puddling mills at work, 645 at work, 114 idle - 759

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 63-1,127hp

Whims, 17 at work and 30 idle - 47

Whips, 6 at work and 8 idle - 14

1 Mining Surveyors' Reports, Jan 1861

2 Mining Surveyors' Reports, Jan 1861

Alluvial Mining - This has been an excellent month for those who have had a good supply of water, and I think the majority of the puddlers in my division have been pretty well off in that respect; the weather has been remarkably dry and fine and all those deep parts of the flats and gullies that are only accessible to, for water, &c., during the very dry weather, have been got at with undoubted results, frequently these places yield upwards of 10 oz per puddling mill full. The rush to the Sheep Wash has cooled down a little; there are about 60 miners in all in and around the spot, most of whom are I believe making good wages. Alluvial mining has not deteriorated much lately in its real value; its yields are nearly the same as three years ago, and there seems to be nearly the same life and bustle as there was then; the excitement becomes greater as the gullies become worked out, and consequently more demand for what little there is left. Quartz Mining - This, the most important branch, or I might say main source of future mining operations, is reviving into some reanimation and certainly looks considerably brighter than it did three months ago. Perseverance Reef - This line is a continuation northwards of the Windmill Hill and Johnston's Reef ... Kershaw's Claim yielded last crushing about 20 oz per ton, and out of 18 tons, a cake was produced weighing 350 oz. Sheep's Head Reef - This line at present is taking the lead in the quantity of work being done upon it; the majority of the old claims have resumed work and most are doing well. Moon and Party of the Red White and Blue Claim, situated between two of the Union Company's claims, have had some very good crushings. Glasgow Reef is beginning to look more business like, and to show quite a new feature to the general tone of the preceding three years. Eight claims are getting gold in two different places; five claims to the south of the pumping engine averaging 1 oz and three one mile farther north, averaging about 1 oz per ton. In walking across the heads of Sparrow Hawk, Derwent, and New Zealand Gullies, a few days ago, I was very much struck with the fine appearance the country there presented for the prosecution of quartz mining, wondering why so little had been done in that locality...¹

1861: Elysian/Whipstick area - In 1861 three men discovered a new goldfield fifteen miles north of Neilsborough, and seven miles east of Emu Point, Thunder Plains. [OC, 17 June 1861. Possibly Kamarooka].²

Feb 1861:

Eaglehawk and Huntly Division -
The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,400	400
Quartz miners	1,100	
	4,500	400

The machinery is as follows:

Alluvial mining:

Steam engines puddling, 4-62hp
Steam engines winding, pumping &c., 5-92hp
Horse puddling mills 328 at work, 144 idle - 472
Whims, 18

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 42-654hp

Although the greater number of the puddling mills are still at work, a general dullness appears to hang over our mining pursuits at present, and nothing of importance has occurred. In quartz mining this state of apathy in the miners may be attributed to the superabundance of water, as on those reefs that have pumping engines the work goes on with spirit, and the claims yield their average amount of gold. A good example of the benefits to be derived from a pumping engine on a wet reef is evident in the working of the Specimen Hill Company. This company holds a large area of ground on lease, has erected a powerful pumping and winding engine, and has succeeded so well as to find it advisable to put another crushing machine in addition to the one already on the ground. It has lately been reported that a new lead had been discovered beyond Huntly, but on inquiry I found it to be of very little importance...³

1 Mining Surveyors' Reports, February 1861

2 Flett, 1979, p248

3 Mining Surveyors' Reports, February 1861

March 1861:

Eaglehawk Division [G W Hart].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,400	370
Quartz miners	1000	
	4,400	370

The machinery is as follows:

Alluvial mining:

Steam-engines puddling, 2-16hp

Steam engine winding and pumping, 5-92hp

Horse puddling mills at work, 212 at work, 263 idle

Whims, 22

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 33 - 482hp

A great reduction will be observable in every branch of mining during this month, principally owing to the want of water, and most probably after rain the great number of engines now idle will recommence to work.

In the alluvial there is still some work being done; but the Huntly Lead being partially lost, the miners are taking up their claims over a wide extent, whereby the ground bears more the appearance of prospecting than actual mining. Nothing worthy of attention has taken place in the quartz mining.¹

April 1861:

Kangaroo Flat Division -

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,860	740
Quartz miners	1,480	
	5,340	740

The machinery is as follows:

Alluvial mining:

Steam engine winding, pumping, puddling, &c., 3-90hp

Horse puddling mills at work, 725 at work, 95 idle - 820

Whims, 22

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 64-1,146hp

Whims, 27 at work and 20 idle - 47

Whips, 9 at work and 8 idle - 17

Mining in both its branches is being briskly prosecuted throughout my division. The Sheepwash Rush is being extended daily, and the direction the lead is at present taking is about east-north-east, deepening as it extends; the present depth is 20 feet; some fine lots of gold were brought in this month. The miners seem sanguine as to the probable result, providing the lead continues and breaks out in the more open country towards the junction of the creeks (Sheepwash, Emu, and Axe Creeks). There have been a few new reefs struck and opened this month... I will mention a lead close to and parallel with the Opossum Reef, Kangaroo Gully...²

1 Mining Surveyors' Reports, March 1861

2 Mining Surveyors' Reports, April 1861

May 1861:

No 1, Kangaroo Flat Division. [Edward T Harper].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,894	824
Quartz miners	1,158	
	5,502	824

The machinery is as follows:

Alluvial mining:

Steam-engines puddling, winding and puddling 3-90hp

Steam engine winding and pumping, 5-92hp

Horse puddling mills at work, 664 at work, 108 idle

Quartz mining:

Steam engines winding, pumping, and crushing, etc, 64 - 1,146hp

Whims (35 at work and 15 idle)

Whips, 11 at work, 6 idle

In my division of this gold field mining is steadily and prosperously progressing in all its branches. In the alluvial, the puddlers, with all the appliances brought to bear now, make but passable poor ground, and even that which has been more than once turned over, remunerate them. Every inch of available ground is being worked, also those blocks of ground which have been thrown open by the dissolution of many of the steam puddling companies, are found to pay individually very well, by which method I find employment is given to a greater number of men than ever the companies could conveniently or lucratively have employed. Reefing - Many rich leads have lately been discovered by trying the ground to the right and left of the old workings; imagining that they were upon the main and only lead, the miners formerly never troubled themselves to further prospect the ground. I am of the opinion that in one-half the claims at present held the main reef, or at least the most lucrative one, has not yet been struck; it is this uncertainty which maintains the interest of the goldfields. Sheepshead Reef - This line is situated upon the SE side of Bendigo Flat, and can be traced for at least one mile, north and south; the reef crops out very large on the surface, but is of a very poor quality; now and then very rich patches are discovered. Moon and Company, of the Red, White and Blue, and the Union Company, to the south, have been working for the last months a splendid body of stone about 10ft thick ... The Union Company are raising stone from the 150ft level, which is considerably below water level ... Moon and Company have 1000oz. amalgam for ten days' crushing, they intend crushing another week before retorting off, expecting at least 800oz. of gold. The union Company will have a greater extent of this stone, but at a much greater depth below water level, and more expensive to work. Several of the other claims are working stone more or less remunerative. Bird's Reef - This is a short line of reef so far has at present been worked, but more favoured I may say than any other line on Sandhurst (Victoria excepted) in having two pumping engines within a distance of 300 yards of each other, one is the Bird's Reef Company, and the other Le Capelain Company: and should there exist (as I have not the slightest doubt there does), a good payable reef at a reasonable depth below water level, it is but reasonable to suppose that with such appliances, if any, and the perseverance and determination of all concerned, that the desideratum will be obtained; it is rather alarming but too true, as proved here, that one pumping engine is quite inadequate to the drainage of a long line of reef, and on some I feel positive that six will not be unreasonable. There are very few pumping engines now working on Bendigo, if any, from which material benefit has been derived above 300 yards along the line, but certainly no great depth has yet been obtained. Glasgow Reef - This line is progressing: several claims north and south are paying well above water level, waiting the results of the pumping shafts. New Chum Reef - The New Chum Company have some time since resumed pumping, they are also raising very fair stone from the eastern surface reefs. Quennarty and Company immediately to the north are working some very good stone ... Gibbs and Lazarus are raising stone from below water level; they are employing a large number of men, although the stone is comparatively poor - the greater the quantity the better it pays. Stafford Reef - Heine Company are now raising stone from a depth of 170ft. Tyson's Reef - There are 3 claims together on this line doing well. The most southern of which is the Tyson's Reef Company; they are draining the line very effectually at a very great expense, and unfortunately only one claim of 20 yards pays assessment.¹

May 1861:

Eaglehawk and Huntly Division [G W Hart].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,300	350
Quartz miners	1,000	
	4,300	350

The machinery is as follows:

Alluvial mining:

Steam-engines puddling, 1-4hp

Horse puddling mills at work, 329 at work, 141 idle

Quartz mining:

Steam engines pumping, winding 5-92hp

Steam engines pumping, crushing, and winding, 42-654

Whims, 18

It appears that it is now pretty well decided that puddling by steam, especially with cylinders, is a failure, and that puddling by horse only will remunerate the miner. The last of the lately established steam puddling companies in the division have given up work a few days since, and the greater part of them are now endeavouring to dispose of their interests in their leases - when, no doubt, the same ground that could not be worked by steam puddling will be worked to advantage by the individual puddler. The extended claim system, whereby each company of alluvial miners is entitled to hold 100 yards square of ground, in deep sinking, or where any very great outlay is required, I think will work well, and will, most probably, give a great impetus to the alluvial mining at Huntly, where such ground is mostly found. In quartz mining nothing of great importance is now going on. The reefs continue to yield the average amount of gold, which certainly does not diminish in quantity as the depth increases. The greater portion, however of the reefs, that is those yielding at present only sufficient gold to clear expenses, are still prevented from being worked extensively, by water, and such will be the case until some effectual drainage law compels the cooperation of very claim holder who is or may be benefited by an adjacent pumping engine.¹

1861: New Year dawning across the Bendigo Valley in 1861 carried with it little of the glow of optimism that had swept in 1860 ...although the investment spree had left in its wake a flotsam of wrecked hopes and empty pockets, the simultaneous influx of capital into legitimate companies on rich ground has proved a desired boost ... In a wider sense, the investment boom was premature ... Essential as capital was to exploiting the reefs, it could not compensate for the unavailability of mining machinery and other equipment. That already in use was often makeshift, unsuitable and uneconomic ... until 1862 all heavy mining machinery equipment had to be secured from Melbourne or Castlemaine.²

1861: In February the Bank of Australasia was exhibiting a spectacular cake of 1,036 ounces won by Taylor and Lindsay from two tons of quartz from their claim on Johnson's Reef. The claim was a bonanza, its owners being credited with taking £30,000 of gold from it. Other companies working the same line of reef were similarly rewarded. Abbott and Company secured 1,188 ounces from 710 tons; Thorpe and Company 3,934 from 262 tons. In September another party took 245 ounces from 16 tons; still another party turned out a cake of 332 ounces from six tons. Earlier, on the same golden line, Dowding and Chapple secured 4,734 ounces from 336 tons. Early in 1861 the Oriental Bank displayed a fine cake of 604 ounces from 17 tons of quartz that the Red, White and Blue Company had taken from their shaft on the Sheepshead Reef. On the Victoria Line the Hercules continued to prosper and on the Hustler's. Latham and Watson were jubilant at having rediscovered a lost rich lead.³

1861: Kelly had set up an early 12 stamp battery with amalgamator at the foot of New Chum Gully [Christened the Bendigo Quartz Mill]

1 Mining Surveyors' Reports, May 1861

2 Cusack, 1973, p131

3 Cusack, 1973, p132

- June 1862:** Whilst investors were still licking their fingers after having had them burnt in the speculation blaze, news reached Sandhurst that a German digger, Jacob Bolle had come upon a golden outcrop in the Whipstick Scrub no more than a couple of miles from Sydney Flat. Sandhurst acted predictably ... diggers dragged out cradles and dishes and headed for The Whipstick. In July, Bolle took a couple of hundred ounces from a crushing of twenty tons, but the glittering promise was deceptive - the Unfortunate Bolle's Reef, as it came to be called - was no more than a richly-studded blow of quartz. Bolle's discovery was followed, however, by other strikes.¹
- 1862:** Towards the end of June 1862, a miner named James Bryers together with his mates were prospecting a small gully some two miles north of Sydney Flat. They obtained 7 1/2 oz of gold ... A small rush followed and within a few days some 200 diggers were at work. They named the spot Cricketers Gully ... While this rush was in progress, a party of Germans were working a quartz reef on a hill at the head of Cricketers Gully. They named their newly discovered vein of quartz Jacob's Reef ... The reef was 8 feet wide and at the time, was worked to a depth of 40 feet. The first crushing of 20 tons yielded 200 oz. However, like many of the Whipstick reefs, gold failed at lower depths.²
- 1862:** In 1862 the suburbs of Quarry Hill, Ironbark and Long Gully sought annexation by the Municipality of Sandhurst ... Fearing for the fate in store for it, Eaglehawk sought local government on its own account and became a separate municipality the same year. Under the provisions of the Municipal Amendments Act, both became boroughs the following year.³
- 1862:** Whipstick - In 1862 Jacobs Reef was discovered, and a party of Germans opened the alluvial at Jacobs Gully; the unfortunate Bolles Reef, was also discovered. J A Patterson, there in 1862, gives the names of the diggings north-east of Flagstaff Hill as the Whipsnake, the Beehive, and Skylark diggings.⁴
- May 1863:** Sebastian - In May 1863, a German, Sebastian Schmidt, discovered what became known as Sebastian Goldfield, about four miles west of Flagstaff Hill, near Myer's Creek P.R., and caused a large rush from Bendigo. He applied for a reward to the Rewards Board in 1864, but was refused. Another unsuccessful applicant for a reward was R. Burgess, who with mates, Lucas and Flowers opened a reef north of the alluvial diggings on 4 May 1863. Bailey and Co. soon after discovered alluvial gold near the reef. In July it was found west of the Sebastian Lead. Part of the rush was to ground owned by squatter Hugh Glass, and there was a riot when he tried to keep the diggers out. In October 1863 Gordon and party got gold on Gordon's Flat near Sebastian, but the diggers left in disgust towards the end of the year owing to Glass and his agent, Howitt, and the 'scandalous overcharges' it was aid, but also on account of the discovery of Raywood. In August 1863 Sardine Gully was opened near Snowball, on what was then the edge of the Whipstick.⁵
- 1863:** 23 May, some fine specimens of gold-bearing quartz were exhibited at the Bank of New South Wales, Sandhurst. They were broken from a newly-discovered reef some 13 miles from Sandhurst, on the western fringe of the Whipstick ... The reef was found by a party of three men, Messrs Burgess, Licas and Flowers ... They were unaware that their find was on private property and within a few weeks a major rush would take place ... 29 May, it was estimated that 500 diggers were on the site, with some 100 shafts going down, and the claims had been pegged over an area a mile long and 300 yards wide. *The Bendigo Advertiser* 30 May 1863 reported: - The Sebastian Diggings "At the new rush at Myer's Creek ... the miners have agreed to call the rush by the above title, in honour of the holder of the prospecting claim, a German named Sebastian". On June 3 it was estimated that close to a thousand men were on the ground, but scarcely a 100 were working. Although claims were pegged out for a distance of some two miles, the sinkings were confined to within a length of seventy yards. There was great activity with the erection of stores, smithies, butcher's shops and grog shanties ... By the 11 June, the rush had probably reached its peak, when the population was estimated at 2,000. On the 8 June 1863, a surveyor marked out a Government Road and two streets ...

1 Cusack, 1973, p133

2 Perry, 1975, pp12-13

3 Cusack, 1973, pp 137-38

4 Flett, 1879, p248

5 Flett, 1979, p249

The lead at Sebastian extended to a considerable depth in its westward course. The first shafts were bottomed at between 30 and 36 feet ... Later, shafts were sunk across the flat, and a row of them some fifteen claims in width. On the outer claims was first was struck at a depth of 6 feet, but towards the centre of the flat sinking was up to 70 feet or over. It was no wonder shepherds waited until their neighbours reached bottom to test the prospects before they started work on their own shafts. Sinking a seventy foot took from three to four weeks. As an alluvial field, Sebastian was not a great success. On Tuesday 2 June, some anxiety was felt by the diggers when Mr Donald Campbell visited the rush. After examining plans and survey marks, he declared that the lower part of the diggings was on his private land, some 240 acres taken up by him previously on a pre-emptive right. He stated, however, that he would offer no obstacle to the miners working on his ground ... A few days later, Mr Breen, a surveyor, visited the diggings under engagement to Mr Hugh Glass to make a survey of certain land which Mr Glass believed was his. The survey revealed that 400 acres which embraced not only the main part of the Sebastian diggings but also the rich reef discovered by Burgess and Co., was actually on part of a pre-emptive right owned by Mr Glass ... As most of the working claims were on Mr Glass's land, there came an almost complete halt to mining operations ... Many believed that Mr. Glass's title to the land could not prohibit mining. [Glass set conditions for mining on his land P.100] including - Claims were to be 40 feet square and the conditions were "That £1 be paid on application for a claim, and an additional £3 when gold is struck...Followed a series of trespassing & court cases until a more reasonable access conditions [to the diggers] were drawn up. By mid-October 1863, it was observed that many stores, butchers' shops, blacksmiths and other business places on Sebastian had closed down and shifted elsewhere. The gold yield was much reduced. There was a reluctance by the miners to sink deeper shafts, for as the lead as it approached Myers Creek it deepened considerably, while returns were generally poor. The end of the Sebastian rush came in October when a new rush to the Raywood diggings, some four miles north of Sebastian took place. Although many of the Sebastian miners hurriedly transferred to Raywood, some of them remained in the former place, where alluvial mining on a small scale continued for some years. The Sebastian lead was traced westward for a quarter of a mile where a sudden drop in depth from 30 to 100 feet was encountered. It was a difficult and expensive field for alluvial miners because of flooding in the deep sinking. Prior to 1900, a co-operative party, the General Gordon, sank to shafts of 140 and 145 feet, striking a mass of washdirt four feet thick, which unfortunately was unpayable.¹

Whipstick gullies

- May 1863** Napoleon Gully 28oz nugget
Nov 1863 Raywood Considering its small area, Raywood was perhaps the most prolific source of nuggets on the Bendigo goldfield. The first, of 24ozs, located in Nov 1863. In all, 25 nuggets of from 24 to 113ozs found between 1863 to 1880.²
- Oct 1863:** Raywood - On 22 October 1863, Mr Raywood, a Sebastian digger, was bushed for a night on Thunder Plains, about two and a half miles north-west of Elysian Flat. On the following day he found gold, sank a shaft and got three ounces of gold without washing. He went back to Sebastian for his mates, but had great difficulty finding the place again ... By 28 October Sebastian was deserted, and by the beginning of November there were 1500 on the Raywood field. The site of the discovery was thick whipstick scrub, and one of the first there was Mr McWhirter, the discoverer of Poverty Gully. The original discovery was near the top of a hill and the rush went west down the gully on the Raywood Lead. Early in November a run of gold east from the top of the Raywood Lead on the opposite side of the hill was named the Inglewood Lead, a flat opened further south was known as Armfield's Early in December 1863 a tributary gully was discovered running west into the Raywood Lead and named American or Sailor's Gully. Two other small leads, Buxton's and another towards Elysian Flat, were opened at the rush.³

1 Perry, 1975, pp 91-107

2 Perry, 1975, pp166-176

3 Flett, 1979, pp249-50

1863: Alluvial gold at Raywood. On Thursday, October 22 1863, Woodward was prospecting some five miles north of Sebastian on the edge of the Thunder Plains ... at a depth of 4 1/2 feet he picked out several bits of gold. Word of the new find travelled swiftly, exciting great interest at Sebastian and among miners in the many Whipstick gullies ... The new rush which was only three miles north-west of Elysian Flat, was named Raywood after Joseph Woodward's home town. The spot where he first found gold became known, as Raywood Gully was to prove extremely rich. By October 30, many tents had been erected and the population was estimated at 1,000. On 4 November a great increase in population was reported, numbering between 1,500 and 2,000, while "tents, stores, boarding houses, shanties, blacksmith's and butcher's shops have been erected with marvellous rapidity ... Numerous buildings of all descriptions are in the course of the erection..." Raywood Gully was unable to accommodate the great number of miners, and many moved out to adjoining gullies and flats...From where the gold was first discovered in Raywood Gully it was traced for a mile-and-a-quarter where the sinking was much deeper ... In a number of claims, particularly the deeper ones, hard cement was encountered. This contained gold but had to be crushed ... The cement was carted to the crushing batteries at Elysian Flat where, although the miners fed the stone into the stampers, the charge for crushing was 14/- per load. By Jan 1864, much of the cement-like washdirt from Raywood was carted to Elysian Flat and puddled. As mining extended westward down Raywood Gully the sinking gradually increased. This rich, ancient run of gold-bearing gravel became known as the Raywood Lead, and its course, as it deepened, swung sharply northwards. For the most part it proved payable ... When the sinking on Raywood Lead reached fifty feet, its tortuous course was difficult to follow ... During April 1864, one party, Hart & Co., struck a rich gutter on the Raywood Lead at a depth of seventy feet, which was estimated to yield 3ozs. to the load. The lead was eventually followed further north where the auriferous gravels spread out in the form of drifts. The sinking finally reached a depth of 100 feet, but as average yields were only 2dwts per load, mining here proved unprofitable. Early in Dec 1863, holes were being sunk in Yankee and Inglewood Gullies ... sinking in the latter ranged from 12 to a 100 feet, and later were known as the Inglewood Lead. ... Several claims on this lead in 1864 yielded over 20 pounds (240ozs) weight of gold each ...Newspaper reports indicate that the Inglewood Lead was the richest alluvial area on the Raywood goldfield. Today, along the course of the former Inglewood Lead, once studded with diggers' holes with their surrounding heaps of mullocks, no trace remains of former busy times. The heaps have been levelled and the area long used for agricultural purposes.

1863-1880: Considering its small area, Raywood was perhaps the most prolific source of nuggets on the Bendigo goldfield. The first, of 24ozs, located in Nov 1863. In all. 25 nuggets of from 24 to 113ozs found between 1863 to 1880. ¹

Nov. 1863: Kamarooka. What was probably the first reference to mining at Kamarooka appeared in *The Bendigo Advertiser* 20 Nov 1863, when the Raywood rush was in its early stages. A brief report stated that two prospectors, James Taylor and Henry Scheffer had opened up a new diggings 18 miles from Raywood and 36 from Sandhurst. The distance from Raywood to the locality which present-day Kamarooka residents refer to, as "The Rush" is approx 9 miles. The site in the Kamarooka Forest is well-pitted with old alluvial holes, with several dams and small sandheaps are evidence of former crushing batteries ... There is some confusion as to where gold was first found at Kamarooka, but early mention of the Millwood Diggings suggests that it may have been in the vicinity of what is known as the Millwood Dam, situated along a very rough Whipstick track which in 1865 was the main road from Huntly to Kamarooka. This road was made after the Kamarooka Rush for the convenience of the miners. Near the Millwood Dam are numerous old diggers' holes. This locality is some 3 miles South of "The Rush" site. During April 1864 another alluvial rush was reported on Kamarooka where it was said the sinking was shallow, with a few parties making wages. The general opinion was that Kamrooka was not very promising. Six months later some miners still preserved, with sinking in places to forty feet. Although several bush stores had been erected on the site, the most encouraging sign then at this place was the discovery of a quartz reef from which five tons, crushed at Raywood, yielded 16 oz 8 dwts of gold. A week later, 14 October, Kamarooka was declared a failure as far as alluvial mining was concerned, and efforts were concerned on reef mining, as there were numerous quartz veins and reefs visible on the surface. At this time it is little doubt that miners were on "The Rush" site where work was under way on the Doubtful Reef. This reef eventually proved the best at Kamarooka, and a line of shafts and sandheaps there today are proof of much previous work ... Lack of crushing facilities was an expensive inconvenience to the miners early on Kamarooka. During December 1864, quartz was carted some 7 miles to Elysian Flat for crushing.

In April 1865, party from Epsom was making arrangements to erect a battery near the Kamarooka reefs. The party, James Hedley & Company, erected a 12-head battery driven by a 14hp steam engine. The made a dam and excavated 4 miles of water-races across the gently undulating country of the Kamarooka Forest to catch as much rainfall as possible ... By October the battery was in

¹ Perry, 1975,p173

operation, and proved most satisfactory. Most quartz mining at Kamarooka was only to shallow depths ... An early worked reef at Kamarooka East was the Pembroke, where Burns and Co. were working in December 1864. The Homeward Bound Company was a later company, which in June 1882 was working a big reef at a depth of 300 feet.¹

Nov 1863: Kamarooka. On 20 November there was a report of a new diggings discovered by James Taylor and Henry Scheffer, twenty-eight miles from Raywood, and although the distance was less than half that, this could have been the opening of Kamarooka. The first official reports of the field, in March 1864, said that alluvial and reefs had been discovered and forty men were on the field. By December seven lines of reefs had been opened - Jones Reef, the Doubtful, Pembroke Castle and others. Later new discoveries in the alluvial at Kamarooka led to a rush there in 1873.²

1863-1867: Raywood. The first known reference to reef mining at Raywood appeared in *The Bendigo Advertiser* on 7 December 1863, concerning a crushing of five tons which yielded 4 oz 10 dwts of gold from a claim aptly named the Pioneer Reef. Another reef close by and parallel to the Pioneer Reef was the Coulter Reef. Messrs Armfield and Coulter were apparently the prospectors on these reefs, for a function held at the opening of the first crushing battery at Raywood, these men were toasted as "the first prospectors of reefs" on the field. An old open cut still exists at Raywood, on the northern slopes of Christmas Hill, which marks the site of the Pioneer Reef. Indications there suggest that mining on this reef was only to shallow depths. One claim on the Pioneer Reef sold to the Raywood Bank of NSW in August 1864, a cake weighing 43 oz from a crushing of 16 tons. The Perseverance Reef, a quarter of a mile north of the town is known to have yielded hundreds of ounces. The company was formed in 1868, operating on a large body of stone 19 feet wide. Much of it was unpayable ... The site of this former mine is now part of the Raywood Golf Links. The Buxton Company was registered in July 1868. This reef, crossing Buxton Gully to the north of the township, was rich in patches, the shaft eventually reaching a depth of 260 feet. Another early-worked on Raywood was that of the Croesus Company, whose claim adjoined that of the Nil Desperandum, on its northern side. In January 1869, the Croesus claim had four shafts at various depths ranging from 70 to 120 feet. An early report concerning the Nil Desperandum December 1864, records a crushing of 73 tons which yielded 63 oz 3 dwt. The shaft was later sunk to 500 feet. An interesting innovation in underground blasting technique was introduced at the mine early in 1869. This was the use of gun cotton ... During 1887 the Nil Desperandum was again paying dividends, but values later slumped, and the mine closed down in 1889. During its 25 years existence, £30,000 was paid in dividends. Another company, the New Nil Desperandum was formed in 1906, and worked from the original shaft of the old company. Extensive development work was carried out and the shaft deepened from 500 to 800 feet. Mr James Hoskins was manager from 1906 to 1908. Mr W Bren then took charge for some years during which time almost 15,0000zs of gold was obtained. Mr R Eddy managed the mine later and up to the time when operations ceased in 1916 ... One of the last miners to work in this mine stated that at the 800 feet level the quartz was 150 feet wide and 20 feet thick. He also said that "so great was the excavations made by the tributers that eventually they were unable to get their machines to the face". The first quartz miners were greatly inconvenienced by lack of crushing facilities. Some reefers had their stone carted to Elysian Flat, some three miles distant, with the cost for cartage seriously depleting profits. In January 1864, Coulter and Party who owned a battery at Huntly, had bullock-dry load of stone carted there for a trial crushing ... There was an urgent need for a crusher at Raywood and in 1864, an Inglewood man, Mr Page, erected the first battery on this field. The site chosen was approx a half mile north from the centre of town. A series of shallow holes, and an old dam bank and an area of scattered sand on the present Raywood Golf Course are probably the site where the first crusher was operated. The end of April 1864 saw the completion of the dam, 267 feet long and races were to be ploughed extending for five miles to conduct as much rainfall as possible into the reservoir. The battery consisted of 12 head of revolving stamps, driven by a 10hp steam engine. The boiler was 20ft long ... Sometimes the battery was idle through shortage of water ... A shaft was sunk, and a depth of 108 feet a supply of water was obtained. The proprietor planned to deepen the shaft to 120 feet and tunnel on each side of the shaft in the hope of obtaining further supply ... In March 1865, the battery was dismantled and re-erected at the Company's claim on the Dead Horse Reef near Harvey Town, Eaglehawk. With the removal of Page's battery, Raywood was again without crushing facilities.

By 1864, there had come to the district one of the most unusual crushing machines on the Bendigo goldfield ... Hart's Patent Cylindrical Quartz Crushing Machine ... two iron cylinders, one revolving within the other. The inner cylinder was perforated with holes, the stone being admitted by means of a chute. As the inner cylinder revolved the stone dropped through the holes, and was ground to a powder. Mercury was introduced with the quartz ... The machine was apparently made in Melbourne ... Installation of the plant, which was driven by steam, was completed in October. Also erected were four riffle tables, another patent Hart's ... The machine was officially opened and

1 Perry 1975, pp143-147

2 Flett, 1979, p250

christened on 23 October 1866 ... The machine was not a great success, but for some time it was engaged in crushing hundreds of loads of cement ... The machine ... ceased work during February 1867.¹

June 1863: Another German digger, Sebastian Schmidt, struck good gold at twelve feet in vicinity of the Seven Mile Hut. Old days were relived even if the rush was brief. The ground was patchy but the following May, Schmidt and his party opened up the main reef there and for many years the mine that eventuated, the Frederick the Great, was regarded as one of the soundest and most competently worked mines in the colony. At last, it seemed, The Whipstick was unlocking its secrets. In October 1863 the cry of 'Rush-ho!' rang out once more and men up-ended picks and streamed away to the Raywood Rush. The following month, the Oriental Bank of Eaglehawk was displaying yet another Whipstick nugget - 170 ounces ... unearthed by an eccentric New Zealander, John Williams in Red Jacket Gully.²

July 1863: Eaglehawk Division (Mr G.W. Harts, Surveyor) - Mining population - Europeans, 5500; and Chinese, 650; comprising 5150 alluvial, and 1000 quartz miners. Steam engines - alluvial mining, 2 of 37 horse-power; and quartz mining, 42 of 633 horse-power; all engaged in quartz mining... Very little of any importance has occurred during the past month. Alluvial mining has been retarded by the inclemency of the weather, many claims in the flats and gullies having been flooded and rendered unworkable for the present. At the Sebastian Flat, much damage has been done by the heavy rain and gales of wind. The lead has not yet fulfilled the sanguine expectations of the miners; still prospecting is carried on with great vigour and perseverance. In the alluvial flat to the westward of Myer's Creek, a party has sunk about 120 feet with great indications of finding a permanent lead... The Sebastian Flat must be progressing, though slowly, as a company is about to erect a crushing machine. Several puddling mills have been erected on the banks of the Myer's Creek, and are doing good service. The claims about Huntley are still being worked with advantage.³

Nov 1863. Auriferous discoveries on the site of the present township of Raywood in November, 1863, caused a considerable rush, eventuating in the establishment of a borough, including the township of Neilborough (Elysian Flat). The continuous drought of the year 1864 and up to June (1865) paralysed alike the exertions of puddlers, quartz miners and alluvial miners, and doubtlessly retarded new discoveries.⁴

1864-65: A lack of water still hampered progress and the severe drought of 1864-65 took toll of several of the forty-odd companies that had sprung up during the previous eighteen months.⁵

1864: Frederick the Great, Sebastian. *The Bendigo Advertiser*, June 6 1864, "We hear that a company of miners from Clunes have leased the reef on the Sebastian from the owner of the land, Mr. Hugh Glass, and they intend very shortly erecting massive machinery there". There were eight men in the party, known as Charlton and Co. The terms under which they held the ground was a ten year lease for 400 yards along the reef by 150 yards wide, with a right of 80 acres for drainage purposes and a 2 acre cart road. The lessees had to erect a crushing battery and pay to Mr Glass, 30% of the gross gold yield. ... In early September 1864 Charlton and Co. began erection of the machinery, consisting of a twelve-head battery arranged in two groups of six stamps each. The 12hp engine was driven by steam and a tramway, which sloped down into the open cut of the reef, was designed to haul the broken quartz directly into the battery. Members of the syndicate installed the machinery themselves under the supervision of the Bendigo engineer, Mr Pickles. In order to give the tailings sufficient run-off, the battery was elevated some 5 feet above ground level on immense logs for which excavations had been dug to bedrock.

By December all work was completed, and 6 December 1864, was fixed for a grand opening. The erection of the machinery had cost £1600, but within 6 weeks these expenses were repaid. Later, the area of the lease was increased to 400 acres with a length of 1137 yards along the reef. The tribute was reduced from 30 to 12 1/2%. The reef was worked from the surface to 450 feet where although it increased in size, values decreased and the syndicate disbanded in 1870. Mr Charlton afterwards brought the ground with the intention of again working the mine, but his death put an end to these plans. The ground lay idle until 1880, when a new company was formed, having lease of the area for seven years. During the first two years the company was unsuccessful. An experiment, which proved successful, was the leasing to tribute companies of blocks of ground 300

1 Perry, 1975, pp121-128

2 Cusack, 1973, p133

3 Mining Surveyors' Reports, July 1863

4 Mining Surveyors' Reports, June 1865

5 Cusack, 1973, p134

feet square along the line of the reef. It was known as the Bruhn's shaft, situated between 900 and 1000 feet south of the Frederick main shaft, rich stone was struck and worked to a depth of 300 feet. Another tribute company was Barker's which also paid well. The parent company later struck payable gold. With mostly English capital the company was reformed in 1887 and for a time did well. To 1893, £28,275 was paid in dividends, with calls amounting to only £3900. Gradually returns depreciated until in 1897, the English shareholders were forced to re-organise the company. During 1899, efforts to obtain particulars of production from the then-legal manager failed, but it was estimated that the value of gold produced by the company exceeded £100,000, and the total amount of gold obtained from the Frederick the Great lease to that time, 170,000ozs. However, production for the 12 months to June 1899 average only 4dwt 7 grains per ton. The shaft had then reached a depth of 900 feet. The records of the Victorian Mines Department disclose that from July 1899 to 1912, after which the mine closed, an additional 51260xs of gold was recovered.¹

1864: Whipstick - There were a number of new discoveries between Raywood and Elysian Flat in the Whipstick late in 1864, and at Glenlynden and Prussian Gully.²

March 1864:

Kangaroo Flat Subdivision. [H C Campbell]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1,000	720
Quartz miners	950	
Other population	9,040	240
	10,990	960

The machinery is as follows:

Alluvial mining:

Horse puddling mills at work, 320 at work, 200 idle

Quartz mining:

Steam engines employed, 35 at work, 5 idle, 800hp

Whims, 40 at work, 12 idle

Total value of mining plant in the subdivision, £80,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 5

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 53

Since my last report there has been a decided improvement in quartz mining in this division, the yields of gold being generally greater, and a greater quantity of stone raised. I may mention the Hustler's Reef as the richest, the yield varying from 2 to 4oz. per ton.³

1 Perry, 1975, pp108-110

2 Flett, 1979, p250

3 Mining Surveyors' Reports, March 1864

March 1864.

Eaglehawk Subdivision [G W Hart].

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,200	650
Quartz miners	1,200	
Other population	4,350	180
	8,750	830

The machinery is as follows:

Alluvial mining:

Steam engine pumping, 1 at work and 1 idle, 37hp

Horse puddling mills at work, 380 at work, 150 idle

Quartz mining:

Steam engines crushing, 35 at work, 1 idle, 507hp

Steam engine pumping and crushing, 1-18hp

Steam engine pumping, crushing and winding, 1-45hp

Steam engine winding, 1-10hp

Steam engine pumping and winding, 2 working, 1 idle, 53hp

Total value of mining plant in the subdivision, £100,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 4 1/2

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 50

In quartz mining a decided improvement has, of late, taken place, many of the principal reefs giving yields, which have not hitherto been surpassed. The Catherine Reef, The Prince of Wales, and the St. Mungo Companies have been especially fortunate and notwithstanding the increasing depths to which the reefs are sunk, the quartz continues equally rich. The success of the Clarence, the Lady Barkly, and several of the private companies on Windmill Hill line, has given increased confidence to mining shareholders, a greater tendency to prospect exists, and the opening of the Dead Horse Reef and of the Leicester, lately discovered, both profitable ventures, shows that many payable lines of auriferous stone await but the energy and enterprise of the prospector to convert them into profitable sources of employment to a large number of our mining population. In Sailor's Gully and in the vicinity of Job's Gully payable reefs have been opened ... The Johnson's Reef and the Nelson's Reef Companies ... have improved and their prospects are more encouraging ... In many claims previously abandoned work has resumed and so far as quartz mining, never was prosperity more widely and generally felt, a fact which is made patent by a very considerable increase in the number of quartz miners in this division. In alluvial mining a great number of puddlers and others have been idle in consequence of the water in many of the gullies being insufficient for mining purposes. In Huntly and Epsom where the sinking is deep, the extended areas granted to miners have produced a marked improvement in the system of mining, steam power being introduced and the claims are worked in a more efficient manner than formerly. The returns so far as gold is returned are merely approximate. The companies crushing for the public in many instances merely retort the gold for their customers and consequently are wholly unacquainted with its weight or the gold therefrom obtained.¹

March 1864.

Raywood Subdivision [E N Emmett]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2,540	32
Quartz miners	50	
Other population	2,510	
	5,100	32

Miners working at following places - Coulter's, Welbourne, Pioneer reef; Inglewood Hill Lead; Raywood Lead; Sailor's Gully Lead; Sebastian Lead; Elysian Flat; Comoroka, Raywood.

Total value of mining plant in the subdivision, £4,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 1/3

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 3

In consequence of the almost total absence of water for washing, the auriferous washdirt has been for some time past, and still largely stacked awaiting the coming rain. The expense of carting the washdirt to the only water now to be obtained, the Yarraberb Station precludes any but the holders of rich claims. While Elysian Flat is again receiving population, caused by new finds to the east of Raywood, Sebastian opening again for gold to the south, Comoroka, about 10 miles to the NE, and the Raywood lead rich to the west towards the plains, I cannot refrain from submitting to you my opinion which is borne out by many intelligent miners, that this portion of the division will, this winter, support a large population. Nuggets have been constantly found varying from 2oz. to 110ozs. and although the deep leads promises favourably, I am of opinion that a plentiful supply of water will open up a large amount of surface diggings, in fact, nuggets have been found in Sailor's Gully 45ozs. in weight only 6 inches from the surface.¹

June 1864.

Kangaroo Flat Subdivision [H C Campbell]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1,000	720
Quartz miners	970	
	1,970	720

The machinery is as follows:

Alluvial mining:

Horse puddling mills at work, 320 at work, 190 idle at work

Quartz mining:

Steam engines crushing, 36 at work, 4 idle, about 500 head of stamps, and 800hp

Whims, 43 at work, 10 idle

Total value of mining plant in the subdivision, £80,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 5

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 55

Some activity has been displayed in quartz mining; several reefs that were abandoned are again being worked... The reason that these reefs are being again taken up is, that crushing is cheaper now than it was, and labour is both cheaper and more abundant. The return I send of the quantity of quartz crushed and the yield of gold, by no means represents the whole amount; inasmuch as many of the private companies object to give a statement of what they do; there are some of these who have crushed a large quantity of very rich stone. There is, in this division, an almost unlimited amount of quartz, that would give a handsome return if properly and economically worked; but a very large portion of the reefs is held by persons of limited means who, unless they are fortunate enough at the onset to strike rich stone, cannot afford to work, and either keep under protection or abandon their claims altogether. As regards alluvial mining, more is now doing in consequence of there being more water than in the summer months; no new ground has been discovered.²

June 1864:

Eaglehawk Subdivision

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3,000	650	3,650
Quartz miners	1,400		1,400
Total	4,400	650	5,050

In my last report I stated that an improvement had taken place, that the number of miners in this division had considerably increased, and that more confidence and energy were displayed by the various owners of quartz claims in this district than had been exhibited for some time previously. The result of this has been a more thorough working of the different mines, a more energetic prospecting of the country, and the opening up of several new reefs, and the reworking of others long abandoned as unremunerative, the yields from which have amply rewarded their enterprising proprietors. The Apollo Hill offers an instance of this, the new reef there discovered having averaged one ounce to the ton with a considerable body of stone. While alluvial mining (except in the deep lead at Huntly) is comparatively neglected, quartz mining is making rapid strides, machinery has been introduced by most of the companies, and a more economical and efficient system of management is adopted than in former times.

Among the various companies none stand more conspicuous for their success than the Catherine Reef United; the crushings from this company's mine, for the last three months, have been upwards

1 Mining Surveyors' Reports, March 1864

2 Mining Surveyors' Reports, June 1864

of five thousand tons of quartz, yielding, on an average, eight and a half pennyweights per ton, and, as the company have a large body of stone which will pay by the quantity crushed, they are about to erect another engine of fifty horse-power, and to render their works yet more extensive than they have been. The claims of Coote and Company, and Cook and Company, contiguous claims on the Star Reef, have been giving very rich returns, and the Sailor's Gully Company have the same stone in their ground; all these are extensively worked. The Clarence Company's ground has been worked to advantage, and in the Star Reef Company a large body of quartz has been found, yielding over five pennyweights to the ton, a result sufficient to pay well with an efficient crushing plant. The Saint Mungo Company still gives high returns, and the Prince of Wales Company is doing equally well. On the Devonshire Reef the Ranzan Company had a crushing of one hundred ounces lately, and but recently the Confidence Company, on the Windmill Hill, obtained from five tons, two hundred and twenty-eight ounces seventeen pennyweights. Alluvial mining fails to furnish employment at present to any large number of persons...except in the deep lead of Epsom and Huntly, where capital has been the means of opening up the ground which had previously lain idle. The North Star Company and the Princess Alice Company, both alluvial, have lately had good returns, and in Sydney Flat an occasional nugget rewards the efforts of the individual miner; but on the whole, the wages of the quartz miner are a larger and more certain income than the alluvial miner can reckon upon.¹

June 1864:

Raywood Division

The total number of miners is as follows: -

		<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	2	036	100	2,136
Quartz miners		210		210
Totals		2,246	100	2,346

At Sebastian, the Frederick the Great Company, upon the private property of Mr Hugh Glass, and taken by the company on tribute (30 per cent of the gross proceeds) for ten years, have given most satisfactory returns. In reference to the Kamarooka quartz workings, I state that no machinery is yet on the ground, and the cost of carriage being so high to the nearest, the parties engaged there stack their stone; but a project is in contemplation to erect machinery for the purpose on the spot. About 10ozs of quartz gold, in nuggets from 5 oz to 1 oz, have been bought by the banks here during the last three months...²

Sept 1864:

Kangaroo Flat Subdivision. [H C Campbell.]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	1,000	720
Quartz miners	1,010	
	2,010	720

The machinery is as follows:

Alluvial mining:

Horse puddling mills at work, 330 at work, 187 idle

Quartz mining:

Steam engines, 37 at work, 4 idle, about 500 head of stamps, 820hp

Whims, 40 at work, 12 idle

Total value of mining plant £80,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 5.

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 55.

¹ Mining Surveyors' Reports, June 1864

² Mining Surveyors' Reports, June 1864

I have the honour to inform you, that during the last 3 months, quartz mining has proved very successful in this division, a large quantity of very rich stone having been discovered on more than one reef. In the Hercules Claim, on the Victoria Reef, quartz yielding more than 3oz. to the ton has just been struck; out of a crushing from this claim, for the last 3 months, amounting to 600 tons, the yield has been 569ozs, but the greater part of this has been from the last 200 tons of stone. On a reef named the Pigeon Reef, near the head of Long Gully, some very rich stone has been struck. It is impossible to get full returns of the quartz crushed, or the yield, many declining to give any information, and in other cases, where it is the custom of letting to miners a battery of stamps, there are no means of ascertaining, as no account is kept by the owners of the machinery, so that returns I send is not nearly what is crushed, but there is every reason to believe that the average I give is a fair representation of the yield generally in the division. Quartz mining is gradually increasing, and ground formerly abandoned as unremunerative is now being taken up and worked to advantage. There is a great extent of ground unworked that presents all the appearance of being auriferous, but the expense of prospecting, at present, prevents its being properly tried. The puddlers seem to be doing very well, but there are no means of getting any returns from this kind of working.¹

Sept 1864:

Eaglehawk Subdivision [G W Hart]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	3,022	650
Quartz miners	1,424	
	4,446	650

The machinery is as follows:

Alluvial mining:

Steam engine pumping, puddling and winding, 1-10hp

Steam engine baling, winding and crushing, 3-27hp

Steam engine crushing, 19 at work and 2 idle, 259hp

Steam engine pumping, winding and crushing, 2-22hp

Steam engine winding, 1-10hp

Steam engine baling and winding, 1-16hp

Steam engine crushing and winding, 2-19.

Horse puddling mills at work, 380 at work, 136 idle

Quartz mining:

Steam engines employed pumping and crushing, 1-16hp

Steam engines crushing, 10-173hp

Steam engines pumping, winding and crushing, 2-70hp

Steam engines pumping and winding, 8-115hp

Steam engines winding, 1-7hp

Steam engines crushing and winding, 2 idle, 22hp

Total value of mining plant in the subdivision, £100,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 4 1/2

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 47

My last report stated that mining matters were improving; since then there has been a marked increase in the number of paying claims, and many reefs, then scarcely defraying expenses, now yield handsome profits. Alluvial mining has been followed to more advantage. Britt's claim on the Huntly Lead ... has just recommenced, and other ground, formerly laying waste, is now affording profitable employment to no inconsiderable number of persons; among others, the Ballarat and Bendigo Company may be mentioned as working on the cooperative principle; they have returned good returns; while the North Star Company, Pottery Flat, has been especially fortunate. But the quartz reefs are still the main support of the district, and quartz mining is making rapid strides, both in public and private companies; they are now working with more energy, and many mines are being thoroughly prospected, which were lately all but neglected; one cause for this is the very low rate charged for crushing, which renders stone of small yield payable, which it was not formerly. I regret, however, to say, that the exertions of some of the owners of pumping engines have been completely paralysed, and some have even been obliged to stop pumping and allow their claims to become flooded, to their great detriment, because the owners of the other claims on the same line cannot be forced to contribute to a fair share of the expense, though they are quite willing to enjoy a fair share of the advantage. Among the reefs that are now being most worked, are the Star and Devonshire. Nearly all the claims are held under miners' rights on these lines are in full work and giving good returns.

One remarkable feature and improvement is, that lately many of the old abandoned reefs have been taken up and re-worked on the modern and improved method of perpendicular shafts and drives instead of the old style of underlie shafts and narrow drives, which certainly more like burrowing in

¹ Mining Surveyors' Reports, Sept 1864.

the earth than mining. Prospecting, both for quartz and alluvial, is carried on with great vigour; for scarcely a week passes without the announcement of some rush always flattering at the outset, hitherto ending in nothing remarkable, except the grouping together of a few miners' tents and shanties, to be dispersed in a few days as rapidly as they had collected. This is essentially the character of the Whipstick rushes, where the entire country is more or less auriferous, but very patchy; but this character is productive of great advantages, in that it opens up the country with its dense scrub, draws public attention to that unknown district, and offers constant employment to a hardy and industrious race of men, who, I hope, may soon fall in with good as auriferous a patch, as the Raywood patch was, when it was first discovered.¹

Sept 1864

[Edward Nucella Emmett]

The population is as follows:

	<i>European</i>	<i>Chinese</i>
Alluvial miners	2,400	100
Quartz miners	200	
	2,600	100

Miners working at following places - Coulter's, Welbourne, Pioneer, May, Star, Christmas, and other reefs; Inglewood Hill Lead; Raywood Lead; Sailor's Gully Lead; Sebastian Lead; Elysian Flat; Comoroka, Philip Gully.

The machinery is as follows:

Alluvial mining:

Horse puddling mills at work, 30 at work

Quartz mining:

Steam engines crushing, 2-24hp & 24 head of stamps

Total value of mining plant in the subdivision, £6,000

Number of square miles of alluvial ground, which is being, or may have been worked upon, 1 1/4

Number of distinct quartz reefs which have been proved to be auriferous to the present time, 5

Quartz reefing here is only in its infancy; it will considerably extend, there being constant finds in the number of claims north and south of prospecting ones ... within the last few days. when rain came, there was no water for washing the auriferous earth, and the miners had to stack their washdirt; now, however the dams erected by the miners are nearly full, and the puddling mills constantly employed washing up. A quartz crushing engine of 12hp with 12 stamps, commenced operations on Thursday last, to the west of Raywood township, and from the great impetus to quartz mining the Elysian Flat and Raywood Steam Quartz Crushing mills will be constantly employed. More steam crushing mills are required. The quartz reefs of Raywood are proving to be auriferous; The Welbourne prospecting claim and claims north and south have also; a trial of two tons from Barkly's claim on this line turned out 7oz. to the ton. The Pioneer and May Reefs have struck gold. There is no doubt that Raywood will become a large gold producing district, both from quartz and alluvial.²

Dec 1864:

Kangaroo Flat Subdivision -

The machinery is as follows:

Alluvial Mining

Horse puddling, 320 at work, 203 idle

Quartz Mining

Crushing, 12 at work, 5 idle, 230 stamp heads, 218hp

Pumping and crushing, 7 at work, 114 stamp heads, 172hp

Pumping and winding, 3 at work, 1 idle, 82hp

Winding and crushing, 1 idle, 12 stamp heads, 10hp

Crushing, pumping and winding, 5 at work, 83 stamp heads, 145hp

Pumping, 3 at work, 3 idle, 118hp

¹ Mining Surveyors' Reports, Sept 1864

² Mining Surveyors' Reports, Sept 1864

During the last quarter there has been considerable activity displayed in quartz mining, and the yield of gold has been fully equal to the other portions of the year already reported upon. Lately some rich stone has been struck at a point a mile below the junction of Myrtle Creek with the river Coliban; from 2 tons of this stone as much as 7 oz to the ton was crushed. There is no definite reef to be seen, and the stone appears to be a surface spur...There appears to be an abundance of quartz, and the country has not been prospected to any extent. A party of Chinese is working the bed of the river Coliban with success, in the immediate vicinity of the new reef. The nearest crushing machine is situated at the Great Eastern Reef, a distance of a bout 15 miles through rough country. Most of the miners on the reef are from the Great Eastern claim, as at present, for want of water, the engine is not working and the claims are idle. In alluvial mining there is not much doing at this time of year, as water is scarce. New machinery is now being erected on 2 or 3 reefs, and altogether there is every appearance of quartz mining being carried on with vigour during the present year. ¹

Dec 1864:

Eaglehawk Subdivision [G W Hart]

The total number of miners is as follows: -

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3,040	650	3,659
Quartz miners	1,456		1,456
Total	4,496	650	5,146

The machinery is as follows:

Alluvial Mining:

- Steam engines pumping, puddling and winding, 1-10hp
- Steam engine baling, winding and crushing, 3-27hp
- Steam engine crushing, 19 at work, 2 idle, 259hp
- Steam engine pumping, winding and crushing, 2
- Steam engine winding, 1-10hp]
- Steam engine baling and winding, 1-16hp
- Steam engine crushing and winding, 2-19hp
- Horse puddling, 333 at work, 187 idle

Quartz Mining:

- Crushing, 10 at work, 3 idle, 173hp
- Pumping and crushing, 1-16hp
- Pumping and winding, 8 at work, 115hp
- Winding, 1-7hp
- Crushing and winding, 2 idle-22hp

Total value £100,000

Alluvial ground 41/2miles

Number of reefs 50

My last report stated that mining was assuming a more satisfactory aspect, that powerful machinery was being introduced, that the companies were working with more system and vigour than had hitherto characterised their management, and that the results were such as to show that the quartz reefs of this district, if worked with judgment and economy, would yield handsome returns for the capital and labour expended. The continued success of many private companies encouraged others to persevere, and the result is, that at the present moment there are more and better paying claims at work than the district could boast of at any previous time. The yields in many instances exhibit monthly a regular increase. Among the many paying lines of reef working at present, the palm must be awarded to the Windmill Hill line, the returns from which have been unusually large. The claims of Grant and Drysdale, Bukcie, Birch and company, the Cinderella, the Kent and Anglo-German Companies (all on the Windmill Hill line), are yielding enormously, while the West of England and Hobson's claims are paying handsome dividends. Brennan and Company, also on the same line, obtained 256 oz for the month of December. The Cinderella Company's cake for the same month was 341 oz, a result considerably surpassed by that of the Kent Company. In December the Johnson's Reef Company had 157 oz, while in the last week of the year the Argus Company retorted a cake of 430 oz from 99 tons of stone; this mine was long unworked for want of drainage, and the above is the result of the first crushing from stone taken below water level, a good illustration of the benefits to be derived from drainage. The Star Reef and (Keith's) Catherine Reef are paying, as are also the St Mungo and Devonshire, while some new reefs are opening up which promise to be very rich. The last reported to me is the Holt's Reef, to the north-west of the town of Eaglehawk; the trial crushing last week yielded upwards of 7 oz to six tons of stone.

¹ Mining Surveyors' Reports, December 1864

The Prince of Wales Company still maintains its average. The Catherine Reef United exhibits a falling off, but the manager confidently reckons, when the new machinery is finished and more ground opened, upon obtaining larger results than ever. Quartz mining about the township of Eaglehawk is rapidly spreading, the good effects of which are clearly evident in the flourishing appearance of the town, which is rapidly losing its village aspect and rising in commercial importance. Quartz mining is also visibly becoming an established branch of industry, and with the introduction of still more effective machinery and cheaper labour, will long furnish employment to a much larger number of persons than at present are engaged in it. Nor are the alluvial mines retrograding; the companies on the Deep Lead, Lower Huntly, employ a large number of miners, but great apathy is evinced in prospecting alluvial ground. The success of the North Star, the Ballarat, and Bendigo companies, and of Mr T. Britt, has had its effect by instilling some energy into the holders of the extensive tracts of ground held under lease, as two companies are about to work ground, now too long idle, and which under other circumstances would now have been productive. The puddling interest may be said to remain, as it has long been, a steady means of support to the old established puddlers, who, from long local experience, know where to look for still payable patches in the old gullies, but very few new hands now venture on that branch of mining.¹

Dec 1864:

Raywood Division

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	2,180	100	2,280
Quartz miners	300		300
Total	2,480	100	2,580

The machinery is as follows:

Alluvial Mining:

Puddling mills, 45 at work

Quartz Mining:

Steam engines, 2 at work, 24 stamp heads, 24 hp

Quartz mining: The development of quartz reefs in the district has steadily progressed during the past quarter. An encouraging feature in this description of working is the ascertained fact of the stone being auriferous at the respective depths of sixty-four (64) and eighty (80) feet, the greatest depth yet reached here. This has proved the case on the Coulter's and Pioneer Reefs; the latter is situate to the eastward of the Coulter and Christmas line. Several surface discoveries of auriferous stone have been made, which are being energetically tested. The most promising of these appears to be at Kamarooka, about twelve miles N by E of Raywood, a quantity of stone from which will be tried here this week. At Sebastian, two new quartz-crushing machines are in course of erection by companies having acquired mining leases. Alluvial Mining - No new discovery of alluvial has taken place in the immediate vicinity of Raywood. Elysian Flat, Glenlynden, and Prussian Gully about a stationary population. The yields from this locality vary considerably, owing to the patchy nature of the ground. The discovery of rich matrix at Kamarooka has attracted considerable attention amongst alluvial miners, and extensive prospecting is being carried on in the locality. Gold has been obtained in small quantities, in one instance at a depth of forty (40) feet, and it is not improbable that a rush of some importance may shortly taken place in the neighbourhood. Note - On the 22nd August 1864, Mr Mining Registrar Emmett forwarded a report to the Honourable the Minister of Mines, stating that two or three rushes had taken place in the locality of Neilborough, Elysian Flat, bordering upon the Whipstick. The sinking was from surface to 50 feet; about 150 ounces per week were then being obtained from these rushes.²

1865:

Whipstick - Early in 1865 and again late in the year large areas of the old Whipstick were burned by bushfires and a number of reefs were discovered in the cleared areas. In 1868 a reward of £25 was paid to H. Bolle for a new discovery in the Whipstick in June of that year, in what became Bolles Gully, situated between Red Jacket and Snowball gullies, and the latter place was profitably re-worked, at the rush, June - September 1868.³

1 Mining Surveyors' Reports, December 1864
 2 Mining Surveyors' Reports, December 1864
 3 Flett, 1979, p250

1865+: Coliban system: scheme to tap the Coliban head-waters. The scheme was the first undertaking of such magnitude in the colony, and hesitancy marked its actual commencement. However, the urgency of its need was clearly demonstrated during the drought of 1865 when the reservoir at Big Hill ran dry and water had to be carted from Runnymede on the Campaspe in 400 gallon tanks, and delivered about the township by water cart. Progress was slow. By May 1866 work had almost come to a standstill; the contractors were suing the Government ... [the scheme became a political football] ...with charges and counter-charges of inefficiency and political corruption. It was already clear that the estimates of the Select Committee were wildly astray. It was also becoming increasingly clear that the project posed complex engineering problems beyond the capabilities and experience of the colony's engineers. It was not until 1869 that work on it got under way again.¹

1865: Whipstick: In February 1865 one of 350 ounces came to light at a depth of 2 1/2 feet; another of 190 ounces was found the same month by a lad, Jeremiah Fullerton. Later in the decade, a golden lump of 275 ounces was unearthed by a German digger, Jacob, in Splitters Gully. Despite such rewards and such tempting promise The Whipstick remained elusive, yielding its nuggetty riches unpredictably²

1865:1873:In 1873 nine mines were working on the line whose reefs plunged away directly below the traffic flowing along Pall Mall. Most important of them was Latham and Watson's Great Extended Hustlers formed in 1865. Against an expenditure of £130,000, one reef alone, between the 400 and 600 foot levels, had returned the owners over £500,000. From their No. 30 reef they had consistently secured 100 ounces to the ton. In 1870 the market value of their mine was £14,000. When the No. 36 reef was cut in the 463 foot level, it rose within weeks to £560,000.³

March 1865:

Kangaroo Flat Subdivision [H C Campbell]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	900	700	1600
Quartz miners	1200		1200
Total	2100	700	2,580

The machinery is as follows:

Alluvial Mining:

Puddling mills, 100 at work, 400 idle

Quartz Mining

Steam engines, 19 at work, 16 idle, 453 stamp heads, 795hp

Total value of machinery £80,500

Square miles of alluvial ground, 5

No of distinct auriferous reefs, 57

During the quarter the exceedingly dry weather has seriously affected mining ... Indeed alluvial mining is almost at present at a standstill, and several engines are now idle for want of water; yet the prospects of the quartz reefs have never looked better than they now do, as very recently exceedingly rich stone was struck on several; generally at considerable depths. More powerful machinery is being erected, and a larger amount of capital invested, and companies are being formed with every prospect of success. Hitherto mining has been conducted for the most part on this goldfield in a very imperfect manner, for want of means; there is however a great change taking place in this respect, and reefs that have been abandoned are now again being occupied with most favourable prospects.⁴

1 Cusack, 1973, p136

2 Cusack, 1973, p133

3 Cusack, 1973, p150

4 Mining Surveyors' Reports, March 1865

March 1865.

Eaglehawk Subdivision [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	2940	650	3590
Quartz miners	1493		1493
Total	4433	650	5083

The machinery is as follows:

Alluvial Mining:

Steam engines, 18 at work, 9 idle, 389hp

Puddling mills, 54 at work, 330 idle

Quartz Mining:

Steam engines, 15 at work, 11 idle, 277 stamp heads, 495hp

Total value of machinery £120,000

Square miles of alluvial ground, 4 1/2

No of distinct auriferous reefs, 53

In my last report I stated that the close of 1864 witnessed a decided improvement in the prospects of the various public and private companies of the subdivision, that more powerful machinery was being introduced, more energy and system exhibited in the management of the mines, and that prospecting was being conducted with vigour and judgment. The result is that many rich lodes have been discovered in mines previously worked at a loss, the opening up of payable stone on lines of reef before neglected, and a feeling of confidence that the mines of the district may, with care and economy, become a source of prosperity, both substantial and permanent. These advantages however are almost neutralised by the scarcity of water which has caused a suspension of crushing for many weeks, has thrown many miners out of employment, as well as reducing the usual yield of gold. There are few that are not suffering from this prolonged drought, especially among the working classes. Some of the cement crushing machines have obtained partial relief from the water derived from the Grassy Flat Reservoirs, but the majority of the engines, and nearly all the puddling machines, are idle. Of alluvial mining therefore at present there is almost none, excepting among those companies about Huntly, who can afford to go on working and stacking their washing stuff. In quartz mining, things look much better; and although the miners cannot produce much gold, they continue to raise stone in almost all the claims. The Argus, the Nelson, the Johnsons, and the Emu Companies, are now getting up quartz, none of which is expected to yield less than 12dwts per ton ... The St. Mungo Company's last cake was of 265oz., the Argus', 161ozs.; and very lately the Pegleg Company struck stone of very great richness. The Eagle and the Catherine Reef United Companies are taking advantage of their idleness to make additions to their machinery ... Among quartz miners therefore there is no cause for despondency, and it is also gratifying to find that the yields of gold do not diminish with depth, or being below water level. On the whole the quartz mines of the district show the reverse of a falling off¹

March 1865:

Raywood Division [E N Emmett]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	1400	50	1450
Quartz miners	150		150
Total	1550	50	1600

The machinery is as follows:

Alluvial Mining:

Puddling mills, 45 idle

Quartz Mining:

Steam engines, 2 idle, 26 stamp heads, 24hp

Total value of machinery £6,850

Square miles of alluvial ground, 2 1/2

No of distinct auriferous reefs, 13

All the dams and water-holes are dry, and the two steam engines and 45 puddling mills are idle ... One of the steam engines has been removed for want of water. The population has considerably decreased, being driven away for want of water. A large portion of the Whipstick Scrub has been burnt, and quartz reefs may be seen cropping out all over, but no prospecting or work can be done for want of water; none for domestic purposes even.²

1 Mining Surveyors' Reports, March 1865

2 Mining Surveyors' Reports, March 1865

June 1865:

Kangaroo Flat Subdivision. [H C Campbell]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	900	700	1600
Quartz miners	1200		1200
Total	2100	700	2800

The machinery is as follows:

Alluvial Mining:

Puddling mills, 150 at work, 350 idle

Quartz Mining:

Steam engines, 23 at work, 16 idle, 513 stamp heads, 845hp

Total value of machinery £85,000

Square miles of alluvial ground, 6 3/4

No of distinct auriferous reefs, 59

A great deal of quartz has been raised, but want of water has compelled many crushing mills to stop. Many abandoned reefs are now being taken up again, and likely to prove remunerative, in consequence of better facilities for carting materials and the reduced price of crushing. The continued scarcity of water has seriously interfered with mining operations, causing a stoppage of several crushing mills, and also preventing puddling to a great extent.¹

June 1865:

Eaglehawk Subdivision. [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3100	570	3680
Quartz miners	1317		1317
Total	4427	570	4997

The machinery is as follows:

Alluvial Mining:

Steam engines, at work 22, idle 6, 225 stamps, 311hp

Puddling mills, 237 at work, 87 idle

Quartz Mining:

Steam engines, 23 at work, 3 idle, 289 stamp heads, 547hp

Total value of machinery £120,000

Square miles of alluvial ground, 6 1/2

No of distinct auriferous reefs, 58

The want of water has had a disastrous effect on the returns of various mines. The returns from companies enabled to work, show that the reefs are not getting poorer, and in many instances from the deepest levels, the richest stone has been obtained. There is a greater tendency to amalgamate, as miners are conscious that large areas of ground and powerful machinery are necessary where the reefs are poor. Small claims, unless enormously rich, will not pay to sink shafts to any depth; and on Windmill Hill line, where the claims are very small, the cost of separate shafts and drives would be uneconomic. These considerations have induced the formation of many new companies, while the old ones maintain their reputation by raising as rich stone as formerly. Among the latter may be classed the Nelson, which has maintained an average fortnightly return of 120 oz. At 300ft the St. Mungo Company got some very rich stone, from 3 1/2 tons of which 190ozs. of gold were retorted. On the Windmill Hill line the Cinderella, the Anglo-German, the Kent, Buckie and Co. still continue as good as ever; and the Emu and Johnson's Reef Co's have had very rich stone, in some instances yielding 100ozs. of gold from 8 tons of quartz. Notwithstanding the addition to the machinery, amounting now to 44 heads of stampers, the United Claimholders Co, Catherine Reef, had poor returns and the works lie idle for want of water. The Star Reef Co is about to put up a 60hp engine and powerful crushing plant. No improvement has taken place in the Sailor's Gully Co; and the new reef in the Eagle Co has disappointed. The Argus Co is sinking a shaft 400ft deep. The Peg-Leg Co has been getting large returns, and at 130ft immense bodies of quartz were discovered. The Prince of Wales Co and many others are paying expenses. Many new reefs are being opened up [including] Black Forest Reef. In Huntly the deep lead is still worked vigorously. The North Star, the Ballarat and the Cambridge Co's afford profitable employment both for labour and capital. The Lower Huntly Deep Lead Co has commenced work, and some miners persevere in private claims.²

June 1865:

Raywood Division. [E N Emmett]

The total number of miners is as follows:

1 Mining Surveyors' Reports, June 1865
2 Mining Surveyors' Reports, June 1865

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	1300	50	1350
Quartz miners	150		150
Total	1450	50	1500

The machinery is as follows:

Alluvial Mining:

Puddling mills, 8 at work, 37 idle

Quartz Mining:

Steam engines, 3 idle, 36 stamp heads 36hp

Total value of machinery £7,650

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 13

An engine and stamp heads has been constructed at Kamarooka during the quarter, and will, so soon as rain comes, be constantly employed, many tons of quartz being now at grass ready for crushing principally from the apparently rich reefs known as Pembroke Castle, Jones, and Doubtful. A race of 3 miles is being constructed at Kamarooka, to lead water gathered from the adjacent open area to the engine just erected. Auriferous discoveries on the site of the present township of Raywood in November, 1863, cause a considerable rush, eventuating in the establishment of a borough, including the township of Neilborough (Elysian Flat). The continuous drought of the year 1864 and up to June (1865) paralysed alike the exertions of puddlers, quartz miners and alluvial miners, and doubtlessly retarded new discoveries.¹

Sept 1865:

Kangaroo Flat Subdivision. [H C Campbell]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	800	700	1500
Quartz miners	1250		1250
Total	2050	700	2750

The machinery is as follows:

Alluvial Mining:

Puddling mills, 170 at work, 340 idle

Quartz Mining:

Steam engines, 28 at work, 15 idle, 549 stamp heads 933hp

Total value of machinery £90,000

Square miles of alluvial ground, 6 3/4

No of distinct auriferous reefs, 60

The continued want of water has been the cause of several crushing mills being obliged to stop. New machinery is now being erected, and there is reason to hope that a much greater quantity of stone will be raised; from the judicious outlay of capital, working expenses reduced and many of the abandoned reefs will again be worked with advantage.²

Sept 1865:

Eaglehawk Subdivision. [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3054	570	3624
Quartz miners	1300		1300
Total	4354	570	4924

The machinery is as follows:

Alluvial Mining:

Steam engines, 24 at work, 1 idle, 237 stamps, 319hp

Puddling mills, 252 at work, 73 idle

Quartz Mining:

Steam engines, 24 at work, 5 idle, 237 stamp heads 442hp

Total value of machinery £130,000

Square miles of alluvial ground, 6 1/2

No of distinct auriferous reefs, 64

The quartz reefs are capable of being profitably worked at greater depths than supposed, as, in some instances, payable stone has been got 200 feet below where the first reefs ran out. The Eaglehawk division maintains its pre-eminence. The St. Mungo line is yielding better stone than at any time. In the Star Reef Co's ground better stone has also been found, and when the more powerful machinery

¹ Mining Surveyors' Reports, June 1865

² Mining Surveyors' Reports, Sept 1865

contracted for is erected, the mine will be as prosperous as any other on the line. The United Claimholders Co on the Catherine Reef ... has again come onto payable quartz ... The returns of the Prince of Wales and Peg-Leg companies show that they still hold a good position; and the Eagle batteries (24 stamps) are constantly engaged in crushing stone from numerous private claims. The claims on Windmill Hill are producing as much gold as ever, among which the Cinderella Co is averaging 500oz. per month. The Lower Huntly Deep Lead is being successfully worked, and numerous miners now find profitable employment in ground which, before the introduction of machinery, was lying waste. With the exception of the above, alluvial mining on this field occupies a very subordinate position, a quantity of gold is nevertheless still extracted from the soil by the unremitting exertions of puddlers, and the Chinese. Many of the latter now own puddling machines, and make a good living out of ground long supposed to be worthless by Europeans.¹

Sept 1865:

Raywood Division [E N Emmett]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	710	50	760
Quartz miners	150		150
Total	860	50	910

The machinery is as follows:

Alluvial Mining:

Puddling mills, 8 at work, 37 idle

Quartz Mining:

Steam engines, 5 at work, 54 stamp heads 52hp

Total value of machinery £10,350

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 15

Two new engines have been erected - one at Sebastian, on the Eureka Reef, about a mile south of Sebastian, having 12 stamp heads, 1,000 tons on grass. Shafts are down 50 to 120 feet, with quartz averaging 4ft thick. The cost of the engine and buildings is estimated at £1,800. The other engine is in the Whipstick, a Huntly Roads; 8hp, with 6 stamp heads. The reef is named the Shamrock. The new engine erected at Kamarooka, is now in full work. The owners constructed two dams 3 miles from the engine, and conduct the water in an open race; the reservoirs being large, the rainfall will enable work to be done all year. A large quantity of quartz is at grass at Kamarooka; about 20 claimholders cast lots for the order of crushing. Nine new claims have been registered: 1, Balle-Balle Reef, 80 yards, Scotchman's Gully, Old Whipstick 2, Alexandra Reef, 120yds, North Sebastian 1, Nuggetty Reef, 80yds, Elysian Flat 4, Barkly Reef, 361yds, Elysian Flat 1, Somerset Reef, 200yds, Philip's Gully, Whipstick. Three prospecting alluvial claim also registered: Skylark Lead, Old Whipstick, Sebastian Raywood. The reefs at Raywood are actively at work again, awaiting the erection of an engine.²

Dec 1865:

Kangaroo Flat Subdivision. [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	850	600	1450
Quartz miners	1300		1300
Total	2150	600	2750

The machinery is as follows:

Alluvial Mining:

Puddling mills, 30 at work, 300 idle

Quartz Mining:

Steam engines, 33 at work, 29 idle, 686 stamp heads 1202hp

Total value of machinery £140,000

Square miles of alluvial ground, 7

No of distinct auriferous reefs, 75

By good management the poorest of our reefs (some of which have been abandoned for years) now pay for working, and it is generally considered that mining affairs were never more healthy than at present. An inducement to sink to greater depths, and proof of the stability of our mines, is that the best returns this quarter are principally from quartz from the deepest levels, where in some cases the reefs are increasing in size and richness. During the past 3 months prospecting claims have been taken up on: Wallaby Reef, near Smokey Creek; Frederick's Reef, near One Tree Hill; Sleeping

¹ Mining Surveyors' Reports, Sept 1865

² Mining Surveyors' Reports, Sept 1865

Beauty Reef, Tipperary Gully; Provincial Reef, Kangaroo Flat; Circus Reef, Crusoe Gully; and Dry-Wet Reef, near Diamond Hill. Amongst those who have erected machinery are the: Prince Alfred Company, Victoria Reef; Albion Company, Sheepshead Reef; Baltimore Company, Baltimore Reef; Golconda Company, Glasgow Reef; Try-Again Company, Wellington Reef; and the Whip Reef Company, Phillips Reef Company, North Bird's Reef Company, Adelaide Gully Company, Kangaroo Gully Company, Bedell and Company, and Crusoe Gully Company, Crusoe Gully. The reefs contribute nearly all the water for crushing purposes, which shows a great benefit from pumping machinery, but rain-water is required for domestic purposes, and for alluvial mining, which has been suspended because of the drought.¹

Dec 1865:

Eaglehawk Subdivision. [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3156	570	3726
Quartz miners	1180		150
Total	4336	570	4906

The machinery is as follows:

Alluvial Mining:

Steam engines, 22 at work, 3 idle, 242 stamps, 363hp

Puddling mills, 63 at work, 229 idle

Quartz Mining:

Steam engines, 15 at work, 16 idle, 257 stamp heads 489hp

Total value of machinery £145,000

Square miles of alluvial ground, 6 1/2

No of distinct auriferous reefs, 66

The greater portion of engines that crush stone only, that is, those wholly dependent on rain for water supply, have long ceased, and only those who have reef water are able to work; this supply, in some cases, is failing, and may cause others to lay idle. The result of this drought is that many men lose employment²

Dec 1865:

Raywood Division. [E N Emmett]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	500	50	550
Quartz miners	150		150
Total	650	50	700

The machinery is as follows:

Alluvial Mining:

Puddling mills, 45 idle

Quartz Mining:

Steam engines, 5 idle, 54 stamp heads 52hp

Total value of machinery £10,350

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 16

A very large area of the Whipstick Scrub was burnt by a succession of fires. The prospector now has a fine field from which to select quartz reefs. When rain comes many valuable ones will be secured. Due to no water the mining population has decreased, but absentees are mostly at adjacent squatting stations, particularly to those of Messrs. Wilson, Fenton, Kelly and Raleigh, where they are fencing, well sinking, and making dams. As soon as rain falls they will return to their mining claims.³

1865+:

With the fading of the Whipstick rushes and the opening of new reefs locally, more men were employed in quartz mining than at any time since the 1859-60 boom. At the end of the decade there were some 140 registered companies, collectively representing more than 2,500,000 shares with a nominal value of £2,681,298. At least a third of the companies were using steam-operated winding and crushing machinery, most of it manufactured locally.⁴

1 Mining Surveyors' Reports, Dec 1865

2 Mining Surveyors' Reports, Dec 1865

3 Mining Surveyors' Reports, Dec 1865

4 Cusack, 1973, p134

1865+: Despite the Whipstick rushes, more than 60 per cent of the gold produced by the Bendigo Field in the late sixties was derived from quartz mining. If management and organisation had been better, the percentage would probably have been higher. No single factor so retarded the growth of quartz mining as the inadequate size of claims and the reluctance of claim-holders to consider amalgamation, although by the mid sixties there were signs of change. Capital began trickling back into the Sandhurst mines and attention was being given to finding new reefs. New mining companies made their appearance and established companies, such as the Catherine and Latham and Watson's installed new machinery. In April 1865 Koch installed a 50hp engine and battery of 44 stampers.¹

March 1866:

Eaglehawk Subdivision [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3140	500	3640
Quartz miners	1291		1291
Total	4431	500	4931

The machinery is as follows:

Alluvial Mining:

Steam engines, 16 at work, 9 idle, 224 stamps, 343hp

Puddling mills, 47 at work, 237 idle

Quartz Mining:

Steam engines, 18 at work, 15 idle, 277 stamp heads, 528hp

Total value of machinery £145,00

Square miles of alluvial ground, 6 1/2

No of distinct auriferous reefs, 67

At no time has this goldfield endured such misery as at present, from the lack of water. In Eaglehawk only one engine is going (viz. the Eagle Company's), and thousands of tons of quartz are waiting rainfall sufficient to fill the dams and enable crushing to be resumed. The Catherine Reef, the Clarence Reef, and Wellington and the Peg-Leg co's, have plants standing idle, and hundreds of men are still, unemployed. The North Specimen Hill Co and the Argus Co had satisfactory returns from the stone they were able to crush. The Star Reef Co completed their machinery - the most powerful in the district. The Eagle Co is vigorously prospecting; the shaft is down to 500feet. In the Nelson's, the St. Mungo, and other of the old companies, there is little change to report. The Johnson's Reef Co is raising good stone of late ... The Undaunted Company, Dead Horse Reef, Napoleon Gully, recently came upon rich quartz, and this portion of the subdivision, hitherto neglected, will be thoroughly tested. Alluvial mining is almost at a standstill ... The Chinese, being mostly alluvial miners, are in the utmost distress, there being no water for sluicing or puddling.²

March 1866:

Raywood Division. [E N Emmett]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	500	50	550
Quartz miners	150		150
Total	650	50	700

The machinery is as follows:

Alluvial Mining:

Puddling mills, 5 at work, 40 idle

Quartz Mining:

Steam engines, 2 at work, 4 idle, 66 stamp heads 62hp

Total value of machinery £11,350

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 16

A seasonable rainfall took place in March, sufficient to enable some of the engines and puddling machines to work. Three claims in the Whipstick (a new reef) have been registered.³

June 1866:

Kangaroo Flat Division. [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	780	600	1380

1 Cusack, 1973, p133

2 Mining Surveyors' Reports', March 1866

3 Mining Surveyors' Reports, March 1866

Quartz miners	1350	2	1352
Total	2130	602	2732

The machinery is as follows:

Alluvial Mining:

Puddling mills, 220 at work, 20 idle

Quartz Mining:

Steam engines, 61 at work, 8 idle, 739 stamp heads, 1286hp

Total value of machinery £164,100

Square miles of alluvial ground, 7

No of distinct auriferous reefs, 79

Great activity has prevailed in mining operations in consequence of our having a supply of water. Nearly all the crushing machines have been in full work, and the quartz in many instances, especially from the old lines, the New Chum, Victoria, Hustler's, and Comet have yielded most satisfactorily, and at depths varying from 200 to 350 feet. The Hustler's Reef Company are adding crushing machinery to their plant and in many instances winding and pumping engines are being erected, in order to abridge labour as much as possible, and facilitate the working of the mines. The Energetic Company have recently opened a reef on the Hercules line (Victoria Reef), which yields splendidly and they are about to erect a winding and pumping engine ... The Great Extended Hustler's Reef Company are also erecting powerful machinery on their claim. A great many companies have resumed operations since water was obtained, and some contributed largely to our returns; but many of the new companies as yet have been anything but successful. New prospecting claims - Dicken's Reef, head of Long Gully; Willie Davis's Reef, head of Kangaroo Gully; Sherwood Reef, Kangaroo Flat, and Don Juan Reef, near the Big Hill. Alluvial mining, though not so prosperous as formerly, affords employment to a considerable number of persons, but a great many puddling machines have been abandoned. No tailings have been crushed, but large quantities have been purchased for the purpose of subjecting them to Brissendon's patent for the extraction of gold, which will, if successful, afford employment to a great number of persons, and add largely to the resources of the district.¹

June 1866:

Eaglehawk Division. [G W Hart]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3210	500	3710
Quartz miners	1242		1242
Total	4452	500	4952

The machinery is as follows:

Alluvial Mining:

Steam engines, 28 at work, 249 stamps, 365hp

Puddling mills, 171 at work, 36 idle

Quartz Mining:

Steam engines, 33 at work, 4 idle, 307 stamp heads, 599hp

Total value of machinery £150,000

Square miles of alluvial ground, 6 1/2

No of distinct auriferous reefs, 67

The stampers are again at work, and hundreds of men, formerly idle, now find employment. The main lines of reef exhibit little change; and even those claims that are not at present payable, are not abandoned because of the temporary barrenness in the quartz. It now seems a known fact that machinery, if required, should be of a powerful kind, capable of reducing large quantities of stone, and making poor reefs pay, and the plant recently erected by the Star Reef Company has been of that description. The Windmill Hill still yields largely, and the returns from that line would receive a marked increase, were it not that many of the richer claims suffer from defective drainage. The Johnson's and Nelson reef companies are still working payable lodes, at both instances at great depths. The Wetherall Reef is paying well, and Shellback, Clarence, and Robin Hood companies have very recently come upon good stone. The North Specimen Hill, the Eagle and the Great Extended, also the Argus, companies are busily engaged sinking and preparing to open up their mines at very considerable depths. In Sailor's Gully many private companies are worked with varying success. The Peg-leg company is in full work ... No change to report in the Prince of Wales or St. Mungo lines. Huntly has been making rapid strides since the introduction of machinery there, and the deep lead in the neighbourhood now furnishes employment to a large number of persons. The puddling machines, now greatly reduced in number, are in full work; but alluvial mining has ceased to be of any importance in this division.¹

June 1866:

Raywood Division [E N Emmett]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	500	50	550
Quartz miners	200		200
Total	700	50	750

The machinery is as follows:

Alluvial Mining:

Puddling mills, 25 at work, 15 idle

Quartz Mining:

Steam engines, 6 at work

Total value of machinery £11,350

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 20.²

Sept 1866: The Advanced Company displayed one of 1,048 ounces secured from 629 tons of stone. From their bonanza on the Hustlers's Line Latham and Watson, in six weeks between mid-September and the end of October, took £12,000 worth of gold.³

Sept 1866:

Kangaroo Flat Division. [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	750	560	1310
Quartz miners	1340		1340
Total	2090	560	2650

The machinery is as follows:

Alluvial Mining:

Puddling mills, 225 at work, 18 idle

Quartz Mining:

Steam engines, 49 at work, 20 idle, 709 stamp heads 1308hp

Total value of machinery £163,900

Square miles of alluvial ground, 7

No of distinct auriferous reefs, 80⁴

1 Mining Surveyors' Reports, June 1866

2 Mining Surveyors' Reports, June 1866

3 Cusack, 1973, p134

4 Mining Surveyors' Reports, Sept 1866

Dec 1866:

Sandhurst Division. [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3,860	1060	4920
Quartz miners	2482		2482
Total	6342	1060	7402

The machinery is as follows:

Alluvial Mining:

Steam engines, 38 at work, 3 idle, 265 head of stamps, 391hp

Puddling mills, 396 at work, 44 idle

Quartz Mining:

Steam engines, 77 at work, 21 idle, 998 stamp heads, 1867hp

Total value of machinery £311,800

Square miles of alluvial ground, 13 1/2

No of distinct auriferous reefs, 130

Re crushing yields: seventeen others, from whom I have endeavoured to obtain returns, have not yet made them out; but they must have crushed about 20,000 tons, yielding about 15,000ozs. of gold, as a great portion of it was the best quartz in the district. Quartz mining operations have improved; but the district still suffers from over speculation, many promising lines of reef being unworked for want of capital to prospect them. The most satisfactory feature is that the quartz on many of the main lines is richer at depth than near the surface. The Hustler's line, presents an instance of this fact; the yield from Messrs Latham and Watson's claim, at 450 feet, is said to be richer than any previous returns from the mine. On this line, the Hustler's Reef Co, after sinking 400 feet, put in a drive and cut the reef, which looks well. The operations of this company have enabled them to discharge a liability of some thousands of pounds incurred in the erection of their new machinery. The Comet Co's stone is improving ... Further north, the Alabama Coy is erecting a pumping, winding and crushing machine, and sinking a new main shaft 300 ft ... The Sophia and Redan Co are pushing forward their drives ... Further north again, Cooper and Co have struck the reef at about 100 feet, yielding about 6ozs. to ton. The South Hustler's Co is at work, but without any marked result. Perseverance Reef - Most of the claims on this line are doing well. Windmill Hill - a few claims working and doing well, but some of the richest are at present lying idle for want of drainage. Johnson's Reef - The Johnson's Reef Gold Mining Co have a fine reef at 422 feet. Wetheral Reef - In Messrs Collman and Tacchi's claim they have come on a reef at 400 feet, which promises to yield 120zs. to ton. The Star Reef Co and Price of Wales Co have suspended operations. Eagle Reef - The Great Extended Eagle Co had splendid returns. Specimen Hill - The North Specimen Hill Co and Argus Co doing well. St Mungo and Devonshire Reefs present the most marked improvements. The St. Mungo Co crushed 3oz. to ton. The Lady Barkly Co also had rich yields. Catherine Reef - The returns of the Catherine Reef United Co improved, and others on the same line have no reason to complain. Moon Reef - The Robin Hood Co had regular and payable crushings for some time, and other companies in the vicinity have good prospects. The Peg-leg Co came on a new run of stone, which promises well. New Chum Reef - All the claims on this line are giving good returns. What is commonly termed the third reef has shown itself wonderfully rich. Victoria Reef - Nearly all on this line are doing well. The Energetic Co, the Gold Mines Co, the Advance Co, the Adventure Co, the Try-me-Well Co, and Ballerstedt and Son, are most fortunate. Specimen Hill, Long Gully - The Indefatigable Co have a great body of stone ... They have their own crushing machine. The Agmemnon Co is opening up the mine. Garden Gully Reef - The Garden Gully Co have been erecting crushing machinery ... They expect to cut the second reef shortly. Caledonia Reef - The Alliance Co removed the machinery from the Frenchman's and are erecting it on this reef, where McEwan and Co obtained such rich results. Sarnia Reef - The Sarnia Reef Co have a well defined reef at 90feet. Bird's Reef - The Bird's Reef Co are working with better results, but the North Bird's Reef Co have been idle for some time. Adelaide Reef - The Adelaide Gully Co wound up, and disposed of their plant, which has since been removed. Fruling Reef, Whipstick - The prospectors have discovered a reef about one foot thick. Crusoe Reef - The Crusoe Gully Co struck gold at the bottom of the water shaft, just as they had decided on stopping the works. Brown's Reef - The Break-o'-Day Co ... obtained payable quartz. Quartz mining - A good drainage bye-law is required, the want of it is a serious drawback to mining. This, with the presence of more capital and a more economical system of working, would place the reefs of Bendigo in a favourable position. Quartz prospecting claims - Rechabite Reef, Iron Bark Gully; another on a reef about one mile north of Wallaby Reef, Shelbourne; on the Monmouth Reef, near Eaglehawk; one on Children's Reef, near Sailor's Gully; but payable quartz has not yet been found. Huntly may be considered the head quarters of alluvial mining. The substantial plants and dwellings now erected on the deep lead, attest the prosperity of that portion of the division.¹

Dec 1866:

Raywood Division [E P Virtue]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	500	50	550
Quartz miners	200		200
Total	700	50	750

The machinery is as follows:

Alluvial Mining:

Puddling mills, 20 at work, 25 idle

Quartz Mining:

Steam engines, 5 at work, 2 idle, 60 stamp heads, 70hp

Total value of machinery £12,500

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 20

A new lease of ground has been applied for on the Welbaum Reef.

Hart's patent machine is at present stopped for want of water; it is the general opinion among the miners of this district that it has proved itself to be a complete failure.¹

March 1867:

Kangaroo Flat Subdivision [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	850	600	1450
Quartz miners	1300	2	1302
Total	2150	602	2752

The machinery is as follows:

Alluvial Mining:

Puddling mills, 80 at work, 250 idle

Quartz Mining:

Steam engines, 39 at work, 26 idle, 712 stamp heads, 1242hp

Total value of machinery £145,500

Square miles of alluvial ground, 7

No of distinct auriferous reefs, 75

This subdivision has suffered much less than Eaglehawk from the absence of water, consequent upon the fact of several of the companies being able to supply from their water shafts; but many of the machines having to depend upon rainfall, are still idle. The main lines of reefs continue to yield well and steadily, and in many instances better returns have been obtained at great depths from second reefs than the first reef gave. The Hustler's, North Hustler's, Great Extended Hustler's, and the Comet Company's claims have yielded largely, and proved how rich our quartz lodes are at the greatest depths. On the Victoria Reef, the Adventure Company, the Advance Company, and the Price Alfred Company, and other private claim, prove a source of great profit to their owners; while the Energetic Company, lately crushed 1,294ozs. from 55 tons of stone, a result hitherto unsurpassed in this district. This result was obtained from the Hercules Reef, cut at a perpendicular depth of 305ft, in the Energetic's ground. Most of the claims on the New Chum are yielding well, and prospecting is being actively carried on by the Young Chum Company, Alliance Company, and Great Britain Company. During the past quarter prospecting claims taken up on the following new reefs; Adam's Reef, Golden Gully; Railway Reef, Tipperary Gully; Mill's Reef, in Maiden Gully; and Prussia Reef, Myers' Flat; and a payable reef found on private property at Lockwood.²

1867: Whilst Sandhurst bewailed the lack of a permanent water supply and feared for the crippling effect on local mining, curiously, the industry itself was beset by an over-abundance of water below. By 1867 the effects of an absence of legislation covering underground drainage were assuming serious proportions ... Claimholders whose shafts had not yet reached the water-line or were not affected by water, were not prepared to contribute towards the continuous pumping as was required by those shafts badly effected by water such as the rich claim of Lazarus and Gibbs on the New Chum Line. The owners had taken £80,000 worth of gold from it, but after reaching a hundred feet or so below the water-level it had to be temporarily abandoned because adjacent claim-holders refused to contribute towards drainage. As a result, the whole line soon became flooded and unworkable, and lay idle for two years.³

1867: Raywood. The Nil Desperandum Company was soon in need of a crushing plant. At first their quartz was carted to Elysian Flat and crushed at Robert's battery. In mid-1867, the company purchased a set

¹ Mining Surveyors' Reports, Dec 1866

² Mining Surveyors' Reports, March 1866

³ Cusack, 1973, p136

of stamps from the Yorkshire Company, Bendigo ... The function opening the Nil Desperandum crusher took place on 25 October 1867.¹

1867: The Myers Creek Rush. Among the first gullies worked on Bendigo were Peg Leg and Sailor's Gullies, early in 1852. Peg Leg commenced near Eaglehawk, continuing in a north-westerly direction towards Myers Flat. A mile-and-a-half from Eaglehawk, Peg Leg was joined by Sailor's Gully. Close to Eaglehawk the sinking in Peg Leg Gully was only six feet and less, but near Myers Flat it deepened to 16 feet and over. A short distance below the junction of these gullies, Gold Commissioner C. Rudston Read, in 1852 set up a Government Camp ... After rain, the water drains from Myers Flat into Myers Creek, and alluvial mining along this creek was carried on spasmodically for some years, culminating in a short-lived but extensive rush in 1867. As mining extended northwards for several miles, sinking became much deeper, in places up to a hundred feet. This rush became known as the Myers Creek Diggings. Although this locality produced no nuggets, and was by no means the richest in or near the Whipstick, it supported perhaps the greatest number of hard-drinking miners of any diggings around Bendigo. In a short duration of less than 6 months, at least 28 hotels and 65 beer shanties catered for its thirsty diggers. In September 1866, a rush took place on the lower end of Myers Flat in the vicinity of the Myers Flat Company's paddock. This paddock was ground originally taken up under Pre-emptive Right and previously known as Campbell's. By mid-September some 300 miners were on the ground, but only half of this number were sinking shafts. As the digging was fairly deep, to 25 feet, there was much shepherding. This rush was short-lived and the area was soon deserted. Among those who persevered hopefully with their prospecting were Densely & Party. It was almost a year later, In June 1867, that this party [was successful] ... By June 24, 140 men were on the spot ... The first shafts bottomed at between 30 and 40 feet, but not all were payable. In spite of the uncertainty, July brought many miners, some from Ballarat. Many Chinamen arrived ... In the first week of July, Hants & Co. struck wash dirt at a depth of 40 feet. Although a narrow shaft, 3-1/2ft by 2ft, they fossicked an ounce of gold from the bottom. The news spread like wildfire, and by 9 July it was estimated that 1,000 miners were on the field. Difficulty was experienced in finding the lead ... Another problem was that the hard layers of cement encountered in many of the shafts ... As the rush progressed it was discovered that in some claims the cement contained payable gold ... On 16 July, over 2,000 people were present, and the lead having been traced for some 300 yards below the prospectors' claim, "an immense making of claims" resulted ... At the beginning of August, a large number of miners from the Alexandra Diggings arrived at Myers Creek ... By mid August the population had reached its highest, estimated at 4,000, of whom 2,500 were miners, including between 500 and 600 Chinese. It was not until the end of August that the richest claims came into production ... Towards the close of August claims were spreading northwards for over 1-1/2miles, the sinking between 70 feet and over ... For treating the washdirt, some 20 toms were set up in Myers Creek ... In mid August, an enterprising party from Dunolly, Trounce Bros. and Attrell Bros. obtained a mining grant from Mr. Warden Mollison to construct a dam at Myers Creek. This was made on one side of the bed of the creek, covering an area of 316 yards, capable of holding 4,000,000 gallons of water. This party also constructed 2 puddling machines, which together with pumps and cradles were estimated to cost £600 ... During the busiest period on Myers Creek, the two puddling machines treated up to 500 loads of washdirt per week ... In August ... a reservoir site was chosen ... By October, it was completed, but complaint was made of a serious leak in the dam-bank... Maybe it did not matter so much now, for the Rush was declining... Following the failure to find payable ground in the deeper ground, diggers began leaving in September ... Towards the close of November it was reported, "The diggers are leaving in mobs daily..."²

1 Perry, 1975, p129

2 Perry, 1975, pp 149-163

March 1867:

Sandhurst Division. [N G Stephens]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	3800	1030	4830
Quartz miners	2474		2474
Total	6274	1030	7304

The machinery is as follows:

Alluvial Mining:

Steam engines, 27 working, 4 idle, 265 head of stamp, 391hp

Puddling mills, 380 at work, 40 idle

Quartz Mining:

Steam engines, 74 at work, 23 idle, 970 stamp heads, 1848hp

Total value of machinery £310,000

Square miles of alluvial ground, 13 1/2

No of distinct auriferous reefs, 133

With regard to the quartz, I believe the average of all that has been produced would have been at least 12dwts; but I cannot obtain any information from 3 companies, who have crushed about 7000 tons of the richest quartz in the district. Two of them crush from their own claims only, and object to give any information. The proprietors of the third (the Endeavour Company) are willing to give it, but the manager, who is a shareholder, will not comply with their request. Since my last report quartz mining exhibits a falling off in the yields on many lines, due, in some measure, to the want of a workable drainage bye-law; and also to the fact, that many companies are not in possession of sufficient funds wherewith to prospect their ground. The main lines continue to yield satisfactorily. Regular and highly remunerative returns continue to be given by almost all the claims on the Victoria and New Chum Reefs, most of which have been worked continuously for the last 12 years. On the Victoria Reef, Ballerstedt's and the Adventure Company's claims are yielding splendidly, and the Energetic Company's have produced 3,149ozs. in 3 weeks. On the Sheepshead Reef, the Albion Company has just struck a mass of stone well studded with gold. On the Windmill Hill line there is no change. The Johnston's Reef returns have improved. From the Wetherall Reef, Collmann and Tacchi obtained 1,172ozs. of gold for one month's work, at a depth of 330 feet. This has given adjoining claim-holders encouragement to sink deeper. Perseverance Reef - Belt's claim yielding well, giving confidence to other claimholders. The Nelson Reef is yielding indifferently from deep levels. Several companies have struck gold on the St. Mungo and Devonshire line. The Lady Barkly and St. Mungo company's claims are turning out good quartz. The Price of Wales Company report having cut stone at a depth of 320 feet, which gave 22dwts/ton. The Catherine reef has improved of late. Little doing on Star Reef. The failure of the Star Reef Company has discouraged many from investing their money on this line. In Sailor's Gully, the Argus, North Specimen Hill, and Eagle companies are in full work. The stone from the latter is yielding 2oz/ton. The Hustler's Reef is giving good returns. The Comet Company's shaft is down 436 feet. They are getting payable stone. At Golden Square, the Alliance and Great Britain companies have just obtained first-rate prospects. At Kangaroo Flat, mining is looking dull; but the Bird's Reef Company continue working. In Golden Gully, the Whip Reef is the only actively at work. On Brown's reef, the Break-o'-Day Company are sinking their shaft deeper. On Specimen Hill, most of the companies are doing pretty well. The Agmemnon Company has just completed sinking a shaft to 300ft ... Roberts and Company has lately erected a winding engine on their claim. Prospecting claim - Dark Aerial, between Crusoe Gully and the Big Hill. The owners report a yield of 10 1/4ozs. from 7 tons of stone. Another has been taken up on Humels Reef, Red Jacket Gully, but payable quartz has not yet been found on it. Most of the companies at Epsom and Huntly are paying moderately.¹

1867: Whipstick - The lead at Myer's Flat was worked from the earliest days into Campbell's paddock (Weddiker P.R), but the main rush was in 1867, when it was traced from the corner of the P.R. for some miles. Reimers and Co were the prospectors of the later rush.²

¹ Mining Surveyors' Reports, March 1867

² Flett, 1979, p250

1867: New Moon Company - most successful mine of the Moon Reef was the New Moon Co. The mine commenced in 1867, their claim being south and adjoining the Robin Hood Co. Capital was 16 shares of £75 each. In a short time, after only £160 had been called up, payable quartz from 173 feet enabled dividends of £2778 ... In 1870 a registered company was formed with capital of £24,000 ... There were two shafts on the lease, each 280 feet, while work had commenced on a new engine shaft and the erection of a winding plant. The company purchased the Robin Hood's lease and plant in 1878. The Robin Hood shaft became the New Moon main shaft and was eventually deepened to 2,400 feet. The New Moon Co was re-registered in 1886 as a No Liability Co with capital of £12,000 and the mine developed into one of the best-managed mines on the Bendigo goldfield ... This company, at the close of 1906 declared its 200th dividend. From 1878 to 1890 were lean years for the company when many calls were made to shareholders, while for a period of 6 years the mine was let to tributers who crushed 6417 tons for 415 oz ... dividends were paid from 1892 to 1913 ... mine closed down in 1917 Apart from public crushing, the company crushed 545,289 tons of stone during its existence, all dug from its own mine and yielded 230,601 oz of gold, and paid shareholders the sum of £377,400. The former mine was taken over by the Bendigo Amalgamated Co from 1917 to 1922. It was re-opened in 1928 only to close in 1932. Later, cyaniders treated the sand, and this was removed from its original position and dumped across the road into Napoleon Gully.¹

March 1867:

Raywood Division. [E P Virtue]

The total number of miners is as follows:

	<i>European</i>	<i>Chinese</i>	<i>Total for the Subdivision</i>
Alluvial miners	500	50	550
Quartz miners	200		200
Total	700	50	750

The machinery is as follows:

Alluvial Mining:

Puddling mills, 20 at work, 25 idle

Quartz Mining:

Steam engines, 3 at work, 3 idle, 60 stamp heads, 70hp

Total value of machinery £312,500

Square miles of alluvial ground, 50

No of distinct auriferous reefs, 18

Mining is at stand still, due to continued drought. The Nil Desperandum Co, Raywood, is crushing about 400 tons of their quartz at the Eureka engine, Sebastian, seven miles distant. Shaffer and party, and other good claimholders, who have a large quantity of quartz stacked on the surface, are waiting until the crushing machines in Raywood and Elysian Flat commence operations, which cannot be until a heavy fall of rain. A new company called the 'Croesus' has commenced work on a line with the Nil Desperandum Co, who is obtaining good returns.²

June 1867: Sandhurst Division. [N G Stephens]: during the past 3 months, mining has been in a depressed state, partly because some of our quartz claims were not yielding well, partly from the unsettled drainage of reefs question, and partly from the scarcity of money; but prospects appear brighter, and results over the last few weeks were encouraging. Some reefers are unworked due to being flooded, proprietors will not erect machinery without some guarantee or hope of remuneration, and claimholders will not contribute enough to induce them. On some lines the claimholders and machine-holders are endeavouring, by private agreement, to arrange drainage of their claims. A desire is shown to render the new drainage byelaw workable. The Catherine Reef Co are down 440feet; the Comet Co, on the Redan, 450 feet; the Johnson's Reef Gold Mining Co, 475 feet, all with good prospects ... The North Johnson's Reef Co struck a new reef, at a depth of 270 feet. The Hustler's, New Chum, Victoria, Devonshire, Redan, Anglo and Christmas Reefs are yielding well. The 3,149 oz. obtained by the Energetic Co on the Victoria Reef, was from 287 tons, at nearly 340 feet. The prospectors of the Wallaby Reef, Smokey Creek, had a yield of 156 oz. from 165 tons of stone. The proprietors on the Dark Aerial Reef ... have payable crushings, but are not doing much at present. Quartz prospecting claim - new reef, about 1 mile west of the Wallaby, and one on the Try-Again Reef, Emu Creek, but payable quartz not reported. In alluvial mining at Huntley; the claims are yielding steadily, and the field is extending. Some new companies have been formed, and new machinery erected. Prospecting claim at Myer's Flat. The applicants obtained 7dwt of gold from 1 1/2 loads of stuff and the sinking was 36 ft. A small rush has set in there.³

1 Perry, 1975 pp214-227

2 Mining Surveyors' Reports, March 1867

3 Mining Surveyors' Reports, June 1867

June 1867: Raywood Division [E P Virtue]: The rain, which has recently fallen in great abundance, has not only enabled all the quartz miners to have their quartz crushed, but the alluvial miners and puddlers to recommence operations. The Nil Desperandum Company are still obtaining good returns from their mine, though they labour under a great disadvantage in not having machinery on the ground; this difficulty, however, I am informed, is about to be overcome, as tenders have been invited by them for the erection of a 12 or 18 head of stampers.¹

Sept 1867: Sandhurst Division - I have the honour to report an improvement in mining affairs in this division during the past three months. Several new reefs have been opened, and on some old reefs that had been unworked for a considerable time claims have been taken up, and good returns have been obtained therefrom. Although our richest claims have not produced so much gold as in the previous quarter of this year, other claims on the same lines are yielding very rich quartz, amongst which may be mentioned Lazarus' claim on the New Chum Reef, and the Confidence Company's on Victoria Reef; and on most of our reefs better results are being obtained... In my last I reported having registered an alluvial prospecting claim at Myers' Creek. This claim did not prove to be very rich, but several good claims were bottomed near it, and it was thought that a rich lead was discovered. A great rush set in, and in about a month after the prospectors had found gold, about four thousand persons were located there. The sinking was from 30 to 50 feet, and the lead was traced for a considerable distance. A great many holes were sunk, and in many cases with satisfactory results; but the ground was not found rich enough to maintain so large a population, and it is now reduced to about one-fourth of what it was some two months since... At Pottery Flat and Huntley there is not quite so much doing, partly owing to the rush to the Myers' Creek diggings, and partly to the flooding of claims after the late heavy rains; but most of the large companies are doing well and have very good prospects.²

Sept 1867: Raywood Division - ...mining operations in this division have recently been more promising. A very rich reef, the 'Sir Henry Barkly', has been struck at Elysian Flat, and out of a trial crushing of 27 tons, 243 oz was obtained ... Nil Desperandum Company had called for tenders for the purchase of a crushing plant to be erected on their own claim, on the Welbourne reef. I am now pleased to observe that their object has been attained, and its erection will be completed in about four weeks hence. The claim is looking richer than ever, and it is computed that the company have about 1,200 tons of stone ready to be put through when their machinery starts working. George Heckle and party are obtaining good returns from their mine on the Christmas Reef. They have a large quantity of good looking stone on the surface, which the unfavourable state of the weather prevented them from sending to Elysian Flat to be crushed.³

Dec 1867: Sandhurst Division - No account having been kept of a great quantity of quartz and cement that has been crushed, I am unable to furnish a complete return, but there is no doubt that the total quantity of quartz produced this year is little short of 300,000 tons, averaging fully 1/2-oz per ton. With regard to quartz mining in this division, I have the honour to report that the yields for the past quarter are very encouraging: the old reefs are turning out well, and some of the new reefs furnish inducements to prospectors. Of the latter, Wilson's reef, at Marong, and the Friling Reef, Whipstick, have been the most attractive. One crushing from Wilson's claim yielded 6 oz per ton, and another crushing from the same claim yielded over 9 oz per ton. On the Victoria Reef the Victoria Gold Mines Company have just struck a very promising vein. The Energetic Company is opening out on a large body of quartz, showing gold, at their 380 feet level; and the Advance Company has obtained some very rich specimens. American Reef - The American Reef United Company have just crushed 30 tons from their 300 feet level, yielding 70 oz. Pringle's Reef - The Royal Albert Company obtained 400 oz from 330 tons of quartz. Wetherall Reef - Collmann and Company, at their 388 feet level, obtained 64 oz from 43 tons, and has struck a new reef at 450 feet, which, from appearances, promises to be rich. Johnson's Reef - The Johnson's Reef Company are doing well; 36 loads from their 475 feet level yielded 14 oz 3 dwts of gold. Devonshire and St Mungo Lines - The claimholders have been encouraged by a yield of 1-1/2 oz per ton from the Lady Barkly Company's mine. Eagle Reef - The Eagle Mining Company has sunk to a great depth, and their prospects are improving. The Argus Company, on the same line, have obtained 402ozs from 151 tons of stone, at a depth of 300 feet ... New Chum Reef - All the claims on this line are paying well. About a week since the Young Chum Company struck a fine body of stone at the 138 feet level, in which gold is seen freely. The Ellesmere Company's prospects are very good, 134 tons from their 312 and 340 feet levels yielded 111 oz. Lazarus's claim, at 270 feet, is also giving good returns.

1 Mining Surveyors' Reports, June 1867

2 Mining Surveyors' Reports, September 1867

3 Mining Surveyors' Reports, September 1867

Redan Reefs - The Comet Company's shaft is 505 feet in depth, and they are getting payable stone at their deepest levels ... Hustler's Reef - Latham and Watson, Great Extended Company, and Hustler's Reef Company, are getting first-rate stone. Latham and Watson are down 500 feet. The Hustler's Reef Company's main shaft is sunk 473 feet, and the stone from 410 feet level is yielding well. The Great Extended Company obtained 52 oz from 70 loads, at a depth of about 320 feet. Much valuable ground remains idle on account of their [sic] being so workable drainage law, but the owners of pumping machinery are endeavouring to enter into an agreement with the claimholders on some reefs to drain their claims. Quartz prospecting claims have been taken up on the following reefs:- Read's Reef, German Gully; Clyde Reef, Crusoe Gully; Cricket Reef, California Gully; Galatea Reef, near Spring Gully; Summer Reef, Whipstick; Forlorn Hope Reef, Yankee Flat; and the Alfred Reef, near Ironstone Hill. Prospectors have reported having found payable stone on Read's, Clyde, and Auld Reekie Reefs. In alluvial mining the best reports are from Huntly. The Deep Lead Company and Morning Light Company are doing very well. Their success justifies confidence in the deep leads, and has thrown new life into the operations of others in that locality. At Pottery Flat, the North Star Company and a few others have been getting some pretty good stuff. At Myerstown some of the machines are at a standstill for want of water, but Frounce and Company has a good supply, and are kept busy puddling for the public. The following prospecting claims have been registered:- Steer and Company, one mile north of Bullock Creek Pound, 3 feet sinking, obtained 4 dwts per load; Gray and Company, Marong, from 1 to 2 feet sinking, obtained 1-1/2 oz to a tub; Virtue and Company, Bullock Creek, 42 feet sinking, obtained 18 grs. from 3 dishes; and Weightman and Company, Weddel's Flat, 37 feet sinking (10 feet of it hard cement), reported 1 oz to the load.¹

Dec 1867: Raywood Division - ...Nil Desperandum Company - This company has, since my last report, completed the erection of an excellent quartz-crushing machine, of 17-horse power, with pumping-engine and tailings-pump, with offices and necessary attachments of the most substantial character, at a cost of £3,500. The prospects of the mine are most promising, the lode at present working at a depth of 111 feet, being 10 feet wide, the golden indications improving. Thirty-four men are engaged on this claim. At Neilborough, the Elysian Flat Quartz Gold Mining Company have struck some richly auriferous stone. No crushing has, however, yet been made from it. Roberts and Company's Claim, on the Barkly Reef, at Elysian Flat, has improved in richness, and is yielding well at present.. A feeling of much greater confidence in the quartz resources of the division is very perceptible, and a party of miners from Eaglehawk is now arranging for the erection of a crushing machine, for public purposes, at Raywood proper. Alluvial mining is reduced to a minimum - the greater part of those that followed that avocation here having left for some small rushes in the district.²

1867: Marong - Bullock Creek - Marong, about eight miles west of Bendigo on Bullock Creek, became a gold-washing place and the Commissioner's Camp early in 1852, when the water gave out at Bendigo. The station, owned originally by Hugh Glass, was then occupied by the Campbell's, who had the Argyle Inn there. Early in 1853 there was a report of gold discoveries at Bullock Creek 'equal to Bendigo' and there were reported later discoveries in 1854, and 1856. There was a rush there in 1863, when gold was discovered at Yankee Flat by two diggers, House and Belkam. The opening of the field began with the discovery of various rich reefs in 1867; Carter and Wood opened the Duke of Edinburgh Reef, and Henry Wilson opened Wilson's Reef on Wilson's Hill. Other reefs discovered on Wilson's Hill at the time were Mackenzie and Gray's, the Great Britain, Moore's, Simpson's Norich and the Prince Charlie. About the end of October 1867 a party of diggers, Thorpe and Co, began work on what became known as First Gully and Burnt Gully was opened soon after. In December Steer and party got a claim 'one mile north of the pound', also in the vicinity of First Gully, and about the same time J Virtue and R Lovie opened Lovie's Lead, the first of the deep leads at Marong. The party claimed a reward and was paid £75 each. About thirty claims were getting gold at First Gully (about a mile north of Marong today) early in 1868, and two tributary leads, Belcher's and Nardoo, were opened in March that year. Diggers also started in Wood and Carter's paddock, and at Fletcher's Creek, near the pound. By May 1868 there were 1000 diggers at Marong, Duke's Flat was discovered, and prospecting claims were taken out at various places unidentifiable toady. One was Murder Flat, where Hogan murdered Doolin for £500; others were Great Britain Gully, Polworth Hill, and Waler's Hill, Leichardt. Digging declined at Marong after 1868.³

1868: Whipstick. Rush to Snowball area, near Sydney Flat in 1868 was perhaps the last big event in the Whipstick. The sinking was mostly shallow, where 3 nuggets ranging from 28 to 36 oz were found.⁴

1 Mining Surveyors' Reports, December 1867

2 Mining Surveyors' Reports, December 1867

3 Flett, 1979, pp251-52

4 Perry, 1975, p173

1868: The Old House at Home Hotel was a landmark at Sydney Flat in 1868. The hotel outlived all others in the locality, the licence continuing for over a century, and being surrendered as recently as 1970. The building remains. Little more than a mile north-east of this hotel during 1868, a rush, which lasted 6 months, took place. A lad named Fletcher ... obtained a small nugget ... Within a fortnight some 60 diggers were on the ground, and many more small nuggets were found ... *The Bendigo Advertiser* reported on 18 July 1868A week later "The rush at the bottom of Sydney Flat is attracting miners from all quarters, and there is little wonder, for the nuggets are said to be lying close to the surface, like beds of small potatoes". A week later, the shallow diggings extended for 1/2 mile. By August the population was estimated as between 1400 and 1500. The gully, which was first opened up, was named Whipstick Gully. By the end of August 1868, there was "a little township of slab, corrugated iron and calico buildings" with a "main street" [containing] a number of stores and several hotels ... Although payable gold had been proved on this rush there was once again that ever re-occurring problem of Whipstick mining, a lack of water. At first, wash-dirt had to be carted a 1/2 mile at 4 shillings a load to the nearest dam where the owner charged for the use of a tom for washing dirt. A few of the more enterprising diggers constructed their own dams and puddling machines. Many could not afford this. Most miners supported a move to cut a race from the reservoir, which was constructed at Myers Creek during the rush to that area the previous year. This reservoir was some 3/4 miles south-west of the present rush. [Not constructed] By the close of 1868 most miners had left the district - the rush had faded out. Earlier, the diggings had spread westwards from Whipstick gully, where the Snowball Gully the sinking became deeper, and the lead was traced to the edge of fenced land.¹

Mar 1868: Sandhurst Division - ...The chief items of interest are the rich yields from the new reefs at Marong, the finding of several large nuggets, and the rush to alluvial diggings on the Bullock Creek. The reefs at Marong have been turning out better than was at first anticipated, and most of the claimholders are well satisfied with their prospects. Wilson's claim, on Wilson's line, has averaged over 6 oz to the ton, and the quartz they are now crushing promises to be far richer than any previously obtained from that claim. At a depth of 40 feet the reef is well formed, and from 2 to 3 feet in width. Gray and Company are getting out large quantities of stone from their claim on the same line... Several claims on Simpson's and Prince Charlie Reefs are also yielding good payable stone. The want of a good crushing machine has hitherto interfered much with the development of the reefs in this locality. Moore and Company have, however, erected one in their neighbourhood, but they have not sufficient water to work it, so that the miners have to bring their quartz into Sandhurst to be crushed. Victoria Reef - On this reef, the Energetic Company obtained 165 oz from 35 tons, at their 380 feet level. Several other companies have been doing well on this line; but I cannot get any information from the Endeavour Company, who crush from several rich claims; nor from Messrs Ballerstedt and Son. New Chum Reef - Nearly the whole of this line is paying well. Splendid returns have been obtained from Lazarus' and Menzies' claims; and the Ellesmere Company's quartz, at the 275 and 340 feet levels, pays handsomely. Windmill Hill - Some of the claimholders on this line have at last made arrangements for draining the line, by baling with shims, and have already got out some rich stone from Elliott's claim. It is their intention to sink one of the claims a further depth of 60 feet, and then drive through a bar of sandstone that will enable the pumping engine on the Johnson's Reef to drain them. This work will involve a considerable outlay, but when completed will be of the greatest benefit. Wetherall Reef - The Coleman and Tacchis' Reef Company have struck a good reef in their claim at a depth of 450 feet... McEwan's Line, Golden Square - The Alliance Company have come on some better stone... The Johnson's Reef and Catherine Reef Company's prospects have improved during the quarter. At the Big Hill, Elder and Company have been doing very well... Moore and Company have also reported the discovery of payable quartz in their claim, taken up on a reef near Elder and Company. Perfect Cure Reef, Crusoe Gully - Allen and Company, at a depth of 80 feet, have found a well defined reef... Prospecting claims have been taken up on the following reefs:- Lovie's Reef, Bullock Creek; Great Britain Reef, Bullock Creek; Turner's Reef, Big Hill; White Horse Reef, near Eaglehawk; and Way's Reef, near California Gully... In alluvial mining the large companies have been doing well on the deep lead at Huntly. Myerstown is deserted, except by a few who have pretty good claims. A rush to some new ground at Bullock Creek has taken place, and it is expected that a good number will find profitable employment there during the winter. At the present time there are about 300 miners on the ground. Water is scarce, but some are doing very well. The prospectors reported having found stuff yielding 1/2 oz to the tin bucket, at a depth of 50 feet. The sinking is generally pretty easy, and varies from 20 to 50 feet. At Splitters' Gully, Whipstick, a miner found a nugget weighing 275 oz, within 5 feet from the surface; and in a small gully leading into Crusoe Gully, a puddler found 4 nuggets, weighing respectively, 49 oz, 8 oz, 6 oz, and 2 oz, in one machine full of stuff. Several others have also been found during the past few weeks.²

Mar 1868: Raywood Division - Mining matters are gradually improving in this division. Every available portion of ground being taken up by the miners here and in the vicinity principally under lease.

¹ Perry, 1975, pp15-16

² Mining Surveyors' Reports, March 1868

Several new companies have been formed, the most important one being the Schaffer Quartz Mining Company, who have taken up two claims on the May Reef, in connection with their original claim on the Welbourne line, which hitherto has yielded excellent returns. Messrs Stephens and Nicholls have nearly completed the erection of their quartz crushing machine (for public purposes) in a gully east of Raywood. When this plant is finished it will be hailed with great satisfaction by the inhabitants generally. The quantity of gold obtained from Frederick the Great Reef during the quarter is worthy of note, viz., 1,703 oz 16 dwts. It may be as well to mention that this claim is situate on the private property of Mr Hugh Glass, and that gentleman receives a percentage upon all the gold raised from the mine.¹

June 1868: Sandhurst Division - ... A great many payable alluvial claims have been found in the neighbourhood of Bullock Creek. This, with the continued rich yields from Wilson's claim, at Marong, has attracted a great number of miners to that part in search of alluvial diggings and new quartz reefs. A considerable quantity of alluvial ground has consequently been sunk upon, in many cases with good results, and a number of quartz reefs discovered, some of which have proved payable. From our old reefs there has been more rich quartz crushed than I have known for some time past. Several claims have lately been taken up on the Sarnia, Lawrence, Glasgow, Carshalton, and Bignell reefs, and most of them are doing well. It is a fact worthy of note that our deepest shafts are now being sunk still deeper, and the mines are paying well. The Hustler's Reef Company is down 597 feet, and is still sinking at an enormous cost. They confidently expect to cut a good payable reef at 600 feet. At present they have about 30 men employed. The Comet Company, Redan Hill, is down 533 feet, and is cross-cutting at 500 feet to strike the Hustlers line, which they expect to meet in a few days; they employ over 50 men in their mine. A buddle has been erected for the purpose of working their tailings, but the pyrites have not proved payable. The Eagle Company, Specimen Hill, Eaglehawk, are putting in a cross-cut at a depth of 516 feet; they have 26 men employed in their mine. The Johnson's Reef Company's engine shaft is now 520 feet deep and is being sunk deeper. At 527 feet they intend putting in a cross-cut to intersect the reef. A new shaft is also being sunk from the surface, to facilitate the working of the western line of reef that has been paying handsomely of late. Between 70 and 80 men are employed in their mine. Collman, Tacchi and Co.'s shaft, on the Wetherall Reef, is down 479 feet. Their quartz averages over 2 oz to the ton. They are sinking deeper. The Ellesmere Company, on the New Chum Reef, is down 400 feet, and is still sinking, with the view of putting in a drive at a greater depth to cut the reef. A considerable quantity of ground has been opened up in different parts of their mine showing good prospects. They have over 50 men employed. The Energetic Company, on Victoria Reef, has obtained good quartz at their 380 and 435 feet level. 68 tons of quartz yielded 202 oz of gold. The claims I have mentioned have been doing well at great depths, and many others have also. The following companies have been raising very good stone:- Exhibition Company, near the Big Hill... The Perfect Cure company... The C.C. Company, New Chum Reef... Burrows and Co...at the Gold Dust Reef near the Campaspe. The Moon Reef Company... The Belle Vue Company, Golden Gully... The Argus Company, Alliance Company, Lady Barkly Company, Young Chum Company, and the North Johnsons Company have been getting first-rate stone. On the Sheepshead Reef very little is doing. The Union Company state that they have been paying a heavy drainage assessment for a long time past, but their ground has not been drained, and they have not been able to work in consequence. I suppose that a bar exists between their mine and the pumping claim which prevents the drainage. Wilson and Co., of Marong, obtained 388 oz from 63 tons of quartz. Quartz Prospecting claims have been registered during the last three months on the following reefs:- Urie Reef, Gifford's Reef, Silk's Reef, Flint's Reef, Beresford's Hill, Breton Reef, Martin's Reef, and Henderson's Reef, all near Marong and Bullock Creek, and one on Prince Albert's Reef, at the Whipstick ... There is not much doing at the White Hills or Epsom, but at Huntly the companies have very good prospects in the deep leads. The Huntly Deep Lead Company is doing well. The manager states that they have discovered a right-angle bend in the lead to the East. The Telegraph Company finds the lead very hard to trace ... In the Cambridge Company's claim the lead has taken a sharp turn. In Britt's claim, a very soft pipeclay reef runs about 300 feet north and south ... Alluvial Prospecting claims have been taken up at Great Britain Gully, Bullock Creek, 29 feet, easy sinking...; Polwarth Hill, near Bullock Creek, 20 feet sinking, 12 feet of it cement...; Whaler's Gully, Leichardt, from 4 to 6 feet sinking...; near the Pound, at Marong, 61 feet sinking...; Bolle's Flat, Whipstick, 2 to 4 feet sinking. The gold found at Marong and Bullock Creek is not worth so much by about 1s 6d per oz as that found in other parts of this division. It is of a light yellow colour. The alluvial is generally fine, flaky, and ragged. It is almost unnecessary to state that by far the greater portion of our claimholders do not publish the amount of gold they obtain.²

Whipstick nuggets

Feb 1868, Splitter's Gully: 275ozs (Jacob)

1 Mining Surveyors' Reports, March 1868

2 Mining Surveyors' Reports, June 1868

- 1868:** Snowball Gully Rush to Snowball area, near Sydney Flat in 1868 was the last big event in the Whipstick. The sinking was mostly shallow where 3 nuggets ranging from 28 to 36 oz was found.¹
- June 1868:** Raywood Division - Mining matters in this division, during the quarter, have been much depressed, owing to the long continued drought, which, it will be seen, has considerably lessened the returns. The prospects of this division, in the opening up of payable reefs, are however now greatly better than every they have been since Raywood diggings were discovered: all that is required is water, and if this element is not soon available, I fear the public here will suffer a ruinous loss. The following Companies' crushing machines stopped work six weeks ago, and are still idle from the above cause:- New Era, Elysian Flat, Stephens' and Nicholls', and Nil Desperandum. The latter company has just completed the erection of an excellent whim, in connection with their famous claim on the Welbourne reef. A party of miners are now engaged in erecting an 8-horsepower crushing plant in Raywood Gully for public purposes ... The rush to Bullock Creek, 18 miles distant, has caused a small exodus of that class [alluvial] of miners from this division. A small rush has taken place near Doolman's Hotel, in the Whipstick; but I have been yet unable to visit the locality.²
- Sept 1868:** Sandhurst Division. The principal item of interest is the new alluvial diggings at Bolle's Flat, Whipstick, near Sydney Flat, which has attracted a great number of diggers from all parts of the division. So far as I can judge by results the diggings in this locality are as patchy as those worked in the neighbourhood some ten or twelve years since. While nuggets of all sizes, varying from 1/2 oz to 30 oz, are being every day purchased at the various banks, a considerable quantity of coarse shotty gold has also been unearthed, and some excellent samples of fine gold... These diggings have always been looked at with favour by many experienced miners, but almost insuperable difficulties were presented by the absence of water, while the want of roads was also most seriously felt. The yields of our quartz claims have been fairly maintained, and several new reefs have been opened at the Whipstick and Marong with very promising indications. The Argus Company, on Specimen Hill, struck a well defined reef a short time since at a depth of 360 feet. They have obtained 743 oz of gold this quarter. The Lady Barkly Company cut a new reef... The Star Reef Company has just struck a very rich reef near the surface. The Catherine Reef Company has recently cut a great quantity of water at the 416 feet level... The influx of water is looked upon as a favourable indication of the proximity of large bodies of quartz. The Hustler's Reef Company is cross-cutting at 60 feet for the old Hustler's Reef... The Comet Company, Redan Hill, is driving north, in the Hustler's line... Engine shaft down 554 feet. The Peg-leg Company, Prince of Wales Reef, is working spurs... The Johnson's Reef Company are cross-cutting ... A considerable number of miners are profitably employed at the Marong and Leichardt diggings, where the sinking is deep - 100 feet and upwards. At the Whipstick the sinking is from 2 to 14 feet.³
- Sept 1868:** Raywood Division - Messrs Law and Ollson have nearly completed the erection of eight head of stampers in Raywood Gully, for public crushings. The Nil Desperandum Company has cut the reef at the water-level (151 feet)... The reefs at Kamarooka are yielding fair returns. ...Williams and Company obtained 175 oz 10dwts from 224 tons of stone taken out of their claim on the Jones' Reef; and other claimholders on this line are also doing well. The rush at the Whipstick still excites a good deal of attention, but it has only very slightly affected the population of this division. The rain, which fell towards the close of the last quarter, has enabled the machine owners and miners to resume operations... The dams now contain about four months' supply of water.⁴
- Dec 1868:** Sandhurst Division - The results of quartz mining in this division during the past quarter have been highly satisfactory. Several new reefs have proved payable, and some of the old lines have yielded well. The Victoria Reef Gold Mines Company have been sinking and driving, in the course of which they have cut through eight spurs, each showing gold... On the same reef, the Victoria Quartz Mining Company, the Energetic, and others, have been doing well. On McEwan's line, Golden Square, near the Great Britain Company, the Prince Alfred tributers have discovered a flat spur that is very rich... Hoskins and Co., on the late Derwent Reef United Company's Leased ground, have been getting over an ounce to the ton. The New-chum Company's claim, on New-chum Reef, has been turning out well and nearly every foot of ground on that line.

1 Perry, 1975, pp166-176
 2 Mining Surveyors' Reports, June 1868
 3 Mining Surveyors' Reports, September 1868
 4 Mining Surveyors' Reports, September 1868

The Johnson's Reef Company, North Johnson's Company, and Catherine Reef United Crushing Company, have had very good returns, and their prospects are also good. On the Eagle line, the Argus Company's mine is yielding as well as ever; and the North Specimen Hill Company's claim, near the Argus Company, is paying well. Collman, Tacchi, and Co's. claim, on the Wetherall Reef, is again yielding rich stone. The Bellevue Company, having erected an engine on the Bellevue Reef, has reduced the water, and is now getting out stone averaging over 1-1/2 oz to the ton. Monument Hill is again being worked by a party of tributers, who have erected an engine thereon. Good accounts are also received from Sunday Morning Reef and Pender's Reef, at Marong; Perfect Cure Reef, Crusoe Gully; Diamond Hill Reef; Friling Reef, Whipstick; Christmas Reef, Kangaroo Flat, and many other reefs. Within the last three or four months gun-cotton has been introduced, and is fast coming into general use for blasting in our mines. In some of our largest mines, very little powder is being used, and experienced managers consider gun-cotton far preferable to powder in hard ground, and in cross-cuts and drives where there is not sufficient ventilation to clear away the smoke from gunpowder. A patent boring-machine for drilling holes for blasting (Ford's patent boring machine) has been tried in the Hustler's Reef Company's mine, and (as I am informed by the manager) answers admirably for driving in hard ground. It is worked by compressed air conveyed to it from the surface through strong three-ply tubes, and it may easily be moved from one part of the mine to another. Alluvial Mining - A great number of our alluvial miners have been attracted to the new diggings at Spring Creek, about fifty miles from Sandhurst; but many of them had to leave good ground at Bullock Creek, Sydney Flat, and the Whipstick, on account of the scarcity of water. The miners at Huntly are also suffering from the same cause. Most of the machines there have stopped work, and a great many hands have been discharged, as they have no water to crush with; but most of the companies there have been doing well, and have very good prospects. At Bullock Creek, very good results have been obtained in deep-sinking. From a shaft 100 feet deep, one party washed 21-1/2 oz of gold from 26 loads of stuff... At the Whipstick nuggets of considerable size are continually turning up, and it is expected that many will return to the diggings there, as well as at Sydney Flat and Marong, as soon as the rainy season sets in.¹

Dec 1868: Raywood Division - All the crushing machines in this division have ceased operations on account of the want of water. About one hundred miners have left here for the Spring Creek diggings, which has caused a considerable reduction in the amount of gold obtained for the quarter.²

1869: There were no more than 400 puddling machines operating.³

1869-71: Nearly a quarter of a million ounces of gold had spilled across the counters of the Sandhurst banks during the sixties. Dividend days had become a commonplace; investors with shares in the established mines waxed affluent and mine owners like Lansell and Latham and Watson pondered how soon they would be millionaires. It had been a gilt-edged decade that closed with a wave of excitement sweeping the town as the Great Extended Hustlers Company announced the laying bare of a new and excitingly rich reef on the famed Hustlers Line. An almost incredible 632 1/4 ounces had been won from 95 tons of stone. The news triggered a wild rush to peg leases near the Hustler's lease but soon they were being taken up on almost every known line of reef. The Old Year died in a blaze of wild hopes and the New Year ushered in one of the most extraordinary episodes in Sandhurst's brief history. The investment spree of the early sixties was being repeated but on a much more extensive scale and for the small investor, quite as disastrously. The town found itself plunged suddenly into a madly exciting whirl in which every one was bent on making a fortune, selling and buying mining scrip ... The mania persisted for twelve months or so. At its height, in July 1870, mining companies were being floated on Sandhurst at the rate of a half-a-dozen or so a day ... In the latter half of 1870 some three hundred new companies registered and there was little abatement of the fever in the months to follow. By November 1871 a further 765 companies had appeared, registered in over 18,000,000 shares. It brought the number of registered companies on the field to approximately 1,310 with the collective value of Sandhurst's mining stock approaching £10,000,000 ... The experts had predicted reef-gold would disappear about 400 foot level. Proven wrong, they revised their old theories and placed the limit at 1000 feet. By the seventies, the older Bendigo mines were reaching towards that depth with no hint of pending exhaustion. On the contrary, they were the very ones that in 1871 were 'astonishing the community and filling the pockets of the shareholders with dividends. In May £31,000 was paid in dividends and during the years that followed, the Bendigo field was to reimburse shareholders to the extent of some £683,000.⁴

1870: Suffolk United - Another deep mine which proved profitable over a period of 48 years from 1870 to 1918, the Suffolk United, adjoining the New Moon lease on its northern boundary. The shaft reached

1 Mining Surveyors' Reports, December 1868

2 Mining Surveyors' Reports, December 1868

3 Cusack, 1973, p119-20

4 Cusack, 1973, p148-49

a depth of 1,873 feet, the mine yielding 38,035 oz. of gold from 74,745 tons. This returned dividends of £37,035 - calls £35,792.¹

- 1870:** Prevention of accidents - Any miner working in alluvial ground a claim within twenty (20) feet of any public road or ordinary crossing-place, shall enclose any shaft or excavation which he shall make upon such claim by an embankment, or other fence at least four (4) feet in height, so as to afford thereby a reasonable security against accidents to passengers; and no person shall, without previously filling up such shaft or excavation, destroy or remove any such fence or embankment or portion thereof.²
- c.1870s:** The Harkness Foundry [Golden Square - commenced operations in 1858] in its later years erected many of the largest mining plants on the Bendigo field and supplied the first crushing plants for the Port Darwin rush and the Palmer River Diggings in 1871. It manufactured the widely-used Irvine Patent Inlet Valve, the work of its chief pattern-maker, Isaac Irvine, and had production rights to another local invention, the Mitchell Rock-boring Machine that became standard equipment in most mines. For the quartz-king, George Lansell, it produced the largest air-compressing plant in Australia.³
- 1870-72:** Although the 1870-72 boom was triggered by the strike on the Hustler's Line, its origins were far more diverse. Basically, it resulted from the occurrence of fresh sources of capital, with the Sandhurst mines seeming to offer the most promising field for their investment. How much of it was overseas capital is difficult to determine, but Macartney, who was a local sharebroker as well as a mining journalist, speaks of 'an immense influx of foreign capital into the Bendigo mines during 1870-71'. The export of Australian gold to Great Britain during the early decades had given great impetus to the British economy and had contributed to the creation of a capital surplus for overseas investment. ... Nearer home, the year 1871 saw Australian exports exceeding imports for the first time, so creating a pool of local capital for investment. As well, residential investment, which had been extensive during the sixties, suffered a temporary setback during 1870-71, so freeing capital for diversion to other areas. Elsewhere, with some notable exceptions, mining ventures were scarcely holding their own. Walhalla's mining boom of the late sixties ...had spent itself. On the other hand, the Sandhurst mines were yielding richly and consistently. In 1870 they paid investors £237,757 and during 1871 were paying an average of £6,580 a week in dividends. An especially attractive feature of investment in the Sandhurst mines was 'the low starting price of Bendigo stock' on which calls seldom exceeded a penny, and which contrasted sharply with that of Ballarat and Walhalla.⁴
- 1870-72:** Spree: With some 1,200 companies registered on the field, the mines were the chief employers of labour ... The seventies were the prosperous decade. In 1871 the town had a population of 18,778 which continued to rise during the decade with the influx of people from other fields. By 1881 it had risen to 28,662 {the figures do not include Eaglehawk which in 1871 had a population of 7,362} Writing in the early eighties, Macartney felt it necessary to distinguish between 'old Bendigonians' and the 'post-1870 residents' so considerable had the influx been.⁵
- Mar 1870:** Sandhurst Division (Raywood Division no longer exists) - There has been considerable excitement in this division during the past quarter in consequence of the remarkably rich stone exhibited by Rourke, Henderson, and Company from their claim on the Belle Vue Reef, the excellent yields from Bell and Watson's claim on Garden Gully Reef, and the discovery of an entirely new reef in the Great Extended Hustler's Reef Company's mine on Hustler's Reef. An idea of the value of these reefs may be obtained by a reference to the returns from these companies... The reefs I have mentioned may be the most particular at the present time, but generally the yields from quartz have been better, as may be seen from the average of the total returns received from the public crushing machines, even omitting that which includes the Extended Hustler's Reef Company's. The new reef in the last-named company's mine was discovered at a depth of 500 feet. Since the first of January this year it has enabled the company to pay off a debt of over 2,000, and pay dividends to the amount of 16s per 28,000th share, and they now have every prospect of a long continuance of like success.

1 Perry, 1975 pp214-227

2 Mclvor Times, 18 February 1870

3 Cusack, 1973, p176

4 Cusack, 1973, p153-53

5 Cusack, 1973, p158

In Rourke, Henderson, and Company's claim on Belle Vue Reef, the vein from which the rich stone I have referred to was taken is, comparatively speaking, small, but what it lacks in size is fully compensated for in quality, and the fact that, parallel with and running through all the claims on that line is a distinct reef, a continuation of the well-known New-chum line, which some are eagerly sinking or driving for, and others working vigorously with satisfactory results. The claimholders on Garden Gully Reef are also working energetically, as it promises to rival the Hustler's. Alluvial - There is no change to report in alluvial mining. Almost the only ground is that occupied principally by the Caledonia Company and Lehmann and Company, at Pottery Flat; and the Annabella Company, at Huntly; but the Bagshot Company's ground, which adjoins the Annabella Company, has furnished good prospects.¹

June 1870: Scarcely a day has passed without the discovery of good stone in some claim, and the share market has been in a continual state of excitement, which it is feared will occasion too much speculation. At Eaglehawk there is a considerable improvement. The South Catherine Company are exhibiting a magnificent lot of specimens; and the Golden Pyke Company, on the Comet Reef, have, during the past week, obtained 58 oz of loose gold from two nail cans of rubble... The Argus Company found a very rich specimen in their claim about two or three weeks since; the gross weight of it was about 25 lbs, and it was estimated to contain 15lbs weight of gold. As an instance of perseverance rewarded I may mention that in the Old Chum Company's mine, on New Chum Reef, Sandhurst, a short time since, they came on a body of stone at a depth of 450 feet, about 15 feet in thickness, from which they crushed 300 or more tons, averaging 1 oz to the ton. The claim had been worked for about fourteen years previously, without ever having yielded any payable quartz. Several machines have been [erected], and others are in course of erection, but still a considerable addition to our machinery is required. More quartz is being raised than can be crushed, and a great many claims now require pumping and winding engines, on account of the depth of the workings. The pumping engine lately erected by the Sandhurst and Melbourne Company, on the Bird's Reef, has given quite an impetus to mining on that line. The supply of firewood for the engines in and about Sandhurst is causing considerable anxiety. The stock on hand is very much reduced. The consumption has been so great that they now have to go a great distance for it, and every day they have to travel farther, on account of so much land having been taken up of late in the vicinity of the mines. The Hustler's Reef Company has been burning coke with their wood. The proprietor of another machine that burns about 100 tons weekly has purchased all the coke the Gas Company has. The price of firewood has already increased 9d per ton, and it is likely to become dearer. It is expected that before long there will be a great demand for coal. The Hustler's Reef Company is having the pyrited separated from their tailings, by means of troughs, each about 12 feet in length, with an incline of 1/2 inch to the foot. A stream of water running through carries away the light sand. The tailings are gradually dropped in with a shovel at the head of the trough, where the water enters. The pyrites separated in this way were perfectly clean. The manager of this company and Mr Carr, of the Extended Hustler's Reef Company, speak very highly of Faull's 'patent lubricator', which they believe effects a saving in fuel. Within the last few months a considerable number of miners have arrived from other districts, and the greater part of them have found employment. In alluvial mining there is no change to report. The Bagshot Company has erected their machinery and has pretty good prospects. The mines adjoining it at Huntly are doing pretty well. The Caledonia Company's ground at Pottery Flat is yielding very good stuff, averaging about 8 dwts per ton. About a month since a nugget was found at the Whipstick, weighing, with the quartz attached to it, 38 oz. It was estimated to be worth 25 oz of pure gold. The past three months has been the wettest season ever known in Sandhurst.²

Sept 1870: There has been great excitement and speculation in the share market, which has subsided considerably within the last month, in consequence of speculators now having to contribute towards the expense of opening up new ground, of which more has been taken up for mining purposes than I have ever known before in the same time. Considerably more quartz has been raised than could be crushed, partly because we have not sufficient wood. The bad state of the roads has rendered it impossible for the carters to keep up the supply, as they have now to travel a great distance to procure timber. Some have fortunately had enough fuel on hand to carry them through the wet season; but it is generally urged by the proprietors of mines that the scarcity of timber for firewood and underground workings is becoming a matter for serious consideration, and that a substitute for firewood must be obtained. The reckless cutting down of saplings is causing great complaint. A considerable quantity of coke, coal, and gas tar has been used by machine owners for firing, but coal is far too expensive at the present cost.

1 Mining Surveyors' Reports, March 1870

2 Mining Surveyors' Reports, June 1870

Referring to this subject, Mr Koch, the proprietor of the Pioneer works in Long Gully, reports that 'the quantity of pyrites operated on is much smaller than usual, in consequence of the impossibility of obtaining firewood, and the cost of coal being too great to make the process remunerative.' In consequence of the great number of new companies that have been formed recently, good miners are rather scarce, and some companies have been inconvenienced thereby. There is no change to report in alluvial mining, with this exception, that at Huntly results have been rather more satisfactory.¹

Dec 1870: A considerable amount of labour has been expended on the new ground that has recently been taken up, and which is as yet unproductive, so that calls have been rather numerous; but the general result of mining operations is very satisfactory, as the yield of gold is above the average, and the deepest mines, instead of showing any decline, are, as a rule, the most valuable. The deeper they sink on reefs the richer and apparently more permanent they become. The prospects of some claims that have no payable quartz in hand, or that do not expect to strike the reef for some time to come, are considered so good (on account of their being situated on lines that have been proved at much greater depths) that shares in them readily command a very high price. From every portion of the division favourable reports are received of new reefs that have been discovered. In alluvial mining there is little to report, as it is nearly entirely confined to Huntly. The Huntly Deep Lead Company, hitherto successful, have worked out their ground and sold their engine; but the Bagshot Company, holding two hundred acres, have erected two engines and twenty head of stampers. As it is proved that the rich lead the Annabella Company has been working runs through their ground, and as they have nearly completed their main drives, &c., for working it, they appear to have good prospects. The other companies in that locality are doing about as well as usual.²

1871: In Bell and Watson's claim on the Golden Gully Line five reefs had been discovered, each richer than its predecessor. On the same line, at Sailor's Gully, the Argus mine had, in 1871, recovered the largest lump of gold in quartz to be found in the colony, and in July, on the Hustler's Line, Collmann and Tacchi had struck an extremely rich reef at the 650 foot level. The mines on which the investors had their sights set and whose richness had precipitated the investment flurry, were located in the northern part of the field.³

South New Moon:

Adjoining the New Moon's lease on the south was that of the South New Moon. Commencing in 1871, this mine after experiencing some years of disappointment, proved one of the best mines on the Bendigo goldfield. To the time of its closure in 1931, this company crushed 452,661 tons for a yield of 251,389 oz, paying £522,400 in dividends ... The shaft was 1980 feet deep. From 1901 to 1905 the South New Moon was the leading mine on the Bendigo field, while in 1903 it was the best in the state. The most profitable year for shareholders was in 1904 when £120,000 was paid in dividends. This mine also had a first-class plant, which included a 40-head battery. On 29 December 1901, a new set of tubular steel poppet legs was in the course of erection. During 1933, a new company, the New South Moon was formed to re-open the original South New Moon, remaining in operation until 1841. During this period, 46,529 tons of stone were crushed for 8,878 oz. No dividends were declared. 1930 mining revival - New South New Moon commenced operations on the original South New Moon shaft in 1933, faced with the formidable task of unwatering the flooded workings. At first an air-lift pump lowered the water from the original level of 120 feet to 440 feet. In 12 months of operation, some 300,000,000 gallons of water were pumped from the mine. Not only was the water drawn from the Company's own lease, but also for a distance of almost seven miles along the line of reef, extending from the nearby North New Moon to the Great Southern mine just south of Bendigo. Water levels in all the old abandoned shafts along this line were also being lowered. In December 1934, a multi-stage electric pumps installed in the main shaft took over from the air-lift pump and were raising water at a rate of 29,000 gallons per hour. Later additional pumps were installed, and some 2,000,000 gallons per day were pumped from the shaft. At the time of the mine's closure in 1941, the water level had been lowered to 820 feet. Most of the water pumped from this mine flowed down Napoleon Gully and Sydney Flat. A number of hydraulic sluices were thus able to operate for some time, and much old alluvial ground was re-worked.⁴

1871: The discovery the same year of Feeley's Reef in The Whipstick gave an added dimension. Just how vast a maze of reefs lay awaiting exploitation became the subject of wild and fascinating conjecture.⁵

1 Mining Surveyors' Reports, September 1870

2 Mining Surveyors' Reports, December 1870

3 Cusack, 1973, p150

4 Perry, 1975 pp214-227

5 Cusack, 1973, p150

- 1871:** Meanwhile the claims on the Garden Gully and Hustler's Lines continued to pour out a constant stream of gold. Together with the Garden Gully, the Hustler's Line must rank among the richest in the history of gold mining. The most easterly of the three main lines of reef on the Bendigo field, the very first crushing from its surface outcrop on Hustler's Hill in the fifties, had yielded 26 ounces to the ton.¹
- 1871:** The rushes were now history and the men growing grey-haired talked nostalgically of 'the old days'. In 1871 the Old Bendigonians Society was inaugurated, its members drawn from the ranks of the original diggers and proudly referring to one another as 'men of '52' - a tradition was in the shaping. The Bendigo they had known and helped build was fast disappearing. The old was being torn down to make for the new which was often what could be rushed up as quickly as the carpenters could assemble it.²
- 1871:** With Parliament involved in interminable inter-party wrangling, completion of the Coliban Scheme seemed as far off as ever. Four years had passed since Sullivan had undertaken to implement it but by the early seventies, with increased domestic consumption and an increasing demand by the mining industry, Sandhurst was in an almost desperate plight for water. The Bendigo Waterworks Company, of which so much had been hoped, was in serious financial trouble but it was realised that if the project were to be abandoned, the city's plight would be even more desperate. Accordingly, in 1871 Council negotiated purchase of the entire assets of the Company at the cost of approximately £40,000. The works comprised a storage reservoir at Big Hill, a filtration works capable of delivering 200,000 gallons a day and some twelve miles of mains ... The aim was to provide the town with a permanent supply independent of the long-awaited Coliban Scheme ... Extensive orders were placed in Britain for piping, and tenders were let for a new reservoir at Robinson Crusoe Gully. Work began in August. It was to hold 338,000,000 gallons with a proposed daily output of 1,000,000 gallons ... It was soon apparent that completion of the Bendigo section of the Coliban Scheme would involve either assuming control of the Council-owned Waterworks Company or duplicating its facilities. Accordingly, late in 1872, less than twelve months after its purchase, negotiations began for the sale of the Waterworks Company to the Government as a going concern. By then, the reservoir at Crusoe had been completed at a cost of #25,000. The settling ponds an additional £12,000 had also been finished. Some £24,000 worth of pipes imported from England had been laid. The total value of the Waterworks Company was £100,000.³
- 1871-73:** In 1873 nine mines were working on the line whose reefs plunged away directly below the traffic flowing along Pall Mall. Most important of them was Latham and Watson's Great Extended Hustlers formed in 1865. Against an expenditure of £130,000, one reef alone, between the 400 and 600 foot levels, had returned the owners over £500,000. From their No. 30 reef they had consistently secured 100 ounces to the ton. In 1870 the market value of their mine was £14,000. When the No. 36 reef was cut in the 463 foot level, it rose within weeks to £560,000. For twelve months (1870-71) the mine crushed 13,998 tons of stone for a dazzling return of 18,209 ounces of gold. In six months to June 1871 shareholders received £63,700 in dividends. Six yields of over 2,000 ounces each were achieved in the last six months of 1871. On the same line, another reef (Thompson's) paid over £360,000 in dividends and the Great Extended Hustlers Tribute Company formed in 1871 to work the southern section of the lease, immediately struck good gold in the No. 36 reef and for some time paid regular fortnightly dividends ranging from £1,500 to £14,000. Its very first crushing of 264 tons yielded 2,564 ounces of gold. In eight weeks from November to December 1871, the Great Extended Hustlers Tribute Company crushed 1,107 tons of stone, averaging no less than ten ounces of gold to the ton. ... Naturally enough, those who could afford it clamoured for stocks on the Hustler's Line. In 1871 the gross market value of stock in the parent company's collective holdings - the Great Extended Hustlers, the Tribes. and a second tribute - was £363,000. However, so prodigal was the Sandhurst mines at this time, this scarcely compared with the collective value of the Garden Gully Stock. Embracing some of the richest and most famous mines on the field, this was valued at approximately £1,324,000. Here on the Garden Gully Line were Bell and Watson's, the Cornish United, the Victory and George Lansell's pride, the Pandora. Here too, was the enormously rich Kentish Mine from which its owner, J.B.Watson, was credited with taking some thirteen tons of gold, then worth £1,500,000. At this time, John Boyd Watson was well on the way to becoming not only the richest man in Sandhurst, but probably in the colony.⁴

1 Cusack, 1973, p150
 2 Cusack, 1973, p158
 3 Cusack, 1973, p166
 4 Cusack, 1973, p150

Mar 1871: It would be difficult to find a speculator who does not speak well of the general result of mining operations (I refer particularly to the reefs within four miles of the township of Sandhurst). The discovery of a new and very rich run of stone in Collmann and Tacchi's Reef Company's claim, at a depth of 640 feet, gives great encouragement to mining enterprise. There has been a great amount of speculation in shares, but it appears to be influenced and regulated very much by well-understood indications that are developed from time, to time, so that high prices are not often paid for shares without good reasons for so doing. The mines are worked more energetically than formerly, many claims have two or more reefs running through them, and if one proves unremunerative search is immediately made for another by crosscutting, and often with great success. It has been found necessary to erect several more machines lately, but it is quite evident that more are required. The fortunate owners of land, situated on the line of well defined and payable reefs, find the value of their property much enhanced, and residence areas similarly situated are being worked as mining claims. The supply of labour is equal to the demand. Alluvial mining is still confined to Huntly, but the companies' prospects there have improved.¹

June 1871: The average yield of the quartz obtained in this division during the past quarter is considerably higher than it has hitherto been, and the quantity of gold purchased by the banks exceeds that of the previous three months by more than 20,000 oz. The Garden Gully Reef has contributed more to this than any other, but the improvement is general. Excellent yields from other reefs may be seen in the list of Companies' Returns which I have attached, conspicuous amongst which is the Wilson's Gold Mining Company, at Marong. The continuous rich yield from this company's mine has given quite an impetus to mining in that locality; but a great quantity of new ground has been taken up on the supposed lines of all the principal reefs (not excepting the railway and municipal reserves) for miles beyond the payable claims on those lines. A great number of large companies have been formed, some for working the ground held by owners of two or more adjoining ordinary claims on old ground, others for working ground that had not previously been mined upon. The success attending mining operations generally, and the fact of Collmann, Tacchi, and Company having struck a good reef about 3-1/2 feet thick at a depth of 720 feet on the Wetheral Reef, and Latham and Watson at a depth of 700 feet on the Hustler's Reef, has caused great excitement in Sandhurst, and, to a great extent justifies considerable speculation. The past yields of the Frederick the Great Company's mine, and the splendid prospects of that company, have caused a rush for claims near it. A great quantity of ground has been taken up on Matthew's Reef, near the White Hills, in consequence of the Isabella Company having found payable stone on that line. Other reefs have been discovered in that locality, which are being worked energetically. A company has been formed for the purpose of extracting gold from the silt in the Eaglehawk and Job's Gully sludge channel, and from trials made the promoters are sanguine of its success. Heavy gold has been found in an alluvial claim at the junction of Woodstock and Marong. The sinking is from 3 to 6 feet; and I believe that a new quartz reef has also been discovered there.²

Aug 1871: Towards the end of August 1871, attention suddenly switched to the south, following a rich discovery in the G.G.Consolidated claim on the Glasgow Line. The discoveries created as great a furor among investors and mining interests as did the spectacular 'cakes' being turned out by the northern mines. Generally, the southern sector of the field had been neglected. Now, there was a wild rush to peg claims along its reefs. Suddenly, it was remembered that Golden Gully had been perhaps the richest gully on Bendigo, its gold shed from these same reefs.³

Sept 1871: Mining operations in this division have extended very much during the past quarter. An immense quantity of new ground has been taken up, and claims that have been abandoned are eagerly sought after. The yield of gold from quartz crushed is above the average. More drainage machines are required on various reefs, and in all probability the present crushing machinery will shortly be found quite inadequate for the requirements of the district. The reefs in Golden Gully, Spring Gully, Milkmaid's Flat, and Big Hill, have attracted considerable attention, and mining is reviving at Shelbourne, but the greatest excitement has been caused by the discovery of a very rich reef at the Whipstick by an alluvial miner. Already a great many claims have been marked out, and quite a rush has taken place there. In alluvial mining there is nothing worthy of note.⁴

1 Mining Surveyors' Reports, March 1871

2 Mining Surveyors' Reports, June 1871

3 Cusack, 1973, p150

4 Mining Surveyors' Reports, September 1871

Dec 1871: During the past quarter mining operations in this division have been attended with a fair amount of success. At the commencement of it the greatest excitement prevailed, ground was eagerly sought for, and a great number of new companies were formed. The excitement has now subsided for a time, but the claims generally are being worked vigorously and with much confidence, as some of the oldest reefs at the greatest depths are yielding very good stone, and highly promising reefs have been discovered in the new ground lately taken up. A considerable number of winding and crushing machines have lately been or are in course of erection, which will facilitate the working of claims and lessen the expenses connected therewith. The lack of machinery in the immediate neighbourhood of some of the claims lately taken up is felt considerably. Carpenter's Ore Separator is now in full work on a large pile of quartz tailings in New-Chum Gully. I understand that the various ores are sent to England for treatment. In alluvial mining there is nothing worthy of note to report.¹

1872-77: By June 1872 £626,850 had been spent on the Coliban Scheme and Sandhurst was still dependent on local water ... By the time it finished Sandhurst's water supply would have cost the colony well over £1,000,000 ... on November 1877 Angus Mackay, who, more than anyone else had been responsible for the scheme's completion shared in an official opening of the outlet valve. A few days later, Coliban water was flowing into Crusoe Reservoir and Sandhurst had a permanent water supply.²

Mar 1872: The quantity of gold purchased by the banks and the average yield of the quartz is higher than in any previous quarter. The return relating to quartz (49,807 tons, averaging 18 dwts 4 grs per ton) represents less than two-thirds of the quantity crushed, but it is a fair sample of what has been produced during the last three months. Additions have been made to our machinery, perhaps the most important being the erection of the Great Comet Company's pumping and winding engine, on the Comet Reef; the Golden Fleece Company's crushing, &c., engine, on the Stafford Reef; and the Friling Reef Company's engine, on the Friling Reef at the Whipstick. These three machines are a considerable distance from others, and will assist in the speedy development of the reefs where they are situated. Two additional reverberatory furnaces, with Wheeler's amalgamating pans, have also been erected. A quantity of ore has been forwarded to England for treatment, from the ore-separating machine in New-chum Gully, but the result is not yet known. About 38,000 gallons of water, at 4d per 1000 gallon, have been sold daily from the Spring Gully reservoir, the greater part of which has been used by the alluvial machines at Huntly. The Big Hill reservoir is found insufficient to supply more water than is required for domestic purposes. Some machines have been at the expense of carting fresh water for the boilers, at a cost of 4s per load, and a considerable quantity has been purchased from various sources. I have nothing new to report in alluvial mining.³

June 1872: During the past quarter a number of steam-engines have been erected in the division, and progress has been made in quartz mining. The cost of these engines and the expense of sinking many new shafts have borne heavily on shareholders, but the enormous outlay thus incurred proves that the reefs offer great inducements for companies to erect machinery. It is also gratifying that the mines are now being worked more systematically and with greater economy, but a considerable quantity of ground is held unworked. Besides the engines enumerated in my return there are forty others in course of erection, some of them just ready to start. Two additional reverberatory furnaces have been erected, and are fully employed in roasting pyrites. Several companies use ties (strakes) for separating pyrites from tailings. There are only about four companies in the division that have engines with condensers, but they have effected a great saving of firewood, because timber is becoming scarcer and dearer. Alluvial mining is almost confined to Huntly, but they are doing a little at the White Hills and Marong. The Calidonia [sic] Company, at Huntly have erected cradles at the end of their ripple-boards that save a quantity of gold. The Bagshot Company intends adopting similar means. At one machine at the White Hills twenty Chinamen are successfully employed in extracting gold from cement tailings by means of cradles. The manager of the Bendigo and Melbourne Company, on Bird's Reef, Kangaroo Flat, reports that at 300 feet they found a totally different stone to anything yet obtained on the line. It has all the appearance of the Garden Gully or Hustler's stone, and appears richer than any yet got. The manager of the Golden Fleece Company, on Stafford Reef (at almost the extreme south portion of the division), reports that at 360 feet they struck the reef 70 feet from the shaft, that it appears to be an immense body of stone, and shows gold equally as good as that obtained at the 300-foot level.⁴

Sept 1872: During the past quarter mining operations have been carried on energetically, and with considerable success. The returns are very satisfactory, and prospects are encouraging. The share market has been much depressed, owing to the numerous calls; but a great number of new ventures have been

1 Mining Surveyors' Reports, December 1871

2 Cusack, 1973, pp167-68

3 Mining Surveyors' Reports, March 1872

4 Mining Surveyors' Reports, June 1872

abandoned, and shares in the older mines are improving in value. In alluvial mining there is nothing worthy of notice to report.¹

Dec 1872: Unprecedented success has attended quartz mining operations in this division during the past quarter, and I am happy to be able to report that there is every prospect of a continuance of it. A good many claims in new ground have been abandoned, consequently fewer calls have been made. There is nothing worthy of note with respect to alluvial mining.²

1873+: But it was all too wildly speculative to last, and with a lull in local gold production in 1873, the collapse came. ... By the middle of 1873 the boom was over but in another sense it was just beginning. For although the Golden Sovereign, the Golden Mint and the Golden Elephant, along with the Great Wonder and the Little Wonder, the Rising Star and the Morning Light and hundreds of other such companies were to fade swiftly from the scene ... the tide of which they were the flotsam, also flowed into the tried and proven companies. It enabled them to undertake vital prospecting programs, the cost of which was often crippling. Many investors may have burnt their fingers during the speculation spree but by and large Sandhurst benefited, and stabilising itself once more in the mid seventies, the mining industry emerged the stronger. Although production declined sharply, the field remained stable for the rest of the decade. There was question of it becoming exhausted. The 1870 yield of 360,000 ounces was higher than that of any year since 1859, and production in 1880 was comparable to that of the mid-sixties. Prospecting programs slowed production and by the mid-seventies the difficulties associated with recovering gold at depth were beginning to manifest themselves. Many of these problems were accentuated by poor or inexperienced mine management. Too many mine-managers had little or no geological knowledge. Shafts were often sunk too close or too far away from the lode or even the wrong side of it. No infrequently, costly machinery had been installed by the inexperienced for the inexperienced. There were also engineering problems inherent in deep sinking, not the least of which was that of raising the buckets or 'kibbles' of ore to the surface. Whether or not a mine could be worked profitably, it was said, depended ultimately upon the efficiency of its hauling and hoisting equipment. By the seventies mine-managements were becoming aware of the problem of ventilation in their mines and by the end of the decade, the 'Guibal Fan', designed to provide a constant circulation of fresh air below, was in use in several of the Bendigo mines, even if proving far from adequate as a solution to the problem. Mining accidents due to falls of rock, the flooding of adjacent shafts and to the faulty handling of explosives, were increasingly frequent and often fatal. ... Angus Mackay's Regulation of Mines Act, the sanest and most far-reaching piece of mining regulation enacted during the period, sought to awaken management to their obligations, spelling out their legal responsibilities ...³

1873: Kamarooka - Later new discoveries in the alluvial at Kamarooka led to a rush there in 1873.⁴

1873-80s: Mackay's Regulation of Mines Act of 1873 - 'one of the most advanced social laws in the English-speaking world' (Blainey, *The Rush that Never Ended*, p. 297) - had, amongst other things, achieved the enforcement of basic safety regulations. As a result there was a spectacular drop in the frequency of serious mining accidents. In 1874 slightly more than ten of every 1,000 miners in the colony's quartz mines could expect to be involved in some kind of serious mining accident. By 1888 this number had been reduced to slightly less than 4 per 1,000. And whilst previously four out of every 1,000 quartz miners died each year in mining fatalities, by the late eighties the toll had halved.⁵

Mar 1873: I think the accompanying returns will prove that quartz mining in this division is in a more flourishing condition than ever. They are the most complete that I have ever obtained, and the yield of gold from the quartz is the highest I have known, 84,290 tons averaging 1 oz 1 dwt 2 grs per ton. In alluvial mining there is no change.⁶

1 Mining Surveyors' Reports, September 1872

2 Mining Surveyors' Reports, December 1872

3 Cusack, 1973, p154

4 Flett, 1979, p250

5 Cusack, 1973, p173

6 Mining Surveyors' Reports, March 1873

June 1873: The average yield of gold from quartz during the last three months has not been quite as good as that of last quarter. The Cosmopolitan Company, on the south side of the Bendigo Creek, has come on what is believed to be a continuation of the Garden Gully Reef, and it is generally considered to be a discovery of great importance. The Royal Hustler's Company's mine, considerably south of the well-known Great Extended Hustler's Company, is now yielding good stone. The Golden Fleece Company's mine, at the southern end of the workings in this division, is looking more promising than ever. At Kamarooka - the northern end of the division - there has been a rush to alluvial workings, and the miners are pretty well satisfied with the results, but their operations are impeded on account of the ground being too wet and heavy for carting their wash-stuff to the mill. Several new engines have been erected in various parts of the division.¹

Sept 1873: There has been a large quantity of quartz crushed during the past quarter, the yield from which is not quite so good as it has been, but the general prospects are very good. The discovery of rich reefs in the deepest mines, and the splendid yields from the southern end of the Garden Gully, Hustler's, and other reefs in various localities, have furnished the most satisfactory proofs of the great value and permanence of the reefs in this district. In alluvial mining there is nothing new to record.²

Sept 1873: North Johnson's, Johnson's Reef - A new winding engine and plant erected. Johnson's Reef G M, Johnson's Reef - New winding engine erected. North Whip, Whip Reef - A 14-hp engine erecting; double winding gear.³

Dec 1873: Enquiries respecting unworked ground, and applications by working parties for forfeited leases and abandoned claims, have increased considerably. This fact, considering the depressed state of the share market, is significant, as showing that the ground is not taken up for speculative purposes. In the eastern part of the division a payable reef has been found at Mosquito Creek. In the west, there has been a revival on the Sunday Morning Reef at Marong, and in the north miners speak well of Kamarooka, whilst the Golden Fleece Company, at the southern end of the Stafford Reef, have been doing very well. They have forty head of stampers working on their own stone, and a prospect of a long continuance of success. Firewood is getting scarcer and dearer. With a view to economy, a few companies have recently affixed condensers to their engines, and the result in every case has been a saving of about 25 per cent in consumption of firewood; but nine out of ten of the engines in Sandhurst are now without condensers.⁴

Dec 1873: North Johnson's, Johnson's Reef - New winding engine.⁵

Mar 1874: The returns show that 80,069 tons of quartz have been crushed during the quarter, averaging 12 dwts 18 grs per ton, a result which is very satisfactory. The numerous calls made for progressive mines, and the too high prices paid for shares in them, have crippled speculators. Money is scarce, so that the works in many mines of this class have been stopped, and there are not so many miners employed. But a good number of claims have been taken up by private parties, which is, I think, a healthy sign, indicating a feeling of confidence in the results of quartz mining on this goldfield. It will be seen by the subjoined list of crushings that the reefs at great depths have yielded well.⁶

June 1874: The result of operations in quartz mining during the past quarter is very satisfactory, 89,891 tons of quartz yielding an average of 15 dwts per ton; rich quartz is to be found at great depths. There has not been much prospecting for new reefs, and many of our progressive mines have ceased working; but, rather than remain idle, the miners thus thrown out of employment seek to obtain blocks of ground in large claims to work on tribute. At Spring Gully three companies have taken up sluicing claims (quite a new thing in Sandhurst), and, with the aid of the water from the reservoir at the head of the gully are pretty confident of doing well. Two large crushing plants are in course of erection, one of the Garden Gully United Company's ground and one on Mr Lansell's claim on the Flora Reef.⁷

Sept 1874: The average yield of quartz is nearly three-quarters of an ounce per ton for 80,000 tons. Nearly 1100 tons of pyrites have been treated, yielding an average of over 3 oz 15 dwts per ton. Deep sinking in quartz promises well. Several new claims are turning out rich, and discoveries have been made of

1 Mining Surveyors' Reports, June 1873

2 Mining Surveyors' Reports, September 1873

3 Mining Surveyors' Reports, September 1873

4 Mining Surveyors' Reports, December 1873

5 Mining Surveyors' Reports, December 1873

6 Mining Surveyors' Reports, March 1874

7 Mining Surveyors' Reports, June 1874

great importance. The events most worthy of notice are - the discovery of a new reef (an entirely new formation) in the Pandora Company's claim, on the Garden Gully Reef, at a depth of 670 feet; the rich yield of the stone in the Golden Stream Company's mine at the southern end of the Garden Gully line, and the striking of the Hustler's reef, a few days since, in the Hustlers Premier Company's claim, on Redan Hill, at a depth of 800 feet. The reef...shows gold freely. These three events justify deep sinking, and prove the richness and permanence of our reefs lengthways. In alluvial mining there is nothing worthy of notice.¹

Dec 1874: The average yield of quartz is nearly three-quarters of an ounce per ton for 80,000 tons. Nearly 1100 tons of pyrites have been treated, yielding an average of 3oz. 15dwt per ton. Deep sinking in quartz promises well. The events of most worthy of note are - the discovery of a new reef (an entirely new formation) in the Pandora Co.'s claim, on the Garden Gully Reef at a depth of 670 feet; the rich yield of stone in the Golden Stream Co.'s mine at the southern end of the Garden Gully line; and the striking of the Hustler's reef in the Hustlers Premier Company's claim, on Redan Hill, at a depth of 800ft. These events justify deep sinking, and prove the richness and permanence of our reefs lengthways. Alluvial mining - nothing to note.²

mid 1870s: As well, by the mid-seventies the effects were being felt of what was to be a considerable and continuing influx of Cornish miners into the Sandhurst mines. The discovery of extensive alluvial tin deposits in Malaya in 1872 spelled disaster to the deep and impoverished Cornish tin-mines. Depression hit the industry before the mid-seventies and the tin-miners streamed away to Australia, America or South Africa. In six months during 1875, some 10,576 persons left Cornwall for Australia. It was not unusual for villages to be almost wholly deserted of their menfolk. Seventy-three men from the Cornish village of St Just were counted on evening in a Bendigo hall. With their skill and knowledge of deep mining, most Cornishmen were attracted to the Victorian quartz-mining fields. Many of the Sandhurst mine-managers were themselves Cornish and the new arrival soon found employment.³

1875: In the first five years of the decade, investors in Sandhurst mining were required to pay £1,126,000 in calls but at the same time reaped £2,600,000 in dividends ... the highwater mark for dividend payments from the Sandhurst mines was reached in 1875 when a sum of £404,695 was paid.⁴

1875: The Great Extended Hustlers passed 1000 feet, the first mine on Sandhurst to do so. Others were approaching it. By the same year, the Lazarus No. 1 was down 800 feet and the Unity was securing good gold at 700 feet. As they deepened, the question of drilling and of mining procedures generally, assumed increasing importance.⁵

Mar 1875: Sandhurst Division [N G Stephens]. The total yield of gold for the quarter is less than usual, but it is distributed more satisfactorily. The claims in the neighbourhood of Eaglehawk ... have been turning out well. The average yield from the quartz is very good, 76,000 tons yielding over 13 1/2dwts. and 1,000 tons of pyrites 2ozs. 15dwts per ton. By the preceding tabular statement it will be seen that a considerable portion of the rich quartz is taken from the deepest mines. On the Hustler's Reef, the United Pioneer Company have recently cut good stone at a depth of 570 feet, and the Great Extended Hustler's Company in sinking have come on a new formation at 800 feet. Some of the progressive claims have ceased working; but it is noticeable that a number of steam engines are in the course of erection in various parts of the district. A new reef (called the Easter Reef) has just been discovered at the Whipstick, on the north side of Truck Gully, from which the prospector is obtaining 1 1/2oz. per ton. About the beginning of February water was scarce, and some of the crushing machines has to stop work for a time.⁶

Mar 1875: South Catherine Reef, St Mungo Reef - 18hp winding engine erected.⁷

June 1875: Sandhurst Division [N G Stephens]. Deep sinking in the quartz mines has received considerable attention and the results are very encouraging. The Hustler's Premier Co. have discovered good stone at 845ft; the Victoria Reef Gold Mines Co. a rich reef at 820ft; the North Garden Gully and Passby United Co. at 784ft; the New-chum and Victoria Reef Co. at 860ft; the Lazarus No. 1 Company, New-chum Reef, at 800ft; the Great Extended Hustler's Tribute Co. very

1 Mining Surveyors' Reports, September 1874

2 Mining Surveyors' Reports, December 1874

3 Cusack, 1973, p164

4 Cusack, 1973, p156

5 Cusack, 1973, p155

6 Mining Surveyors' Reports, March 1875

7 Mining Surveyors' Reports, March 1875

promising stone at 770ft; the Great Hustler's Co. a new reef at 850ft; and the Hustler's Reef Quartz Mining and Drainage Co. at 900ft, is very promising. The United Co., on the Garden Gully line, has been fortunate to strike at 660ft the cap of the same reef the Pandora Co. is working. A new and well defined gold-bearing reef has been discovered between the Carshalton and Mary Macdonald Reefs that has given an impetus to mining in that locality. Another event worthy of note is that the Hustler's Reef Co.'s shaft is now over 1,008ft deep. The richest quartz and pyrites have come from the Catherine and St. Mungo Reefs at Eaglehawk, but the Pandora Co., on the Garden Gully Reef, have a very large body of stone averaging nearly 1 1/2ozs. to ton. In alluvial, a prospecting claim has been taken up at Kamarooka - 40ft sinking. A few parties are engaged in sluicing, and this branch of mining may be expected to increase.¹

Sept 1875: Sandhurst Division [N G Stephens] ... an amount of 81,874 tons, averaging 14 1/2dwts per ton. Rich quartz has been obtained in the Unity Co.'s ground, on the Garden Gully Reef, at from 710 to 730ft, 50 tons of it yielding 20ozs. per ton. One mile and a-half south of this, on the same line (all the intervening claims being rich), the Londonderry Co. have struck the reef at 382ft, and obtained an average of 3oz. 7 1/2dwts from 371 tons. Ground that has for some time been unworked has been taken up by small parties of working miners, on the Fruhling Reef, Whipstick, and the Lightning Reef, Eaglehawk. Several new machines are in the course of erection. which indicates, and is, the result of successful mining. Two or three companies are endeavouring to erect effectual but less expensive machinery for saving pyrites, and also for treating raw quartz so as to reduce the cost of crushing. A revival in alluvial mining at Huntly has commenced. When water is available miners find sluicing payable.²

Dec 1875: The most noticeable features in the mining operations of the past quarter are the striking continuation of the Hustler's Reef, south of Bendigo Creek, by the City of Sandhurst Company; the rich yield of gold from the United Garden Gully Company's mine; and the good prospects of other mines on the same line farther south. There has not been so much quartz crushed as usual, but the average of the total is very satisfactory, being about 14dwt per ton. Deep sinking is persevered in with good results. A system of working mines by letting blocks of ground on tribute to working miners has been practised in a few claims for some time past, but is now becoming more general. The quantity of pyrites saved from tailings is increasing, and the yield of gold therefrom is considerable. The dividends paid by public companies during the present quarter exceed the calls by £97,637.³

Dec 1875: Johnson's Reef Extended Tribute, Johnson's Reef - Small engine erected. Albion United, Bird's Reef: erecting pumping and winding machinery - nearly completed.⁴

1876: Returning from a world trip in 1876, George Lansell visited Nevada and California to inspect mining methods there, and was greatly impressed by the recently-introduced diamond drill, being used extensively in prospecting ... On returning to Sandhurst, he proposed the immediate dispatch of a geologist or mining engineer to California to investigate American methods with a view to local adaptation. Lansell offered to pay one-third of the nominee's expenses if the struggling School of Mines could raise the balance. Somehow, it managed to do so and eventually Gustave Thureau, later Government Geologist and Inspector of Mines in Tasmania ...sailed for the 'Eureka State' ...[he concluded that]... Many American methods ... could be introduced with profit to local mining - the business-like approach of mine-managements; the much more effective winding and hoisting equipment; the use of air-compressors, percussion power-drills and steam generators that were more efficient than the single-or double-tubed Cornish boilers still in use in Victorian mining. Labour-saving equipment unknown in the Bendigo mines was in everyday use there. Drills used for boring blasting-holes penetrated 9 feet 3 inches in an hour - a distance achieved in Sandhurst mining only by two miners each working a full ten hour shifts. He believed Californian methods of gold extraction would considerably reduce the average loss of 25% gold - sometimes as high as 50% - accepted in local mining.

1 Mining Surveyors' Reports, June 1875

2 Mining Surveyors' Reports, Sept 1875

3 Mining Surveyors' Reports, December 1875

4 Mining Surveyors' Reports, December 1875

Above all, Thureau was impressed by the diamond-drill, worked with water and compressed air, and then, still something of a novelty. Aware of the great problem that prospecting at depth posed in the Bendigo mines in terms of time, cost and sheer physical effort, he strongly recommended its introduction. As a result the Victorian Government secured three steam-operated surface drills for hire to the mining companies. Lansell used the diamond-drill very successfully in some of his mines and the outstanding success with it by the G.G.Consolidated Company, led at a time, to a strong revival in Golden Gully Stocks. However, in general, it did not prove wholly suited to horizontal prospecting of the kind demanded by the Sandhurst mines, and as a result, tended to lose favour.¹

1870s: Saw the coming of age of several new mines of great promise, including the Londonderry and Lansell's Cinderella, whilst the older mines continued to dazzle the colony and delight investors ... In the first five years of the decade, investors in Sandhurst mining were required to pay £1,126,000 in calls but at the same time reaped £2,600,000 in dividends ... the highwater mark for dividend payments from the Sandhurst mines was reached in 1875 when a sum of £404,695 was paid. All in all, it had been a golden decade. Some 2,719,946 ounces had been won and investors had reaped a little more than £3,500,000 in dividends.²

1870s-80s: The necessity of prospecting at depth was also slowing production. It was an essential feature of quartz-mining and particularly important on the Bendigo field with its curious saddle-reef formations. Between saddles were long stretches of barren, unremunerative sinking which, unavoidable though it may have been, was not calculated to attract investment. Interest in the Sandhurst mines waned and the glamour that had attached to its mining stocks in the seventies, came to be largely transferred to Broken Hill where silver was discovered in 1883.³

1870s-80s: Even in the seventies, before the introduction of the rock-drill, the incidence of death from pulmonary conditions, was 35 per cent higher on Bendigo than amongst adult males elsewhere in the colony. By the eighties it was almost 50 per cent higher. The first death from miners' phthisis recorded from Sandhurst was in 1887 but it is likely many earlier deaths recorded as resulting from pulmonary causes were, in fact, phthisis.⁴

Mar 1876: Sandhurst Division [N G Stephens]. It is generally considered that this division is in a more prosperous condition than it ever has been - 89,000 tons of quartz, averaging 13dwts 12grs. per ton. The yield from deep mines is remarkably good, and their prospects are also good. Very heavy gold has been found in the Carlisle, North Garden Gully, and Passby United Co.'s claim, on the Garden Gully Reef, at a depth of 854ft. Every claim on the Garden Gully Reef, to the extent of one mile and three-quarters continuously, is turning out well, the greater portion of them yielding large weekly returns. Forfeited ground on the main lines is eagerly sought after.⁵

Mar 1876: Garden Gully United, Garden Gully - New winding gear cost £3000. Johnson's Reef Extended Tribute, Johnson's Reef - Portable engine and winding gear erected.⁶

June 1876: Sandhurst Division [N G Stephens]. Mining affairs in this division are in a prosperous condition - 90,000 tons raised, yielding an average of 12dwt 8grs., and by including the gold from the pyrites taken from the same quartz, the average is nearly 13dwts. I subjoin a list of 31 shafts, ranging from 700feet to 1,090 feet in depth, more than one half of which are still sinking. A great many small parties of working miners have taken up claims of late in various parts of the division, and a fair share of them have been successful; especially so on the Lightning Reef, at Eaglehawk, which promises well for that district. Alluvial mining - nothing worthy to note.⁷

June 1876: Londonderry, Garden Gully Reef - Winding and pumping plant erected, cost £3000.⁸

1 Cusack, 1973, p155-56

2 Cusack, 1973, p156

3 Cusack, 1973, p172

4 Cusack, 1973, p175

5 Mining Surveyors' Reports, March 1876

6 Mining Surveyors' Reports, March 1876

7 Mining Surveyors' Reports, June 1876

8 Mining Surveyors' Reports, June 1876

Dec 1876: Sandhurst Division [N G Stephens]. Quantity crushed is fully up to the average, but there is a slight falling off in the yield of gold. On the Garden Gully Reef, the Garden Gully United Company has, at 668 feet, struck a continuation of the reef found in the Pandora Company's claim at a great depth. The two claims are several hundred yards from one another. The tributaries at the southern end of the Great Extended Hustler's Reef Company lease have also just come on to a good reef. The Morning Light Co., in Golden Gully, last week obtained 336ozs. of gold from 10 tons of dressed pyrites.¹

Dec 1876: Londonderry Tribute, Garden Gully Reef - New and powerful machinery erected on the company's ground. Snob's Hill, Devonshire Reef - New machine erected. Johnson's Reef G M, Johnson's Reef - New crushing battery of 30 heads erected.²

Mar 1877: Sandhurst Division [N G Stephens] In quartz mining there has been a considerable falling off in quantity crushed and the average yield. About a month since an alluvial prospecting company (Messrs Wells, Massoni, and Patterson) reported having found some payable gold in some made hills about five miles from Sandhurst on the McIvor Road. A rush to the place - called the Homebush Diggings - ensued and in a fortnight several hundred diggers had marked out claims and commenced sinking, but only a few of them bottomed, and no finds worth mentioning were made. The sinking is from 20 to 40 feet ... The place is now almost deserted.³

June 1877: Sandhurst Division [N G Stephens]. The yield of quartz during the past quarter is less than usual; and some of the large mines have stopped, or the number of hands has been reduced. Mine owners seem disposed to carry on their works as much as possible by contract or tribute rather than employ wages labour. They also appear determined to reduce expenses as much as possible by amalgamating, by devising means of lessening the consumption of firewood and cost of sinking, and extraction of gold. Mr Lansell is introducing a patent rock-borer (Ingersoll's), worked by compressed air; by which he expects to prove the shafts may be sunk more expeditiously if not at a much less cost than at present. From discoveries made during the last 3 months our prospects are rather encouraging. The South Garden Tribute Company has found good looking stone, carrying gold, at 710 feet; and the Sea Company, on the same reef, at 780 feet. The Hercules and Energetic Company, on the Victoria Reef, met with a new make of stone at 906 feet. Both the New Chum and Victoria Companies, and the Windmill Hill Company have good prospects at great depths. The Catherine Reef U. C Company also found rich stone at their 740-foot level. At the Whipstick, the Fruhling Reef and Old Toms Reefs have been yielding better, and payable gold has been found at the Alexander Reef at Lockwood. Several alluvial rushes have taken place. The first was to Fletcher's Creek, Marong, in from 6 to 12 feet sinking; here the gold is very heavy. Within a few days about a 1000 men were at work; but the ground was patchy, and a great many cleared out after 2 or 3 days trial. Prospectors are erecting a puddling mill, and by paddocking the ground they hope to do well. There are about fifty working there at the present time. A small rush took place to Duke's Flat, about 4 miles from Sandhurst on the Marong Road, and another in the neighbourhood of Dead-dog Gully, on the Sandhurst side of the Spring Gully Reservoir; but neither were of much consequence. A week or two since a continuation of the Forest Lead at Huntly, about 5 1/2 miles from Sandhurst, was discovered and given employment to a few miners; and a rush has just taken place to Mopoke Gully, near Sebastian, where prospectors obtained 8 1/4dwts from off three bottoms, from 5 to 6ft sinking.⁴

Sept 1877: The yield of gold during the past quarter is less than usual, and mining affairs have been in a very dull state, but there has been a number of hopeful and important discoveries in the principal lines of reef, and in every part of the district. In connection with hopeful prospects Mr Lansell purchased two large mining claims, the Sandhurst Company's on the American Reef, and the Collmann and Tacchi Company's claim on the Wetherall Reef, both with machinery thereon which has lain idle for years past; also the greater portion of shares in the Great Northern Company's claim on Johnson's Reef North, which otherwise would now be idle. A great desire is evinced for the importation of rock-boring machines and diamond drills, and steps are being taken to import them as soon as possible. One company contemplates letting a contract for sinking and cross-cutting to Ford and Company, with their patent rock-boring machine. Investors say they would pay a call if the prospecting work, such as sinking or cross-cutting, could be executed in, say, a month, where they would not if it took, say, three months to do it. It may therefore be expected that in a short time mining operations will be carried on much more expeditiously, and probably with improved results.

1 Mining Surveyors' Reports, Dec 1876

2 Mining Surveyors' Reports, Dec 1876

3 Mining Surveyors' Reports, March 1877

4 Mining Surveyors' Reports, June 1877

It is to be regretted that the Hustler's Reef Company's claim having ceased work the water has risen considerably in several claims, and serious results might ensue. Several claims on the Garden Gully line have also been flooded on account of the stoppage of some of the claims. Much attention has lately been given to the invention of safety cages and signals. Messrs Jackson and Middleton have exhibited a safety cage, the principle of which is much admired; and Mr Jennings, mining manager of the Pandora Company, has constructed a simple and effective contrivance for notifying the engine driver in case of over-winding or starting in the wrong direction. The engineer at Koch's Pioneer Company (Mr Saul) has also constructed an improved cut-off, or expansion valve, for their crushing engine, which effects a material saving in fuel, and gives great control to the governors. Several prospecting claims in alluvial have been taken up in different parts of the district, but the only one of importance is that at Wilson's Hill, Marong, where a considerable number of men are at work, and they appear to be quite satisfied from the results of a few claims bottomed that they have struck a good lead; the sinking is about 130 feet.¹

Dec 1877: Sandhurst Division [N G Stephens] - The most noticeable thing in connection with mining affairs during the past quarter is the completion of the Coliban scheme, whereby a large supply of water is now available for sluicing. In consequence claims have been taken up for that purpose, but little, however, has been done in that way as yet. Quartz mining generally has not been carried on with much spirit, but a revival is shortly expected. Deep sinking is persisted in, as there are sufficient inducements for doing so. The Victoria Reef Quartz Company, whilst sinking at 1,240 feet, cut a spur showing gold; and the Victoria Reef GM Company have seen good gold at 970 feet. There are good prospects all along the Garden Gully line; and the Great Extended Hustlers have found good stone. A few claims at the Fröling and Blue Jacket reefs, at the Whipstick, are yielding well, but are not worked energetically. The Alexander Reef, at Lockwood, is also paying well. A few are doing pretty well at Wilson's Hill, Marong, and the rush is progressing. The sinking is from 120 to 150 feet. At Elysian Flat a nugget weighing 75 oz was found in old workings at 40 feet, a few days since, by Mr James Webster. The number of public companies and holdings are being lessened by amalgamation. The calls during the past three months amount to £12,553, and the dividends to £22,375. A trial of Nance's new safety cage was made at the City of Sandhurst Company's mine the other day, and it gave great satisfaction. It is of very simple construction, but it effected the desired object in every instance.²

Dec 1877: Ellenborough, St Mungo and Devonshire Reef - Machinery erected.³

Mar 1878: Mining affairs have been in a rather dull state this quarter, and the quantity of quartz crushed is much less than usual, but the average yield per ton is slightly higher than it has been for some time past. In the Great Extended Hustler's Company's mine a reef 20 feet thick, showing gold, has been struck at a depth of 1,200 feet, and it is expected that the eastern leg of it will turn out rich, if so, it will influence the whole line. Already the shares have advanced considerably in value. The United Pyrites GE Company has adopted the chlorine process for treating pyrites. The question "Which process is best?" is exciting considerable interest. Some claims have been taken up for sluicing purposes, and an alluvial prospecting claim has been marked out at Fletcher's Creek, Marong, the gold from which is very coarse.⁴

June 1878: Mining prospects have much improved during the past quarter. The average yield of quartz is higher. The share market is quite active and many feel disposed to invest. Several parties of tributers are doing well, also working miners in claims (held under the bye-laws) in various parts of the district. Investors, speculators, and working miners appear much more cheerful now than they did three months since. Since the introduction of water from the Coliban, several sluicing parties have been formed, and on the whole I think they are doing pretty well. They will probably be more successful as they get used to (what is in this district) a comparatively new branch of mining, and when their appliances are more perfect. The quantity of water sold for mining purposes during the past quarter was 19,941,000 gallons; of this quantity 12,000,000 gallons were for sluicing purposes.⁵

1 Mining Surveyors' Reports, September 1877
2 Mining Surveyors' Reports, December 1877
3 Mining Surveyors' Reports, December 1877
4 Mining Surveyors' Reports, March 1878
5 Mining Surveyors' Reports, June 1878

Sept 1878: There has been some excitement in mining affairs during the past quarter, consequent on the discovery of good reefs in old mines on established leads, and the increase of yields generally. The average yield of gold from quartz is considerably higher than it has been for some time past. A large number of tributers and contractors are now engaged working the companies' mines, and a considerable quantity of ground has been taken up by private parties of miners. Some sluicing claims have also been taken up lately, and from the number of enquiries made with regard to the mode, &c., of taking up ground for this purpose, I am inclined to believe that it will not be long before a considerable number of miners will be engaged in this branch of mining. Compared with six months ago there are few miners out of employment. A very rich find of gold has been made on the Red Jacket Reef, Whipstick, within four feet of the surface. It induced many to take up claims on that line, but, from the known character of the district, it is doubtful if the reef or the gold will extend to the next claim. The quantity of water sold for mining purposes during the past quarter is as follows:

To quartz mining companies	11,267,000 gals
To sluicing companies	<u>11,000,000 gals</u>
	<u>22,267,000 gals</u> ¹

Dec 1878: There has not been so much excitement during the last three months, but mining affairs are in a healthy condition. Less quartz has been crushed, but the average yield is very good, 9 dwts 20 grs per ton; and the workings generally have paid as good or better dividends than usual. Deep sinking is carried on with success; but it is the opinion of many who know this goldfield well that cross-cutting has hitherto been unjustifiably neglected. If this opinion is acted on, and well carried out, I have no doubt that good payable discoveries will be the result. The quantity of water sold for mining purposes during the last quarter was 46,621,000 gallons ²

Dec 1878: Shenandoah, New Chum Reef, Erecting ten additional head of stamps.³

Mar 1879: There has been a slight falling off in the quantity of quartz produced during the past quarter, and the average yield of gold therefrom is somewhat lower. The want of rain has been severely felt in portions of the district; some claims and machines have had to cease operations in consequence. In other parts the supply of water from the Coliban has afforded employment to a great many miners. Between Spring Gully and the White Hills numerous parties are engaged in sluicing ground that has remained unworked for many years, and I believe that most of them are doing well. One party on the Third White Hill (McGan and Co.) employ more than thirty men, and work night and day. In the subjoined tabular statement some good yields from quartz will be found, notably the United Hustler's and Redan Companies, from a discovery made in a cross-cut. The Carlisle North Garden Gully and Pass-by United Company, on the Garden Gully Reef, are daily expecting to meet with a new reef in a cross-cut they are putting in to the west. If they succeed in finding one that is payable, it will be of great importance to the district. The quantity of water sold for mining purposes in this division during the past quarter was 104,000,000 gallons.⁴

Mar 1879: Great Southern Garden Gully, Garden Gully Reef - New crushing machine, 24 stamps and a winding plant erected.⁵

June 1879: There is little new to report in quartz mining during the past three months. The quantity of quartz crushed is about the same as in the last quarter, and the average yield of gold from it as nearly as possible the same, viz., 8 dwts 4 grs per ton. The number of public companies have decreased by amalgamation, but a great many private parties of miners have commenced mining on their own account in preference to taking tributes. On the Deborah reefs, west of the Garden Gully line and south of the railway, several private claims are yielding well. The eastern ground of the Hustlers line of reef is improving in appearance. Since my last report alluvial prospecting claims have been taken up as follows:- At Elysian Flat, prospect reported 1/4 dwt to the dish; 21 feet sinking. At Pahlow's Gully, Whipstick, 3 or 4 feet sinking, can made from 5s to 10s per day. At Upper Sheepwash, surfacing, 1 oz 18 dwts for two days' work. At Granite Gully, Shelbourne, from 8 to 10 feet sinking, 5 dwts per load. Eight sluicing claims have been taken up in the following localities:- Opossum Gully, Adelaide Gully, Tipperary Gully, Kangaroo Gully, Fourth White Hill, and First White Hill.

1 Mining Surveyors' Reports, September 1878
2 Mining Surveyors' Reports, December 1878
3 Mining Surveyors' Reports, December 1878
4 Mining Surveyors' Reports, March 1879
5 Mining Surveyors' Reports, March 1879

At the White Hills a considerable amount of money and labour have been invested in sluicing operations, and fair returns have been obtained, which the sluicers hope to increase by crushing the cement in connection with the washdirt. With a more abundant supply of water, many more miners would be engaged in this branch of mining. The quantity of water sold for mining purposes during the past quarter was - For crushing, puddling, &c., 12,934,000 gallons; for sluicing, 101,352,000 gallons: total, 116,286,000 gallons. The following information respecting the United Pyrites Company's Chlorination and Amalgamation Works, Sandhurst, has been kindly supplied by C.W. Chapman, Esq., secretary to the company. These works up to about twelve months ago were simply for washing, grinding, and amalgamating with mercury, and for which there were three reverberatory furnaces, two of J. Edward's patent grinding machines, and sixteen arastras and separators, driven by a 20 horse-power engine, which also drove a plunger pump. The works were capable of treating 45 tons per week, and gave employment to eighteen men and boys. Seven of these arastras and separators were taken out, and a large addition to the building made for a chlorination plant, the rest of the old plant remaining the same, so as to treat the sulphides by either process, to suit the requirements of customers. The chlorination plant consists of four vats, to contain four tons each - one vat for three tons, and one for two tons; a considerable number of earthenware gas generators, heated by loose steam, and a large number of earthenware vessels to hold the auriferous solution and solution of sulphate of iron. Attached to the chlorination establishment is room for storage, a drying oven, and three melting furnaces. The chlorination plant is capable of treating forty-five tons per week, and the amalgamating or old process about thirty tons per week. Attached to the establishment is a four-stamp battery for crushing quartz for filter beds or any other hard material, and the water supply is obtained from three large dams belonging to the same proprietary. The works employ twenty-one men and boys, two men and drays carting pyrites, and three men and drays carting firewood. A very large quantity of sulphuric, nitric, and hydrochloric acid, mercury, soda, meal, peroxide of manganese, sulphate of iron, firewood, coke, charcoal, crucibles, borax, nitre, sulphide of iron, pitch, tar, lead pipe, indiarubber sheet and pipe, and glass and pottery ware, is used up. The raw pyrites as it is brought from the crushing machines is charged into the reverberatory furnaces, and roasted until all the volatile matters are driven off and the sulphates converted into oxides; it is then ground, moistened, and placed in the vats, which are hermetically closed; the chlorine gas is then turned on for a sufficient time to attach the gold and convert it into chloride. The covers are then lifted, and the vat filled with cold water, which, after having dissolved the auriferous chloride, is run through lead pipes into earthenware vessels. In these the gold is precipitated from the mother liquor by sulphate of iron; the waste liquor is syphoned off, and the cement gold caught on filter papers placed within earthenware funnels, dried in the oven, and smelted in Hessian crucibles in a wind furnace. The gold produced in this way realises from £4 2s 6d to £4 3s 0d per ounce. The value of the plant, machinery, dams, stores, &c., is about £5,000, and about from £500 to £700 more is generally employed in purchasing pyrites. The sulphides from St Arnaud, Burke's Flat, and other places which resist ordinary processes, yield their gold readily to this method. Pyrites tailings from the amalgamation process when re-worked by chlorination always yield a profit. These works have never been stopped since starting except for overhaul at Christmas. Railway freight is a heavy charge upon this industry, especially in the case of acids, on which, although the rate has been reduced by one-half, it is still very heavy - £2 19s per ton for full truck loads.¹

Sept 1879: During the past three months a greater quantity of quartz has been crushed, but the average yield is not so good as that of last quarter. Very good yields have been obtained from quartz obtained at from 800 to 1,000 feet in depth. New finds in old mines on the principal lines of reef have been numerous, and some of them have proved valuable. It is generally believed that, were the mines thoroughly prospected by means of crosscuts driven by the aid of speedy rock-borers, the finding of payable reefs would be of more frequent occurrence. A few rock-borers are in use here, at a saving of from 20 to 25 per cent in cost of crosscutting and sinking. Mining prospects have improved during the past quarter, but unfortunately a strike of miners is immediately expected, which will probably seriously affect all concerned in mining. About three weeks since the tributers in the St Mungo Company's lease struck a very rich leader at 60 feet from the surface, the first ton of which yielded 256 oz of gold. The stone continues exceedingly rich. About the same time a nugget of gold weighing 38 oz was found in the Whipstick 6 inches below the surface. At the present time it is rumoured that a rich quartz reef has been discovered about 4-1/2 miles east of the forest ranger's residence in the Kamarooka and Egerton State forest. The quantity of water sold during the quarter for mining purposes was - For crushing, &c., 15,680,000 gallons; for sluicing, 86,660,000 gallons; total 102,340,000 gallons.²

Sept 1879: Garden Gully United, Garden Gully Reef - New and extensive winding machinery being erected over No. 3 shaft.³

1 Mining Surveyors' Reports, June 1879

2 Mining Surveyors' Reports, September 1879

3 Mining Surveyors' Reports, March 1879

Dec 1879: A slight revival in quartz mining has taken place during the past three months. The average yield of gold is higher than it has been for the past twelve months. The year closes with improved prospects and increased confidence in our mining resources. Gold-bearing quartz has been discovered, at a depth of 1,250 feet, in the Koch's Pioneer Company's claim; and also a large body of stone in the Great Extended Hustler's Company's ground, at a depth of 1,350 feet. A strike occurred amongst the miners at the commencement of the quarter, occasioned by a threatened reduction of wages. From 100 to 300 men were out of employ for a few weeks, but the majority of them are engaged again at the old rate, whilst others have taken contracts or tributes. Considerable progress has been made in the adoption of safety-cages and in fixing apparatus for signalling in mines. In connection with a signalling apparatus a great many companies have adopted a speaking telephone recently introduced here, by which means a conversation may be carried on between any person on the surface and those below at any level of the mine. The instrument is simple in construction, inexpensive, and easily fixed. Some of the managers of claims in which the telephone has been fixed have reported very favourably of it. There are many kinds of signalling apparatus in use at the present time - some of them very effective and deserving of notice. The quantity of water sold during the quarter for mining purposes was - For sluicing, 111,300,000 gallons; for crushing, 15,534,000 gallons; total, 127,834,000 gallons.¹

1879: Whipstick. By 1879, much profitable work had already been accomplished on the quartz reefs of the Bendigo goldfield. Several lines of reef had been prospected or worked for some miles but after tracing them from Bendigo to the northern boundary of the Eaglehawk Borough, little effort had been made to locate them further. Beyond this point, several reefs disappeared beneath the dense bush and scrub of the Whipstick. Except for the occasional exposure on hilltop or gully, little trace of them was visible. In 1879, Reginald A F Murray, a geologist with the Victorian Department of mines was engaged to trace two lines of reef, the Garden Gully and Lightning Hill for a distance of three miles northwards into the Whipstick, from the Eaglehawk boundary. The Eaglehawk Borough Council supplied the labour for clearing along these lines. Much quartz mining had already been done on the Lightning Hill Reef, particularly on Lightning Hill itself. On the Garden Gully line the Robing Hood Company had, with little success, been engaged with mining operations for some years. Although this mine was actually on the Garden Gully line, the locality was known as the Moon Reef. [Murray's survey] ... disclosed that the two reefs, although 3/4 of a mile apart, were practically parallel. A number of companies worked on the Lightning Reef over the ... years with mostly disappointing results. The Lightning Reef Gold Mining Company was formed in 1864, working on a claim which had previously yielded from 4 to 7 oz. to the ton ... Other early companies on this reef were the King of Prussia, the Excelsior and Rifle Companies, none of them particularly successful. The best claim on Lightning Hill was that of Pascoe and Simmonds who in the late 1870's and 80's worked a big reef of 20 to 30 feet wide from the surface to 220 feet. They crushed 12,000 loads for 11,000 oz. of gold. After Pascoe and Simmonds had abandoned their lease, their extensive system of tunnels in the hillside became a rendezvous for several generations of Eaglehawk boys.²

1878: Robin Hood Company was founded in the mid-1860's and one report in *The Bendigo Advertiser* 14 July 1865, stated that a new whim was in the course of erection to enable further shaft sinking to proceed. Two years later, when the shaft had been sunk to 300 feet, the mine was not paying, but in June 1868, the company crushed 130 tons of quartz for 86 oz, their largest return to date. By 1871 the Robin Hood Company had been reformed into a Registered Company with capital of £20,000 ... This company was not successful, and in 1878 their lease, on which the shaft had been deepened to 400 feet and a winding plant erected, was purchased by an adjoining company, the New Moon Company who were later to recoup a fortune from the Robin Hood claim.³

1 Mining Surveyors' Reports, December 1879

2 Perry, 1975 pp214-227

3 Perry, 1975 pp214-227

1880s: In 1861 the Cornishman, Abraham Roberts had started manufacturing small forge and hand tools in a very modest way, but by the 1880s his United Iron Works in Wills Street, occupied a whole block in the city area, was employing two hundred men and had become one of the more important foundries in the colony. The engineering plants it produced for some of the Sandhurst mines were ‘models of strength, utility and perfection of design’ and amongst the most sophisticated of their day. The foundry erected the great crushing battery of 105 stampers for Lansell’s Big Blue Mine on Sheepshead Hill, then the largest quartz-crushing battery in Australia. It was also responsible for the revolutionary winding-plant with the first double cylinder engine, compound air compressor and high pressure boilers for the Great Southern Mine. It produced some of the biggest winding machinery then in use and its boilers were known wherever there were mines. There were other foundries - Gripe’s City Foundry in Wattle Street, Jopling and Sons at Eaglehawk, Carter and Brown in Creek Street, Dunn and Redpath, Lansell’s private foundry operated by Hocking in Lyttleton Terrace, and Mitchell and Osborne’s at Ironbark. At Epsom, John Goyne’s Stamper Grating Works were exporting ultra-fine mesh sieves for use in crushing batteries to mines as far afield as South Africa, the Straits Settlements and the Dutch East Indies, whilst at his engineering works at Long Gully, Tom Dennis was turning out the impedimenta of mining - cages, tanks, trucks and buckets. Also sited amongst the crowding poppet-heads of Long Gully was Taylor Horsefield’s Engineering Works.¹

1880s: Sandhurst had not only emerged as the colony’s most important quartz mining centre; it was also fast becoming the marketing and commercial hub of a rapidly expanding agricultural district. Sandhurst was beginning to reap the benefits of the Land Acts that had fragmented the pastoral runs into selections. Wagons trundled endlessly into town with hay from surrounding districts to feed the chaff mills, or with wheat for the flour mills, or swaggered in heavily laden with grapes for the wine-presses of Kahland’s big winery in Mitchell Street. Wine-making was enthusiastically hailed as the industry that would save the colony as the golden days drew to a close. Grapes thrived in the clayey, ferruginous soils of the goldfields and by the eighties ‘the whole of the northern slopes of the ranges in the centre of Victoria, from Stawell to Bendigo, a zig-zag line of 200 miles of mountains and gullies [were] dotted with small vineyards’. [T.W.H. Leavitt and W.D. Lilburn (eds.), Jubilee History of Victoria and Melbourne, pp. 155-6]. On the Sheepwash and Axe Creek, at Marong and Epsom and along the Emu Valley, vineyards were well-established. Local vigneroners were proudly displaying medals and certificates won at exhibitions in Vienna and Paris and Philadelphia ... The scourge of *phylloxera* lay just ahead.²

Mar 1880: The past quarter commenced with good prospects, and shares have risen in value. A reef has been struck in the Great Extended Hustler’s Reef Company’s mine, at a depth of 1,350 feet, but no gold has been seen in it as yet; and in Koch’s Pioneer Company’s mine a reef was struck at 1,250 feet, with only a little gold showing. More attention is now being paid to cross-cutting at lesser depths, where doubtless new and payable reefs will soon be discovered. The Garden Gully United Company, Great Extended Hustler’s Reef Company, New Chum Reef Company, and others, have ordered rock-boring drills, which shows confidence in their respective mines, and an inclination to prospect energetically and work economically. The Londonderry drainage machinery has been the means of enabling several companies on the Garden Gully Reef to resume work (with profitable results, after having been for a long time idle. When any ground has become forfeited, I have found, in most cases, that there has been more than one applicant for it. The water from the Coliban has given employment to some hundreds of sluicers in the neighbourhood of the races, many of whom would have remained idle without this means of obtaining a living. The total quantity of water sold for mining purposes during the last quarter was 118,000,000 gallons.³

1 Cusack, 1973, p176

2 Cusack, pp. 178-9

3 Mining Surveyors’ Reports, March 1880

June 1880: A revival in mining has taken place during the past quarter, which may be attributed to the rich yields from the United Hustler's and Redan Company's mine, the success attending deep sinking on the Garden Gully line, the discovery of a new and payable reef at Spring Gully, also at Sebastian, and to generally improved prospects. The greater part of the claims that have been taken up are situate at Raywood, Sebastian, Hustler's, and Redan Reef, Long Gully; Tyson's Reef, and the Diamond Hill line, Spring Gully. A few days after a lease for quartz mining purposes had been marked out at Raywood, a nugget weighing about 60 oz was found a few feet only from the boundary of the lease (in alluvial, about 7ft from the surface), in a line with the reef. At Sebastian, some tributaries of the old Frederick the Great Company have found good stone on a continuation of the reef which gave such very rich returns to the company not long since. The discovery caused some excitement, and nearly all the available ground in the neighbourhood has been taken up. The reef, which caused the rush near Spring Gully, was found in the bed of the creek, within a few feet of the surface, and it shows gold freely. This part of the district has never been prospected to any considerable depth. With regard to deep sinking, Koch's Pioneer Company, on the Garden Gully line, have opened on a reef at a depth of 1,267 feet, which has proved payable. It is from 8 inches to 5 ft in thickness. From 266 tons of quartz the company obtained 179 oz of gold (over 13dwts to the ton). The manager (Mr Lewis) believes it to be a saddle reef, although the formation is not so well defined as usual in this district... In the Carlisle, North Garden Gully, and Passby United Company's mine a reef has been struck at 1,291 feet from the surface. About 2 tons of stone have been broken out, which shows good payable gold. The manager (Mr Scott) is certain that it is the cap of quite a new reef in that mine. The stone is heavily charged with mundic and galena. The quantity of water sold during the quarter was:- For sluicing, 86,500,000 gallons; for mining other than sluicing, 12,000,000 gallons - total, 98,500,000 gallons.¹

Sept 1880: So many good discoveries have been made both in old and new ground during the past quarter than with regard to mining it may be said to have been the most eventful period in this district for many years past. consequently several old companies have resumed work, and a large extent of new ground has been taken up. Activity prevails from one end of the district to the other (embracing several parallel lines of reef), and the greatest eagerness to secure ground has been exhibited, a desire considerably justified by prospects obtained. The discovery of gold by the diamond drill some months since in the GG Consolidated Co.'s mine, and the new reef found by Brookfield and Company at Spring Gully, has resuscitated the southern portion of the district; and a new and payable reef, found in the Egerton Forest by Blanchan and Co., about 18 miles north of Sandhurst, has induced several other parties to take up ground on that line. Great attention is now being paid to cross-cutting. There are good many rock-borers at work, which are a decided success; all who are able to do so, where it is possible to work them, are taking steps to procure one or more, but deep sinking is not abandoned, as two or three companies are erecting machinery powerful enough to enable them to sink to a depth of from 2,000 to 3,000 feet. In alluvial mining payable gold has been found in 50-feet sinking in private ground, near Adelaide Hill, about seven miles north of Sandhurst. A great rush took place, and an immense number of claims were marked out; many of them have been abandoned, but a good number are still being worked with profitable results. Several puddling machines have been erected in the vicinity. In connection with the washdirt, a quantity of cement carrying payable gold is found, which has to be carted a distance of about four miles to crush. It is thought that the lead will find its outlet in the Lower Huntly lead. The Coliban water has enabled many miners to obtain a living. One man engaged in digging one of the races lately constructed (not searching for gold), found a nugget worth £40, and other nuggets of less value were unearthed in the locality; this shows that the race traverses a gold-bearing country. Quantity of water sold during the quarter, 112,000,000 gallons.²

1 Mining Surveyors' Reports, June 1880

2 Mining Surveyors' Reports, September 1880

Dec 1880: Mining operations have been carried on with great spirit during the past quarter in all parts of this division; a large quantity of quartz has been raised, and the average yield of gold is higher than has been for a considerable time past. Our prospects for the coming year are very good. An immense quantity of ground has been taken up, especially in the southern portion of the district, on and in the neighbourhood of the Glasgow, Carshalton, Stafford, and Napoleon reefs. Claims in that locality which have had little or no work done in them for a long time past are now being worked energetically. The greatest activity also prevails at Eaglehawk, in consequence of the discovery of a very rich reef in the Ellenborough Company's mine, on the St Mungo and Devonshire line. It is 43 feet in width, and averages 22-1/2 dwts of gold per ton of quartz. This discovery is of great importance, not only to the shareholders in that mine, but it has indicated, with every hope of success, the direction in which workings in the adjoining claims should be carried on. It has also restored confidence, and given a great impetus to mining in that locality. At Sebastian the Frederick the Great Company have been doing well, with a large reef yielding nearly 8 dwts to the ton, taken from the surface to 100 feet only in depth. A considerable amount of cross-cutting is being carried on now. Rock-borers are doing their work satisfactorily, and their success should strongly recommend them as an efficient means of lessening the cost of mining. The deepest shafts in Sandhurst are not being further sunk, but may be shortly, as the Carlisle, North Garden Gully, and Passby United Company, on the Garden Gully Reef, have obtained 340 tons of quartz, averaging 12 dwts to the ton, at their 1,320-foot level. In addition to this, the quartz contained a large percentage of pyrites, which has not yet been treated. The alluvial diggings at Adelaide Hill have been almost deserted, but there are three or four claims which will prove payable. The supply of water from the Coliban furnishes employment to a great number of sluicers. The quantity of water sold during the quarter was, for sluicing purposes, 103,500,000 gallons; for other than sluicing purposes, 20,500,000 gallons; total, 124,000,000 gallons.¹

1880-85: Despite a declining annual gold production, the period was a generally stable one in the mining industry. From the turn of the decade until 1885, this was due largely to the successful operations of the Garden Gully United Company and if not spectacular, annual yields showed an improvement at least, on those of the late seventies. Later in the decade, claims on New Chum Line began responding well and the Johnson Line at Eaglehawk was the most prosperous on the field. Investors had little cause for complaint. Between 1880-85, against £977,584 paid in calls, the Sandhurst mines reimbursed them with £1,723,886 in dividends. After 1885, yields began declining and a downward production curve continued unarrested for several years.²

May 1881: Sandhurst Division [N G Stephens] The past quarter has been an eventful one in mining affairs, which has been carried on with great success. The continuous rich yields and large dividends from the Garden Gully United Company, New Chum Consolidated Company, Ellesmere Company, United Hustler's and Redan, and the Ellenborough Company have assisted materially in establishing confidence in the mining resources of this goldfield, and have attracted many investors from other parts of the colony. About 2 months since the London G G Company struck a good reef in their ground on the G G Reef, Golden Gully, at a depth of 100 feet, which reef has averaged 3ozs. to the ton. The discovery induced a great rush for the ground in that locality, and the success then attending mining in nearly every portion of the division caused a general demand for leases and shares. The amount of business transacted in mining, and the excitement attending it, has not been equalled since the memorable period of 1870 and 1871. At that time many thousands of pounds were spent in sinking shafts that were abandoned before anything payable was discovered, but the outlay of that money has been a great help to those who have recently taken up the same ground, as a little crosscutting in some of these mines has resulted in the discovery of reefs. Abandoned shafts really represent capital and saving of time, and should be protected from injury. A promising reef has been discovered about 17 miles from Sandhurst. On the Old Tom Reef, Whipstick, several parties are doing well, and Mr. Bolle has come on an exceedingly rich patch in his claim, but all the reef is good. Unfortunately he is obliged to cease working his engine on account of want of water. A very promising reef has been found in the Back Creek Ranges, about 2 miles south of the City of Sandhurst. It is thought to be a continuation of the Hustler's Reef, and if so, is an important discovery. Yield of gold during the last 3 months have been in excess of the previous quarters, but, owing to the great amount of business and excitement in mining affairs, I have been unable to obtain anything like complete returns.³

1 Mining Surveyors' Reports, December 1880

2 Cusack, 1973, p171

3 Mining Surveyors' Reports, May 1881

June 1881: Sandhurst Division [N G Stephens]. The dividends paid in this division during the past half-year amount to the large sum of £136,000, or at a rate of over a quarter of a million sterling per annum. The Shenandoah Company have discovered a saddle-formed reef in their 877-foot cross-cut east (no. 13 level) ... A rock borer is driving the level north. ... The adjoining claim to the south (the New Chum Railway Company) has developed a rich reef at 840 feet in depth; from it 28 tons of quartz have been raised, which yielded 2920zs. of gold ... This claim contained rich reefs near the surface, and it affords another example of rich shallow reefs overlying no less rich reefs at great depths. This company also employs a rock-borer to drive levels north and south on the reef, obtaining the motive power from the air compressor belonging to the Shenandoah Company. Koch's Pioneer and the Windmill Hill companies are both driving cross-cuts east at 400 and 600 feet respectively. The former company is constructing their cross-cut with a boring machine, and is driving a level at 1300 feet in depth with a second rock-borer. The mining companies here generally are becoming alive to the importance of thoroughly testing the ground on both sides of their shafts, convinced of the desirability of so by the splendid reefs discovered by that means in the Ellenborough and the United Hustler's and Redan mines. The Confidence Extended Company, on the Windmill Hill, supplies another instance of a gold-bearing reef having been discovered by cross-cutting a greater distance into the strata than usual. The results of the enterprise of the Ellenborough Company are still conspicuous in the Eaglehawk portion of this division. Numerous shafts continue to be sunk, cross-cuts to be driven, and new machinery to be erected; and no doubt a lengthened period of prosperity is dawning for many mines in the vicinity of the Ellenborough, in consequence of the works of this mine proving that the formation of auriferous quartz is not of limited extent. Quite recently it was estimated that 2,000 tons of vein-stuff fell from the roof of this mine, which showed that the quartz still higher up was increasing in width, and also continued to be auriferous. Air-compressing and rock-drilling machines are here at work, and they must continue to reduce the time considerably that would otherwise be occupied in reaching and developing the continuations of many of the rich reefs. Several mining ventures have been started to work the reefs at Sebastian and vicinity, some of which paid good dividends. The quantity of water sold during the quarter for mining purposes was 88,500,000 gallons.¹

Sept 1881: Sandhurst Division [N G Stephens]... there is evidence displayed of more perfect confidence in the future prosperity of mining than at any time in the past. The practical proof of the correctness of this view is provided by the continuous outlay of capital in machinery of all kinds - from expensive tramways to the erection of large and more powerful winding engines capable of working to depths below 2,000 feet. In addition, the number of boring machines, for blasting, continues to increase. In this district it is becoming daily evident that mining is steadily assuming a more scientific industrious aspect; and it is worthy to note that our miners and mining managers are in request in New South Wales, South Australia, Tasmania and India. Attention, in mining circles, is still mainly bestowed on the development of the large and rich formation on Snob's Hill, Eaglehawk. In cross-cutting, at 180 feet, the Union Jack Company, Golden Gully, have good indications; and in the Lady Barkly Company's mine, at Eaglehawk, an auriferous reef, 4 feet wide, was found in cross-cutting at 180 feet. The Great Northern Company at Eaglehawk discovered an auriferous saddle-formed reef beneath the old formation, which was worked previously; the claims on that line having been lying idle until recently. The Victoria Reef Gold Mining Company also discovered a new gold bearing reef, by cross-cutting, at 1,160 feet. New winding machinery is being erected by the New St. Mungo Company, and a large plant is in course of erection on the Sheepshead line of reef. This reef has been almost abandoned for many years. The enterprise of our local capitalists extends even to Kamarooka, where the old Homeward Bound Reef has again been taken up, and work resumed. In alluvial mining there is little to remark upon, except that the Loyal Liberal Company, at Huntly, have obtained a good prospect ... This claim is situated close to the Bagshot Paddock, and is on the old Huntly Deep Lead ... In the same locality Mr. Britt has floated a company, and should they obtain payable stuff, it will give great impetus to mining at Huntly. I might add that several experiments have recently been made here with an explosive named "explosive gelatine" which have proved satisfactory. The Great Southern Company have adopted Needle's patent gas, and have the various buildings connected with their pumping, winding and crushing machinery lighted up with it, and, so far, it has given them so much satisfaction that the directors intend having it laid on to all of their plats and permanent levels. I am informed that companies using air compressors for rock drills can utilise the arrangement for making gas instead of using air pumps. The quantity of water sold during the past quarter for mining purposes was 107,000,000 gallons.²

1 Mining Surveyors' Reports, June 1881

2 Mining Surveyors' Reports, Sept 1881

Dec 1881: Sandhurst Division [N G Stephens]. A considerable outlay has been made in the purchase and erection of more powerful machinery for pumping and hauling, and in patent rock-borers, which are fast coming into general use. The calls have of late been heavy, but have been well responded to, except in cases where the ground is taken up on outside lines for speculative purposes. There is little doubt that a large portion of the workings now being carried on in the mines is attributable in a measure to the rock-borers, which accomplish work in much less time than ordinary hand labour. The quantity of water sold during the past quarter for mining purposes was 177,000.000 gallons.¹

May 1882: Sandhurst Division [N G Stephens]. During the quarter quartz gold mining operations in this division have been carried on with great vigour, in fact it may be said that not for many years past, has so much energy been showed in prospecting. This is proved by the very heavy calls made, no less than £66,300 having been called up in 3 months, considerably exceeding the dividends, a state of affairs which has not been known here before. The portion of the division at present regarded as most important is the Snob's Hill Line where the discovery of a body of stone known as the Ellenborough Reef has reanimated the whole locality. The Belmont Company commenced crushing from this reef a few weeks since; they are obtaining very rich yields and their mine is now perhaps to be classed as the leading mine in the district. So far this is the only claim north of the Ellenborough that has reached the reef, but the other companies are vigorously searching for it, with good prospects of ultimate success. To the south, owing to the reef rising in that direction, there are several claims at work on it, but so far it has not proved as rich as to the northward. On the Devonshire Line a large amount of prospecting has been done, but without any great result at present. The Johnson's Line has been brought into some prominence during the quarter owing to the fine yields obtained, which has enabled the Princess Dagmar Company to pay regular dividends. The Johnson's and Webster's Company have had a trial crushing from the reef which proved to be very rich. The Confidence Extended Company has also been getting good returns lately. In other parts of the Eaglehawk district, there is a considerable amount of work going on with fair results. On the New Chum Line the returns have fallen off somewhat, but the Ellesmere, Garibaldi and New Chum Consolidated Companies mines have yielded well. Deep sinking on this line is being fairly tried as there are several claims below 1000 feet and it is reported that gold-bearing quartz has been discovered at 1,500 feet and 1,700 feet. The North New Chum has a shaft down 1,300 feet, while the New Chum Victoria Company have met with what is believed to be a payable reef at 1,223 feet and the Old Chum have similar experience at 1,106 feet. The operations of these mines are closely watched as the success or otherwise of deep sinking will influence future prospects. Further north on the Victoria Reef the Hercules and Energetic Company have obtained some good returns from a reef nearly 100 feet in width, but latterly the yield has fallen off. At the south end of the New Chum Line there is a large number of mines at work in deep ground, but the North Shenandoah is the only one which has yet obtained good results. On the Garden Gully Line the only company that is in a state of great prosperity is the celebrated Garden Gully United. Several of the mines are idle or doing very little. On the Hustler's Line there is a fair amount of work being done, but in nearly every instance with singular ill-success. A noticeable feature in connection with the mining operations here, is the considerable addition to mining machinery throughout the district, several large plants having been recently erected or are now in the course of erection. Labor-saving machinery, against which, at first a prejudice existed, is now largely used, and rock-borers are employed in nearly every mine of standing. These machines have proved themselves invaluable aids to prospecting. The Government drill erected underground at Koch's Pioneer Company's mine, Long Gully, will prospect a very valuable tract of ground, and the one at the Albert Tribute Company's ground at Diamond Hill has already discovered to valuable runs of stone which are now being tested in the higher levels. The quantity of water sold during the past quarter for mining purposes was 112,000.000 gallons.²

June 1882: Sandhurst Division [N G Stephens] During the past quarter mining at Sandhurst has attained a high state of prosperity, the gold yield from quartz having increased at a wonderful rate, being nearly 40 per cent. above the yield of the previous quarter. The returns for the past quarter are in excess of any previous quarter for years past. This will suffice to show that the amount expended in the last two years in prospecting is now bearing good fruit, but the increase in the returns is, as will be seen from the subjoined tabular statement, to some extent due to the fine yields reported by our two leading mines, the Garden Gully United and the Belmont and Saxby. A general improvement in the yield in the Snob's Hill and New Chum lines of reef, as the result of vigorous and judicious prospecting, has also contributed to swell the yields, while the dividends show a corresponding increase. The calls continue to be heavy, showing that progressive mines are actually at work. As a rule the calls are cheerfully paid.

1 Mining Surveyors' Reports, Dec 1881

2 Mining Surveyor's Reports, May 1882

With regard to mining operations, work on the leading lines is in full swing. On the New Chum line, the Shenandoah Company is getting good returns from a reef at 900 feet. On the Garden Gully line also the Londonderry Company have cut what promises to be a payable reef at 1,140 feet. On the Snob's Hill line the tracing of the rich Ellenborough Reef, north of the Belmont, has been a matter of greater difficulty than was anticipated. The once famous Hustler's line, which has been very dull for some time past, has become more prominent recently, owing to the Hustler's Reserve Company having obtained some very good stone. Probability of a large reef being opened up at Kamarooka; here the Homeward Bound Co. is actually at work, in opening up a big reef at 300 feet ... Should the first crushing, which will take place in a week or two, when the company's crushing machinery is completed, this portion of the district will be of considerable importance.¹

Sept 1882: Sandhurst Division [N G Stephens]. the prosperity noted in my last report has not only not abated but increased, and the district is now more prosperous than it has been for many years. The number of companies obtaining gold has increased, and the total yields are far in excess of those of last year, and from the present appearances the output of gold this will be the largest for many years past. The dividends also show a heavy increase. The calls continue heavy, showing that work in the progressive mines is being carried on with vigour, thus opening the way for further discoveries of importance. As a reward for the outlay in prospecting, the Devonshire line of reef has lately come into considerable prominence, several claims having obtained payable stone. There is a large area here, between the north end of the New Chum line and the south end of the Snob's Hill line, which has not yet been worked for many years. It is now being energetically tested. On the Snob's Hill line, only two or three companies are obtaining good returns, but most of them are obtaining sufficient to avoid calls and at the same time prospect the ground. On the New Chum line, most of the northern companies are prospecting the deep ground, but have not yet met with marked success. To the southward the different companies are more fortunate, and most of them are on the dividend list. On the Garden Gully line, the Garden Gully United Company, which has yielded the enormous quantity of 10 tons of gold, is still giving good yields, and promises to do so for years to come. On the other portions of the line, both north and south, the operations consist of prospecting the deep ground, with only moderate results so far. Further north, on Johnson's line, the result of the first apparently hopeless prospecting of the western ground has been of a very satisfactory character, for many of the claims are now sending in good returns. At Kamarooka, which has been almost deserted for 20 years ... mining is now being carried on with great activity, the line of reef being occupied for miles ... in about a week or two crushing plants will be completed and crushing started. Mining investors continue to recognise the advisability of working the ground with modern appliances, and new machinery is being erected in every direction, while the use of air compressors and rock borers continues to extend. The quantity of water sold during the past quarter for mining purposes was 87,000,000 gallons.²

Dec 1882: The progress which has been made in the mining industry of this division during the quarter just closed is very gratifying, and is quite equal to anticipation. The result of the great activity which has prevailed in mining here during the past two years is now being seen, and the heavy outlay in calls is bearing fruit in the shape of large increases in the yield of gold. The calls made in 1881 and 1882 show an enormous increase upon those of former years, and it is owing to the fact that nearly the whole of the money has been expended in legitimate and active prospecting that the district owes its present high state of prosperity. The effects began to be apparent towards the middle of the year, and since then the gold yields have rapidly increased. The result is that, although the returns in the early part of the year were small and showed signs of decadence, in consequence of several companies which had been large contributors in 1881 having exhausted the richest deposits at the levels at which they were then working, the total yield of gold for the twelve months is the largest for many years. Perhaps the leading feature of the past quarter is the manner in which the Eaglehawk portion of the division has come to the front. The Lady Barkly, a company who have been patiently working to prove the southern continuation of the rich reef from which the Ellenborough and Belmont companies obtained their large returns, have succeeded in proving the lode thoroughly, and are now getting very good returns. The United Devonshire, an adjacent claim, but on the western side of the line, are likewise getting excellent yields. The success of these two companies has infused great activity into those holding claims to the southward, and the result will be, without doubt, the proving of the large tract of ground, so far undeveloped, between these claims and the northern end of the New Chum and Victoria line. On the latter line, the more northern claims are chiefly engaged in prospecting in the deep ground, and their work is at present purely progressive.

1 Mining Surveyors' Reports, June 1882

2 Mining Surveyors' Reports, Sept 1882

The central group on this line, having almost exhausted the rich New Chum Consolidated Reef, are also mostly engaged in sinking, the object being to test the northern continuation of the lode from which the Shenandoah and North Shenandoah companies are obtaining good yields. This line of reef still maintains its position as the largest gold-producing line. On the Garden Gully line, the Garden Gully United Company's mine continues to be regular in the richness of its yields for which it has been famous for many years, but of the other claims there are no striking incidents to record, although a large amount of money is being expended in prospecting. Operations are principally confined to the deep ground, and the Unity Company has a fair prospect in a reef at the 1,260-foot level. On the Hustler's line there has been little change during the quarter, although there has been no cessation in the activity with which work has been carried on. The Park Company managed to get some rich yields from a reef at the 400-foot level, but they were not able to maintain them for more than a few weeks. With regard to the outside mines, it is to be regretted that the Kamarooka field, from which so much was expected, has proved a failure so far, the trial crushings of the two leading companies showing that the stone was not payable. Several of the claims were consequently abandoned, but the Homeward Bound Company is still prospecting. The Ascot Company is testing a new part of the division, at Strathfieldsaye, and a small trial crushing from their 190-foot level gave 14 dwts to the ton. There has been a large quantity of new machinery erected, and several contracts have been let for the erection of additional crushing plants, which are much required.¹

Mar 1883: During the three months just ended operations have been carried on with unabated vigour, and although the returns are not so large as those for the preceding quarter, yet this is usual for the early part of the year. The most noted developments have taken place on the Devonshire line of reef, near Eaglehawk, where there is a large area between the southern end of the Devonshire line and the north end of the New Chum line, which has, up to recently, been comparatively untried. However, the wave of activity which set in about two years ago has done much for this portion of the district, and the energy displayed in prospecting is slowly, but surely, being rewarded. At the north end of the Devonshire line the splendid big reef is gradually being traced southward, and those companies, such as the South Devonshire, which have got sufficiently well opened up on it, are getting handsome returns. On the eastern side the Ellenborough Reef, which runs very close to the Devonshire Reef, is also being traced south, with payable results. At the southern extremity of the area referred to, the Hercules has in the north shaft a very encouraging prospect in a well-defined reef at a depth of 450 feet. The companies holding the intervening claims are now busily engaged in prospecting, chiefly sinking. At Snob's Hill work is progressing steadily, but without any sensational results. On the New Chum line, the prospects on the southern end are fair, and the Eureka Company has just found what appears to be a payable reef, at the 1,145-foot level. In the northern mines there is not much doing beyond prospecting, the returns not being very large. On the Garden Gully line, matters are very dull, the Garden Gully United Company being the only mine yielding large returns. On this line the deep ground is being vigorously tried, and the Victory and Pandora shaft is down nearly 1,700 feet, a depth only exceeded by one mine in the division, Lansell's 180 Claim, which is down 1889 feet. On the Johnson's line, several companies are doing tolerably well, but better results could be hoped for; operations at the once famous Hustler's reef still continue very dull. In the mines off the main line of reef the chief place must be given to the Frederick the Great Company (Sebastian), from which for some weeks splendid yields have been obtained, principally by tributers. Kamarooka, as a mining field, has failed. At Golden Gully, matters have been very quiet. At Axedale, the Acott Company is doing good work in opening up new country, and their efforts seem likely to be rewarded with success. Upon the whole the mining industry continues in a very active condition, and steady progress is being made in the erection of new machinery, especially crushing plants. The quantity of water sold for mining purposes was 63,000,000 gallons.²

June 1883: Sandhurst Division (N G Stephens) - The quarter just closed has been a most successful one in every respect, and it is highly satisfactory to be able to anticipate a continued increase in the gold returns. On the New Chum line, besides the No. 180 claim, the deepest in the district, most of the miners are working in ground from 800 to even 1,500 feet deep. Some of the reefs on this line from which large returns were obtained last year have been worked out, but there are excellent prospects with regard to new formations. On the Garden Gully line the results have been poor, the only dividend-paying company being the Garden Gully United. However, deep sinking is being thoroughly tried, and the future is looked forward to very hopefully. The Hustler's Reef presents no new developments. A considerable amount of attention has been paid to outside places, and at Sebastian especially success has been pronounced.

1 Mining Surveyors' Reports, December 1882

2 Mining Surveyors' Reports, March 1883

The reef being worked at Sebastian is situated about seven miles north of Eaglehawk, and is supposed to be on the northern continuation of our main lines. It was very rich in former years, and is now giving splendid returns. Steps are being taken to prospect the ground intervening between this reef and the main field. Little has hitherto been done toward proving the southern continuation of this goldfield, but important work in this respect is performed by the Acott Company, working on the Gold Dust Reef, Axedale. The company has had three trial crushings, the last two averaging 1 oz to the ton. They are now erecting hauling and crushing machinery, and a considerable area of ground north and south of their mine has been applied for. The Kamarooka field has been almost abandoned after a partial trial. The quantity of water sold for mining purposes during the last quarter was 55,000,000 gallons.¹

June 1883: Eaglehawk Subdivision (F.R. Ellis) - During the past quarter operations have been continued with great vigour, and the returns show a market increase on the previous three months. At the south end of this subdivision the Johnson's Company are busy sinking and prospecting, and the New St Mungo Company have struck a payable reef at the 575-foot level, from which good returns have been obtained. Immediately to the north of this company's ground are the United and South Devonshire companies' mines. The reefs in this locality have been opened out and have given splendid yields of over 2 oz to the ton, the cakes of gold being the largest obtained in the subdivision for many years. By mining companies working further to the north, including the Lady Barkly, St Mungo, Sadowa, Ellenborough, and Belmont and Saxby companies, at Snob's Hill, a number of dividends have been declared. A large amount of prospecting is going on, owing to the Belmont and Saxby Company having struck good stone in their lower level, but, up to the present, the increased energy has not given satisfactory results. The prospects in the Catherine United Company's mine have considerably improved. The Specimen Hill United Company has come upon some very rich spurs, which, from appearances give promise of future success. The valuable crushings during the quarter, averaging nearly 1-1/2 oz to the ton, have given an impetus to mining in this locality. On the Moon line of reef prospecting is going on, and some good returns have been obtained by tributers. On the Black Forest and Lightning Hill lines matters are very quiet. Three new crushing works are being erected in this subdivision.²

Sept 1883: Sandhurst Division (NG Stevens) - During the quarter just closed mining operations have been carried on with the usual amount of vigour in this division, and with a fair average amount of success. The main centre of operations is the New Chum line of reef. On the north end of it most of the mines are down over 1,000 feet, and many are still sinking with the object of reaching the large and payable reef being worked in Lansell's 180 claim, at a depth of between 1,660 and 1,760 feet, the deepest workings in the Sandhurst Mining District. The 180 shaft is now down 1,932 feet, and it is hoped that another body of stone will be found at that depth. South of the shaft named, several companies are obtaining fair yields, while all are prospecting extensively. On the Garden Gully line the Garden Gully United Company are still obtaining good yields, but most of the other companies on the line are engaged in prospecting, principally in the deeper levels. Mining on the Hustler's line continues very dull, but there is no abatement in the amount of work being done there. At Golden Gully there is at present little activity, and most of the mines are idle. At Sheephead some valuable prospecting work is being carried on. At Axedale a run of new country has been opened up by the Acott Company, who have recently erected efficient machinery. A great many leases have been taken up, and as the company referred to have a very fair prospect it is likely that considerable activity will shortly be shown in this locality. At Strathfieldsaye another new run of country, somewhat in the same direction, is being prospected by the Piper's Hill Company. The claims at Sebastian are being steadily worked, and Bruhn's Tribute Company is turning out splendid yields from a very large reef. The country around Marong is to receive another trial, a company having recently been formed with that object in view. At Huntly the operations of Britt's Freehold, the only public company at work in the division, are being watched with interest. They are prospecting for the continuation of the Huntly Deep Lead, and have reached the gutter at 180 feet. At present they have great difficulties to contend with in the way of water and sand. When these obstacles are surmounted, they will be in a position to test the quality of the washdirt. Our crushing machinery is being increased, which looks well. The quantity of water sold for mining purposes during the past quarter was 60,000,000 gallons.³

1 Mining Surveyors' Reports, June 1883

2 Mining Surveyors' Reports, June 1883

3 Mining Surveyors' Reports, September 1883

Sept 1883: Eaglehawk Subdivision (FR Ellis) - The yields for the past quarter nearly equal those for the previous three months. The principal yields were from the United and South Devonshire companies, the former company having paid 24s per share in eight weeks. The new St Mungo Company maintains their excellent average, and the Phoenix and Duchess of Edinburgh companies have most excellent prospects, and promise soon to be again in the dividend list. On Snob's Hill steady work is being pursued, but the returns are not quite so good as for the previous quarter. The Specimen Hill United Company continues prosperous, and the neighbouring companies are making arrangements to recommence operations. On the Moon line the tributers are getting good returns. The new batteries at the St Mungo, Lady Barkly, South Devonshire, and United Devonshire companies are nearly completed, and will soon be in full work. The St Mungo Company is using the electric light, and the Catherine Company is making arrangements for lighting up their crushing plant by the same means.¹

Dec 1883: Sandhurst Division (NG Stephens) - During the quarter just ended mining operations have been carried on with unabated vigour in this division, and with very satisfactory results, the gold yields having been good; while in the progressive mines prospecting is being carried on extensively. On the New Chum line, the mines on the northern end are all down very deep, and the North Old Chum and the New Chum and Victoria companies expect, early in the year, to reach the payable reef worked in the 180 mine at a depth of 1,700 feet. It is reported that a payable reef has been cut at a depth of 1,110 feet in the No. 222 claim. The New Chum United Company continue to get payable returns from below 1000 feet, while the Shenandoah Company have discovered a new formation at about 1,200 feet from the surface, but whether the stone will be found in payable quantities cannot yet be determined. On the Garden Gully line, the Garden Gully United Company continue to get fine yields; and the Carlisle and Unity Company are now crushing with their recently erected batteries, and are obtaining moderate results. The other mine owners on this line are prospecting chiefly in the deep ground. On the Hustler's line, there has been a little more show of activity on the south end, and one or two companies have improved prospects. A considerable amount of prospecting is going on, on the various lines of reef at Golden Gully, but there has been no change worthy of note. At Axedale, the Acott Company have finished their machinery and started crushing. If a good return should be obtained, it will result in the opening up of a large area of new country. At Marong, the Wilson's Reef Company is about to give that portion of the division a thorough trial. At Sebastian, the leading companies are still meeting with gratifying success; and at Raywood, the prospects of the Nil Company have greatly improved. Attention is still being paid to the latest improvements in mining appliances. A new electric blasting apparatus has been successfully introduced. Fifty-four million gallons of water have been sold for mining purposes during the past quarter.²

Dec 1883: Eaglehawk Subdivision (FR Ellis) - The returns for the past quarter show a considerable falling off, in consequence of a number of companies which were prominent in large yields having worked out their runs of stone. However, several other companies have come upon stone, which is giving good returns. On the Devonshire, St Mungo, Johnson's, and Moon lines of reef, work is being pushed on most energetically. The Phoenix, Unicorn Tribute, and South St Mungo Companies struck excellent stone during the past three months. But little work is being done on the Black Forest and Lightning Hill lines of reef. The new batteries mentioned in my last report are now completed, and are fully employed. There is very little doing in alluvium workings owing to the scarcity of water.³

1883: In 1883 James Grey Weddell, manager for several of Sandhurst's leading mines, was despatched to Germany to study mining methods and equipment at the famous Freiberg Mine in Saxony, with a view to their adoption in the local industry.⁴

June 1884: Sandhurst Division (NG Stephens) - The quarter, which has just closed, has witnessed a continuance of the general prosperity, which has for some time attended the mining industry in this division. Work has been carried on without abatement of vigour and with good average results. The New Chum line still occupies the leading position, and surpasses all the others in activity and profit. At the south end of the line the Eureka company have just opened up what promises to be a payable prospect at 1,200 feet, and the New Chum Railway are getting improved yields from the same reef at considerably over 1,000 feet. Next north, the Shenandoah and North Shenandoah Companies are conjointly sinking what will be the pioneer shaft of this portion of the line 0 they are now down nearly 280 feet.

1 Mining Surveyors' Reports, September 1883

2 Mining Surveyors' Reports, December 1883

3 Mining Surveyors' Reports, December 1883

4 Cusack, 1973, p172

The Shamrock and the Young Chum Companies are both sinking, and the Craven, Garibaldi, and Ellesmere Companies is working on stone of more or less payable appearance between 600 and 950 feet. The New Chum Consolidated shaft is down 1,135 feet. The New Chum United Company is still getting handsome returns. The northern deep claims are working with renewed courage since the publication of the returns from Lansell's 180 mine. The Lazarus is down 1,557 feet, and the Old Chum Company 1,340 feet. The New Chum and Victoria have cut a small reef at 1,560 feet, and from the same stone, at 1,500 feet, have had a crushing averaging about 1 oz per ton. North Old Chum is just opening out at 1,650 feet to cross-cut for the 180-foot reef. The Victoria Quartz Mining Company has recently resumed work. On the Garden Gully line the Londonderry Company have just opened up a small reef above 1,200 feet, and the first crushing gave a satisfactory result. The claims between this and the Garden Gully United Company are doing little work. The Victory and Pandora shaft is down 1,865 feet, the second deepest in the district. On the Hustler's line matters are quiet. The Hustler's Reserve No. 2 are working payable stone at 400 feet, and have just succeeded in getting on the dividend list. The Great Extended Hustler's Tribute is cross-cutting at 1,452 feet. At Golden Gully matters remain rather quiet. None of the mines in that quarter can show any substantial success. At Axedale, the Acott Company, having found the old reef unpayable, sank the shaft, and are now just on the point of opening up on another reef at 276 feet. The Alexander Company, at Lockwood, appears to have a payable prospect at 260 feet. There is nothing worth mentioning in alluvial mining. 51,000,000 galls. of water have been sold for mining purposes during the quarter.¹

June 1884: Eaglehawk Subdivision (FR Ellis) - The present has been even more successful than the past quarter, the dividends being £89,253 14s and the calls £47,428 10s, which is an increase on last quarter's return of dividends over calls of £10,624 4s. The principal contributors to this grand total are the Bruhn's Tribute Company, at Sebastian, its yield being 2,556 oz 4dwt for the quarter, and the Lady Barkly Company 2,448oz 14dwt. There is at the present time a good prospect of the continuance of this success. The Duke of Wellington Company have lately struck gold, but at present the prospects are not very encouraging, the last crushing of 50 tons yielding only 11 oz 5dwt of gold. The Pearl Company is still prospecting at the 550-foot and 630-foot levels. The Great Extended Victoria Company, which is still sinking (their present depth being 518 feet), have erected a very efficient winding plant at a cost of over £3,000, and are now in full work. The plant is of a very powerful character, and exactly similar to the splendid machinery of the St Mungo Company. The Dixon's Tribute Company, whose shaft is now 523 feet deep, have opened out, and put in a cross-cut 76 feet. The New Victoria Catherine Company, since last report, has sunk a further depth of 20 feet, making a total of 615 feet from the surface. The Duke of Edinburgh Company has an appliance in use for the prevention of over-winding of cages. The apparatus is simple in construction, and has been very favourably commented on by experts. Their shaft is now down 395 feet, and they are now sinking. The Victorian St Mungo are now down 395 feet, and still sinking. The New St Mungo are again on the dividend-paying list, they having crushed 1,553 tons for 1,010oz 16dwt during the last quarter. The quartz was obtained from the 575-foot and 650-foot levels. The Extended South Devonshire, at a depth of 612 feet, have driven a cross-cut a length of 154 feet from the shaft. In this cross-cut, at 151 feet from the shaft, a black leader with spurs was cut, showing gold. The South Devonshire are still sinking. Their present depth is 525 feet. The Duchess of Edinburgh is now cross-cutting at the 710-foot level.²

Sept 1884: Sandhurst Division (NG Stephens) - ...the most noticeable amongst which has been the furnishing of further decided evidence of the advisability of deep sinking. The bulk of the work now being done in this division is in the deep ground, so that the success attending the efforts of several companies below 1,000 feet is of a very pleasing character. The New Chum line continues to occupy the leading position, and work is being carried on with unabated activity. At the south end the Eureka Company are working a reef of a highly payable character at 1,200 feet, and, having cleared off a heavy debt, will shortly pay dividends. The New Chum Railway Company, next north, are also getting good yields at 1,026 feet, a decided improvement having recently taken place. The Shenandoah and North Shenandoah Company, who are working conjointly, are opening up a reef at 1,250 feet, which promises to prove of a fairly payable character. The Shamrock and Young Chum Companies are sinking their shafts. Craven's and the Garibaldi Companies are working at 910 and 720 feet respectively on stone of but moderate quality. The Ellesmere and New Chum Consolidated are conjointly sinking the shaft of the latter company, which is now down over 1,100 feet. The New Chum United are still getting fair yields at 900 and 1,025 feet, and have the shaft down a good deal deeper. The Lazarus Company is erecting a winding engine under ground, in the 1,000-foot cross-cut, to haul from the blind shaft, which is nearly 600 feet deeper.

1 Mining Surveyors' Reports, June 1884

2 Mining Surveyors' Reports, June 1884

The Old Chum Company is opening out to cross-cut for the reef at 1,400 feet. The New Chum and Victoria Company have opened up a reef of good quality at 1,500 feet, and have been paying regular dividends therefrom. They are the first public company in the district to pay dividends from quartz raised from so great a depth... The North Old Chum Company has cut the same reef at 1,650 feet. It is very small, but promises to become larger when opened up. The yields from the 180 mine (Lansell's) have been of a payable character. The various companies between it and the Hercules have been doing progressive work without any special results. The Hercules and Energetic Company have been crushing a lot of stone with a small profit. On the Garden Gully line the operations of most of the companies are without any special interest. The Garden Gully United Company is alone getting profitable yields, and their dividends continue large. The Victory and Pandora Company have sunk their shaft to 1,900 feet... Rock's Pioneer Company having almost completed the new western shaft, and will shortly open out at 400 feet to prospect for the reef. On the Hustler's line operations are not at all on an extensive scale. The Great Extended Hustler's Tribute Company, in the 1,452-foot cross-cut, passed through nice country. Among the outside mines, the GG Consolidated Company, at Golden Gully, is opening up a gold-bearing reef at 790 feet, but it is not profitable yet. The Tambour Major Company, at the head of Long Gully, has cut some gold-bearing spurs in the shaft at the 450-foot level, and there is evidently a reef near. The Acott Company, at Axedale, has been crushing, with moderate results, from some cross reefs below 300 feet. A discovery of some importance has been made at Myrtle Creek (14 miles from Sandhurst) by a farmer named Pilcher, who, while ploughing, discovered some surface leaders. Fifty-four million gallons of water have been sold for mining purposes during the past quarter.¹

Sept 1884: North Sandhurst Division (FR Ellis) - ...The Duke of Wellington Company cross-cutting at the 220-foot level. The Pearl Company during the last quarter, been doing a vast amount of prospecting work, but with little return. The Great Extended Victoria Company sinking their shaft, which is now 570 feet deep. The Dixon's Tribute Company not found anything payable during the quarter. The New Victoria Catherine Company continued mining operations with the utmost energy, but at present without any payable prospect. The New St Mungo Company stoping at the 703-foot level. The Duchess Tribute Company opening out the reef at the 500-foot level, which is now showing very good gold. The United Devonshire Company driving a level at 666 feet. The Princess Alexandra Company sinking. Depth of shaft 738 feet. The Extended St Mungo sunk their main shaft 525 feet. Phoenix Company. - The stone crushed by this company has been taken principally from the 510-foot level. They are also sinking their shaft, which is 563 feet. The Unicorn Tribute Company - During the quarter operations carried on vigorously by this company. A deal of permanent and prospective work has been done. The South St Mungo Company stoping at the 610-foot level. The Lady Barkly Company cross-cutting at 380 feet... Depth of shaft 764 feet. The St Mungo Company: The cross-cut at 745 feet has been extended 95 feet. The Sadowa Company. The stopes at the 620-foot level are showing fair gold. Eastwood Company. This company started to open out on some spurs in the eastern winze, showing fair gold ... Work is also being done at the 690-foot level. The Ellenborough Company working principally at the 720-foot level. The Belmont and Saxby Company. The stone crushed has been taken from the No. 2 and No. 3 levels. The La Belle Company stoping in the 790-foot level. The York and Durham Company driving a cross-cut east at 900 feet. The Acadia Catherine Company working the 985-foot level. The Williams United Company obtaining very good gold at the 800-foot cross-cut. The Princess Alice Company. - The No. 14 cross-cut has been driven 267 feet. The Catherine Reef United Company sinking their main shaft, which is now down 1,027 feet. The Central Windmill Company driving a cross-cut at 560 feet, which is now in 78 feet. The Confidence Extended Company sinking their main shaft. Present depth 912 feet. The North Johnson's Company extended the 300-foot eastern level 54 feet. The Rose of Denmark Company. The 280-foot level has been extended 154 feet from cross-cut. The Frederick the Great Company. At the 320-foot level there is a large body of stone showing splendid gold. Bruhn's Tribute Company driven a cross-cut from the 200-foot level, a distance of 10 feet, through a strong body of stone. The No. 20 Tribute Company. The 150-foot level has been driven 80 feet. The Nil Company, at Raywood, lately erected an engine, 24 horse-power, value £450; boiler 26 feet long by 5-1/2 feet in diameter. Work in the mine during the quarter has been almost entirely confined to stoping at the 386-foot level. The total rainfall during the quarter was 2.587 inches. The amount of water consumed for mining purposes in the subdivision was 17,000,000 gallons.²

1 Mining Surveyors' Reports, September 1884

2 Mining Surveyors' Reports, September 1884

Dec 1884: Sandhurst Division (N.G. Stephens) - During the quarter, mining operations have been carried on with energy, and upon the whole with very successful results. One of the most gratifying features disclosed is the further striking evidence afforded of the payable nature of the deep ground, a dividend having been paid from a reef worked at a depth of 1,650 feet from the surface [North Old Chum Co.] This is the second public company, which has paid dividends from and below 1,500 feet, besides Mr Geo. Lansell's private mine. The New Chum line continues to hold the premier position in gold production. On the south end of the line, the Eureka Company continues to get payable yields from 1,200 feet, and they are erecting a more powerful winding plant preparatory to sinking to greater depths. The New Chum Railway Company's yields and dividends have increased considerably during the quarter... The Shenandoah Company are getting the reef at 1,312 feet opened up for extensive working, and has a fair prospect with every probability of an improvement. The Shamrock Company is now starting a cross-cut at 1,210 feet for the cap of the same reef. The Garibaldi and Craven's companies' yields have been of a moderate character. The Ellesmere No. 1 and the New Chum Consolidated Company are conjointly sinking the shaft of the latter company... The New Chum United Company has paid pretty regular dividends from the reefs at 900 and 1,025 feet... The Lazarus and Lazarus No. 1 companies have been prospecting at various levels below 1,200 feet without any tangible result. The Old Chum Company is cross-cutting at 1,400 feet, for the reef being worked so profitably further north. The New Chum and Victoria Company have been working with gratifying results upon the reef alluded to in the last sentence at 1,500 feet, and paid a large amount in dividends during the quarter... The North Old Chum Company have been more successful during the quarter, and have at length paid a dividend from the reef being worked in the 1,550 and 1,650 foot levels, the greatest depth from which any public company have ever paid a dividend on Sandhurst. Mr Lansell's 180 mine has been yielding fairly. The Victoria Quartz, Great Central Victoria, Ironbark, and Victoria Consols companies are all prospecting below 1,000 feet. The Hercules and Energetic companies' yields afford sufficient profit to permit of the declaration of occasional dividends. On the other lines of reef there is not so much activity. On the Garden Gully line, south of the Garden Gully United Company's mine, the Londonderry and Great Southern companies are doing a little prospecting, but the other claims are idle. The Garden Gully United Company's yields have fallen off very much during the quarter, but an improvement is shortly expected. The Victory and Pandora company's shaft is down about 1,940 feet, and they are cutting at different depths. The Carlisle and Unity companies are crushing largely, but with only moderate results. Koch's Pioneer has completed the new east shaft, and is cross-cutting at 200, 300, and 400 feet. The Acott Company (Axedale) has had a number of crushings, without payable results. The Alexander the Great Company (Lockwood) have completed the erection of a small battery, and the first crushing, though moderate, was payable. Britt's Freehold Company (Bagshot) have, after some four or five years' work, succeeded in getting on to washdirt, from which they obtained a good prospect, but they have a heavy body of water to contend with. Myrtle Creek has become very quiet. Mr Pilcher has crushed some more good stone, but it takes him a long time to get it out.¹

Dec 1884: Eaglehawk Division (FR Ellis) - Mining in this subdivision has been very prosperous during the quarter, the Devonshire line still holding premier position. The United Devonshire Company, on this line of reef, gave a Christmas dividend of half-a-guinea per share. At Sebastian the mines are turning out fairly good yields. The Nil Company, Raywood, has met with a nice body of stone, which promises to be of a payable character. The Duke of Wellington Company is busily engaged extending the 220-foot level. The Pearl Company is sinking the engine-shaft, which is down 790 feet from surface. The Pearl Tribute Company is down 405 feet. Great Extended Victoria Company is sinking their main shaft... Machinery in good working order. Fourteen men are employed. The Dixon's Tribute Company during the quarter has been driving the western cross-cut... Thirteen men are employed. The New Victoria Catherine Company has started driving east and west at the 665-foot level... Labor employed, 15 men. The Duke of Edinburgh Company is sinking their shaft; total depth, 575 feet. Water heavy. Have begun to break stone near the boundary of the new St Mungo Company, which is getting a little larger. Thirteen men are employed. The Victorian St Mungo Company... Number of men employed, 3. The New St Mungo Company - The south drive at 703 feet has been extended 30 feet. The Duchess Tribute Company has been engaged stoping the Devonshire reef. The South Devonshire Company has extended the cross-cut east of the main shaft. The Duchess of Edinburgh Company - The level at 710 feet has been extended 75 feet from the cross-cut. United Devonshire Company is extending the level at 660 feet. The Princess Alexandra Company has agreed with the Extended St Mungo Company to join in sinking the Princess Alexandra shaft from 747 feet... the extended St Mungo Company to pay half the cost of all such works. The Extended St Mungo Company is stoping above the 470-foot level. Phoenix Company. - The winze from the 650-foot level has been sunk a total depth of 80 feet. The Unicorn Tribute Company extended the level at 795 feet. South St Mungo Company - ...Seventy-nine men are employed.

The Lady Barkly Company ... Main shaft has also been sunk; total depth, 790 feet... Seventy-two men are employed. The St Mungo Company... Ninety-four men are employed. Sadowa Company is stopping at the 620-foot level. Eastwood's Company is sinking a winze, which is now 45 feet below the 690-foot level... Ten men are employed. The Ellenborough Company took out a trial crushing from the eastern spurs above the slide, and about 15 feet above the 800-foot level... Forty-three men are employed. Belmont and Saxby Company are stopping at the various levels with average success. Seventy-two men are employed. LaBelle Company is extending the level at 790 feet... Seventeen men are employed. York and Durham Company... Seventeen men are employed. The Acadia Catherine Company is raising quartz from the 985-foot level. The Williams United Company is driving a cross-cut at 800 feet. The Catherine Reef United Company is sinking their main shaft; depth, 1,077 feet. The North Johnson's Company... Twenty-two men are employed. The Rose of Denmark Company... Eighteen men are employed. The amount of water consumed for mining purposes in the subdivision was - from main, 15,000,000 gallons; from open race, 3,000,000 gallons; total, 18,000,000 gallons.¹

Mar 1885: On the New Chum kine there are now four companies working payable reefs between 1,500 feet and 1,860 feet, while an important discovery in this respect has been made on the Garden Gully line, where the Victory and Pandora are opening up what appears to be a payable reef at 1,860 feet. On Hustler's line, the Great Extended Hustler's Tribute Company is preparing to cross-cut at 1,550 feet. The New Chum line continues to produce the largest amount of gold. The Eureka Company get moderately payable returns from the reef at 1200 feet ... They are putting up a very powerful winding plant in order to prospect the mine at greater depths. On the Garden Gully line the principal importance attaches to the discovery in the Victory and Pandora Company. On the Hustler's line the operations are almost purely progressive. March 1885: Eaglehawk Division - mining carried on with unabated vigour, the principal companies along the main lines of reefs still giving good returns. The machinery on some of the most important mines has had a thorough overhauling, and the prospects are, to say the least, very encouraging. The mines from Sebastian are still giving satisfactory yields ... Mining at Sydney Flat is dull, as also at Lightning Hill. Progressive work is being carried on at Raywood. The Nil Company has had a new make in the shaft at 420 feet, which promises to be a payable character. The Pearl Company is sinking their main shaft; depth 869 feet ... Machinery in first-class working order. 24 men employed. Great Extended Company - 13 men employed. Dixon's Tribute Company has repaired their machinery ... 3 men employed. The New Catherine Company - engine baling 2,000 gallons per hour. 12 men employed. Duke of Edinburgh Company - 19 men employed. New St. Mungo Company - 58 men employed. Extended South Devonshire Company - 13 men employed. South Devonshire Company - 53 men employed. The Duchess of Edinburgh Company - 18 men employed. United Devonshire Company - 98 men employed. Extended St. Mungo Company - 27 men employed. Phoenix Company - 21 men employed. Unicorn Company - 24 men employed. South St. Mungo Company - 75 men employed. Lady Barkly Company - 58 men employed. St. Mungo Company - 91 men employed. Sadowa Company - 84 men employed. Eastwood's Company - 10 men employed. Ellenborough Company - 34 men employed. Belmont and Saxby Company - 73 men employed. La Belle Company - 7 men employed. York and Durham Company - 12 men employed. Acadia Company - 32 men employed. Williams United Company - 20 men employed. Catherine Reef Company - water heavy, 47 men employed. Rose of Denmark Company - 47 men employed. Great Northern Company - 19 men employed. Golden Pyke Company - 7 men employed. Specimen Hill United Company - 35 men employed. North Argus Company - 2 men employed. New Argus Company - 8 men employed.²

June 1885: Sandhurst Division - The district still continues in a prosperous condition, and the recent discoveries in the deep ground have already had a marked effect in causing increased activity. This has been the more noticeable on the Garden Gully line, where the discovery of a payable reef in the Victory and Pandora mine, at 1,860 feet, has already caused several companies on the south end of the line to resume operations, which had previously been suspended for lack of any encouragement in the shallower levels. In two or three instances new machinery will have to be erected. The New Chum line continues to hold foremost position, both in regard to the vigorous nature of the work being carried on and the results being obtained. On the south end of this line, the South Bellevue Company, who for some months had a suspension of the labour covenants, decide to resume work in consequence of good results being obtained immediately north, and are now cutting down their shaft. The Eureka Company have been working the reef at 1,200 feet profitably ... They have just completed the erection of a new and powerful winding plant. The New Chum Railway have worked the same reef at 1,106 feet, also with payable results ... They likewise have erected a more powerful winding engine.

1 Mining Surveyors' Reports, December 1884

2 Mining Surveyors' Reports, March 1885

The Shenandoah Co has, in conjunction with the North Shenandoah Company, done purely progressive work. The Shamrock Company opened up a promising reef at 1210 feet, but it did not pay, and they have resumed sinking. The North Shamrock Company is working at 846 feet, but the stone is at present poor. Craven's New Chum Company is idle. The Ellesmere ground being worked solely by tributers. The New Chum United Company's yields have latterly been comparatively poor. The Lazarus and Lazarus No. 1 companies have been prospecting reefs at 1,250, 1300 and 1,520 feet, with but moderate results so far. The Old Chum has succeeded in reaching 1,400 feet. New Chum and Victoria Company have got excellent results from this reef at 1,500 and 1,600 feet. The North New Chum has got large yields. Lansell's 180 mine has produced payable yields. The Victoria Quartz Company, who are driving on the reef from Lansell's 180, are breaking rich stone. The Great Central Victoria, Victoria Consols, and Ironbark companies are pushing down their shafts. The Hercules company has been getting good stone at 600 and 780 feet. On the Garden Gully line, the Great Southern Company is sinking a new shaft. The Londonderry Company is sinking for the Victory and Pandora Reef, and is down 1,452 feet. The Ulster and the New Garden Gully Freehold companies have both decided to resume work. The Garden Gully United Company have had moderate yields ... The Victory and Pandora Company crushed 112 tons for 110ozs from a new reef at 1,860 feet, a highly payable result ... The Unity Company are sinking for this reef, and are down 1,335 feet, and the Carlisle will probably follow suit. Koch's Pioneer Company is prospecting. On Hustler's Line, the Hustler's Reserve No. 2 Company, the Park Company, and the Royal Hustler's Company are prospecting. The Great Extended Hustler's Tribute Company is cross-cutting at 1552 feet... The Hustler's Reef Company has opened up a strong lode at 1,017 feet ... The United Hustler and Redan Company has been getting payable stone at a shallow depth. Among the outside lines, the Tambour Major Company has resumed sinking. The Golden Gully mines are very dull, though latterly some tributers on the Carshalton line have improved prospects. Britt's Freehold Company, at Bagshot, has not yet been able to overcome the water. June 1885: Eaglehawk - The most noteworthy feature to report is the continued success of the United Devonshire Company, on the Devonshire Reef. The Acadia Catherine and the Virginia companies have added to the list of dividend paying mines. Duke of Edinburgh Company is about to resume sinking the shaft. Pearl Tribute Company - 450 feet eastern cross-cut has been driven 40 feet from shaft. Great Extended Victoria Company is sinking their engine shaft; depth 810 feet. Devon Tribute Company - are at present erecting a penthouse, preparatory to resuming sinking the shaft. New Victoria Catherine Company is sinking their shaft, now 746 feet ... Water heavy, being about 30,600 gallons per week. Duke of Edinburgh Company - contractors sinking the shaft. Victorian St. Mungo Company - have sunk their shaft to a depth of 789 feet. The Duchess Tribute Company sinking their shaft, present depth 701 feet. South Devonshire Company - main shaft sunk to depth of 680 feet. Duchess of Edinburgh Company - eastern cross-cut extended. United Devonshire Company - still continue to give splendid yields. Princess Alexandra Company - shaft sunk to depth of 840 feet. Extended St. Mungo Company - Very little work is now being done. Phoenix Company - The north level, at 840 feet, has been extended. Unicorn Company - plant at 315 feet completed. South St Mungo Company - shaft sunk a total depth of 766 feet. Lady Barkly Company - main shaft has been sunk 826 feet. The Sadowa Company - stopes at the 690-foot level are also showing gold Eastwood's Company - the level at 790 feet has been driven 20 feet. Ellenborough Company - at 880 feet the eastern cross-cut has been extended. Belmont and Saxby United Company - the stopes at the No 3 level are showing a little gold. La Belle Company intends continuing the stopes above the 790-foot level. York and Durham Company - the western cross-cut at 960 feet, has been extended. Acadia Catherine Company - the western cross-cut, at 985 feet, has been driven 14 feet. Williams United Company - the eastern cross-cut at 600 feet, has been extended. The Catherine Reef United Company - at the 1,060 foot level the ground is very hard. The North Rose Denmark Company - crosscut at 405 feet has been extended. Confidence Extended Company - the engine shaft has been sunk 976 feet. Frederick the Great Company - the winze at the 580-foot level has been sunk 19 feet. Bruhn's Tribute Company is breaking stone from the second stope north from the main winze. Nil Company - The shaft sunk to a depth of 462 feet; water heavy.¹

Sept 1885: Sandhurst Division - The question of deep sinking has continued to occupy a very prominent position during the quarter and additional testimony of a most gratifying nature has been given with regard to the quality of the reefs being opened up in the deep ground. Indeed the evidence at this point, during the last year or two, has accumulated so much, and has been of such a pronounced character that it has ceased to be a matter for difference of opinion, and mining companies now look forward to the probable results of sinking to 1,500 feet or 2,000 feet with as much confidence as was shown in times gone by in sinking a few hundred feet. It can scarcely be otherwise, even were the past success of the New Chum and Victoria, the North Old Chum, Lansell's 180 claim, and the Victoria Quartz Company, at various levels from 1500 feet to 1870 feet, not emphasised by further developments.

Early in the present quarter, the Victory and Pandora succeeded in getting opened up on a reef sufficiently to commence regular crushings, and the results since have been of a gratifying character, the returns having averaged over an ounce per ton, which will leave a good margin of profit. But the yields from the Victoria Quartz Mining Company are of a much more sensational character - they are working (through George Lansell's 180 mine) on a reef 1,760 feet below the surface. Of several crushings which they have had during the quarter, one of 24 tons averaged 11ozs. per ton, one of 9 tons averaged 37ozs. per ton, and one of 12 tons averaged 18 1/2ozs. per ton ... The Garden Gully United have paid good dividends during the quarter; they are erecting powerful machinery to explore the ground at depths.

Sept 1885: Eaglehawk Division - one of great activity and the present appearance of the mines indicate a continuance of prosperity. The most noteworthy feature is the decided success of the United Devonshire Company, on the Devonshire Reef, who have paid in dividends £31,500 during the quarter. The other principal dividend-paying mines are the South St. Mungo Company £3000; and the Hopewell Company, £2,850. Work has been carried on in most mines with unabated vigour and with good all-round results ...[mentions following mines] - Pearl Company; Pearl Tribute Company; Great Extended Victoria Company ; Dixon's Tribute Company ; New Victoria-Catherine Company ; Victorian St. Mungo Company ; New St. Mungo Company; Duchess Tribe Company ; South Devonshire Company ; The Duchess of Edinburgh Company ; United Devonshire Company ; Hopewell Company; Princess Alexandra Company ; Extended St. Mungo Company ; Phoenix Company ; South St. Mungo Company ; The Lady Barkly Company ; The St. Mungo Company ; Sadowa Company ; Eastwood's Company ; Ellenborough Company; Belmont and Saxby Company ; La Bella Company ; York and Durham Company ; Catherine Reef United Company ; William's United Company ; The North Johnson's Company ; The Rose of Denmark Company ; The Princess Alice Company. Prospecting claims subsidised by Eaglehawk Prospecting Committee: Jacob's Reef Company. Elliott's Reef Company. James and Company, Prince of Wales reef. Guerin and Company, Kamarooka.¹

Dec 1885: Sandhurst Division - The quarter just closed has been one of continued activity on this goldfield, and, though the yields have fallen off somewhat, a quantity of very valuable work has been done which is certain to show good results in the early future. The deep-sinking ventures continue to hold out strong encouragement to companies owning shallower mines to push down their shafts. The general work of the mines has proceeded satisfactorily. On the New Chum line, the South Belle Vue Company is cutting down their old shaft. They are also erecting new and powerful machinery. The Eureka Company is getting good payable yields from the 1,280-foot levels, and should shortly be paying dividends again. The returns from the New Chum Railway Company from the 1,106-foot level have been rather moderate lately... The Shenandoah Company has opened up a reef at 1,492 feet with payable results... The North Shenandoah are working conjointly with the Shenandoah. The Shamrock Company is cross-cutting at 1,446 feet. The Young Chum shaft is down 1,030 feet. Craven's Company has resumed work. The Garibaldi Company's shaft is down 1,172 feet. The Ellesmere and the New Chum Consolidated Companies, working conjointly, have sunk their shaft to 1,420 feet; a large body of stone at 1,340 feet gives fair promise of being payable. The New Chum United Company are doing prospecting work, including sinking the shaft below 1,370 feet. The Lazarus and Lazarus No. 1 Company's shaft is down 1,651 feet. The Old Chum Company's yields from 1,400 feet have enabled them to commence paying dividends; they are erecting more powerful machinery. The New Chum and Victoria Companies' yields from 1,500 and 1,600 feet have been moderate recently; their shaft is down 1,711 feet; they are erecting new machinery. The North Old Chum yields have been moderate; they are prospecting at 1,750 feet. Lansell's 180 mine has produced a lot of gold from the deep levels. The Victoria Quartz Company have had a few small crushings; their shaft is down 1,591 feet, and in eight or nine months they should be deep enough to work the reef extensively. The Great Central Victoria, the Victoria Consols, and the Ironbark Companies are prospecting the deep ground. The Hercules Company is paying steady dividends. On the Garden Gully line, all the southern companies are doing progressive work. The Londonderry Company's shaft is down 1,552 feet. The Garden Gully United Company has had a good many dividends. They have erected a large additional engine to sink the shaft, which is down 1,320 feet. The Victory and Pandora Company have been steadily, though not largely, crushing from the reef at 1,860 feet, and should shortly pay a dividend. The Unity Company has been steadily sinking for this reef, and is down 1,520 feet. The companies further north are prospecting. On the Hustler's line the work is nearly all progression. The Hustler's Reserve Company has been getting moderate yields. The Royal Hustler's shaft is down 990 feet. The Great Extended Hustler's Tribute is cross-cutting at 1,652 feet. The Great Extended Hustler's shaft is down 1,635 feet. The Hustler's Reef Company has been working at 1,017 feet with moderate results. Among the outside mines, the Tambour Major Company has had small yields from 615 feet.

The Empire Amalgamated is cross-cutting at 1,000 feet. The Acott Company, Axedale, after crushing a good deal of stone, has given up the mine to tributers. Britt's Freehold Company, at Bagshot, is making good progress in lowering the water. The quantity of water sold for mining purposes in this division during the quarter ended 31st December was 64,000,000 gallons. Eaglehawk Division (FR Ellis) - In reviewing the progress of mining operations during the last quarter, it is pleasing to report an increase of 4,327 oz 18 dwt 11 gr in the yield of gold, as compared with the previous quarter. There is every reason to believe that this prosperous state of affairs will be of a lasting character, as deep sinking is, in this, as in the adjoining division, now fairly established. This continued prosperity has undoubtedly imparted confidence in the future of mining in Eaglehawk. The greater portion of the gold is still obtained from the St Mungo and Devonshire Reefs. The Duchess Tribute Company, on this line, have paid 5s 6d per share in dividends during the quarter. The United Devonshire have been breaking some rich stone from the 375 and 435 foot levels. The Hopewell Company is also working the same reef, but not with such good results as the former company. The Catherine Reef United Company passed through a large body of stone at a depth of 1,098 feet, showing nice gold. The Princess Alice Company has struck a rich run of spurs of a very promising character at the 1,040-foot level. On the Johnson's line, the Johnson's Reef Gold Mines Company have met with a large body of stone at the 868-foot level, from which two dividends of 1s 6d per share have been declared. The Rose of Denmark, North Johnson's, and the Confidence Extended Companies intend sinking in order to work this stone. The quantity of water sold for mining purposes was, from main 13,500,000 gallons at 4d per 1,000 gallons, and 6,000,000 gallons from open channels, at 1/2d per 1,000 gallons.¹

Mar 1886: Sandhurst Division (NG Stephens) - during the quarter just closed an increased quantity of quartz has been crushed; but owing to a falling off in the quality of the stone from some of the principal mines, the average per ton is less than it has been for some time past. Still, several developments of a highly encouraging character have taken place, and noticeable amongst these is the discovery of a golden reef in Mr Lansell's 180 mine at a depth of 2,000 feet... This is a very important discovery. On other parts of the New Chum line prospecting is being vigorously carried on. The Eureka mine is still yielding good payable returns, with good prospects for the future. Their shaft is down 1,341 feet. The New Chum Railway returns have been moderate, and not sufficient to pay dividends. The Shanandoah Company has been getting satisfactory yields from reefs at 1,312 and 1,492 feet, and has resumed the payment of dividends. The Shamrock Company has just reached the reef at 1,430 feet, and it proves to be gold-bearing. The Garibaldi Company is cross-cutting at 1,102 and 1,190 feet. The Ellesmere and the New Chum Consolidated companies are jointly sinking the shaft of the latter, which is down over 1,500 feet. The New Chum United is also sinking, and their shaft is down 1,444 feet. The Lazarus Company has just touched what appears to be the top of a reef formation in the shaft at 1,670 feet, and have seen gold. The Old Chum Company are prospecting the reef at 1,400 feet, and getting moderate returns. Their shaft is down over 1,500 feet, and they will soon reach the reef in a lower level, when improved yields are expected. The New Chum and Victoria are now prospecting at 1,700 feet. The North Old Chum is cross-cutting. The Victoria Quartz Company is working from Lansell's 180 mine at 1,760 and 1,860 feet. On the Garden Gully line matters are rather dull just now. The returns from the Garden Gully United Company have fallen off considerably. Unfortunately the reef opened up by the Victory and Pandora Company has become very poor. The Unity Company is prospecting at 1,570 feet. On the Hustlers line the work is chiefly of a prospecting nature. The Great Extended Hustlers Tribute Company is prospecting east and west at 1,652 feet, and has met with encouraging indications eastward. The Hustler's Reef Company has struck gold-bearing stone at 960 feet. Among the miscellaneous mines the Tambour Major Company have struck rich spurs at 585 feet, but their permanency is not proved yet. The GG Consolidated Company, having received a portion of the prospecting vote, is resuming work at Golden Gully. The Britt's Freehold Company (alluvial), at Bagshot, is persevering in their efforts to drain the Lower Huntly Deep Lead. The Loyal English Company are reported to have bottomed on payable wash. Eaglehawk Division (FR Ellis) - Mining in this division during the three months just ended has not been prosperous as compared with previous quarters. This is no doubt to be accounted for by the fact that most of the principal mines are carrying on progressive work. There is nothing special to report, but the following particulars will show the nature of the prospecting work that has been carried on during the quarter. The Pearl Company has been sinking their engine shaft through very hard sandstone. Present depth from surface 1,027 feet. The Great Extended Victoria Company - The western cross-cut at 820 feet has been driven 266 feet. Dixon's Tribute Company - The shaft has been sunk 660 feet from surface. New Victoria Catherine Company - The No. 6 cross-cut has been driven west 155 feet. Duke of Edinburgh Company has sunk their shaft 824 feet from surface. Victorian St Mungo Company has sunk their shaft to a depth of 450 feet from surface. New St Mungo Company has sunk their shaft 883 feet from surface.

Duchess Tribute Company - The 684-foot level has been driven 156 feet from cross-cut. United Devonshire Company - the eastern cross-cut at 826 feet has been extended 57 feet through bars of hard sandstone and slate. Princess Alexandra - he shaft has been sunk 941 feet from surface. Extended St Mungo Company - The rise above the 590-foot has been put up 41 feet. Phoenix Company - The 840-foot cross-cut has been driven 41 feet from shaft. Unicorn Company - The northern level at 315 feet has been extended 69 feet. South St Mungo Company - at 325 ft the western cross-cut has been extended 100 feet from shaft. Lady Barkly Company - At the 360-foot level the quartz is getting small. St Mungo Company is sinking their shaft. Present depth 870 feet from surface. Sadowa Company - A winze has been started at the south level. Eastwood's Company is crushing stone from the reef west of the large body at 620 feet. Ellenborough Company - The western cross-cut at 1,000-foot level has been driven 66 feet through slate. Belmont and Saxby United Company have sunk their shaft 991 feet from surface. La Belle Company - The level south at 900 feet has been extended 93 feet. York and Durham Company - The stone taken from the stopes over 960 feet show a little more gold. Acadia Catherine Company - The south level has been driven 70 feet. North Acadia Catherine Company - Work has been confined to breaking stone at the 985-foot level. Princess Alice Company - At the intermediate workings between Nos. 13 and 14 the large stone west of the slide has been driven through to the wall. Catherine Reef United Company- ... At 1,070-foot level he winze is being sunk 66 feet from it. Rose of Denmark Company - the shaft has been sunk 589 feet from surface. Collmann and Tacchi Company - The shaft has been sunk 858 feet. North Rose of Denmark Company - The shaft has been sunk 910 feet from surface. Princess Dagmar Company - The western cross-cut at 885 feet has been extended 132 feet. Johnson's and Webster's United Company - The cross-cut at 340 feet has been extended 79 feet. Golden Age Company - ...The winze from the 932-foot level has been driven 28 feet. Johnson's Reef Extended Company - the 810-foot western cross-cut has been driven 15 feet. Golden Pyke Company - The cross-cut at 300-foot level has been driven 50 feet in slate. Great Northern Company - A plate has been cut at 770 feet. The quantity of water sold for mining purposes in the Eaglehawk division...during the quarter - To mining companies, from mains, 12,500,000 gallons; to slicers, from open channels, 4,000,000 gallons; and the price paid was by mining companies, from mains, 4d per 1,000 gallons; by mining companies, from open channels, 3d per 1,000 gallons; by slicers, from open channels, £2 1s 8d per 1,000,000 gallons.¹

June 1886: Although work continues to be carried on with great activity on all the main lines of reef in this division, the results are still (as during the past two or three quarters) of a moderate character, and the dividends are not so numerous as they should be to ensure the prosperity of the district. However, some important results have been attained in individual instances during the last three months... The New Chum line of reef continues to be the main one in the division. A most important development has occurred in the joint workings of the Lazarus and the Lazarus No. 1 Companies at a great depth, viz., 1,675 feet. Here they have discovered an east leg of a reef, which carries good payable gold... At Mr Lansell's 180 mine, excellent results are still being obtained from the deep ground. The Victoria Quartz Company has just completed the necessary preliminary work to work extensively the reef at 1,670 feet from which they have occasionally obtained such rich yields... In a few weeks they will be crushing regularly. The Hercules and Energetic Company have at 1,010 feet discovered a reef 8 feet thick, which from present appearances will be payable. The New Chum and Victoria Company, and Old Chum Company, have completed the erection of more powerful machinery to enable them to work effectively the deep grounds. The Shamrock Company will, in a few weeks, be in a position to work properly a reef at 1,465 feet. On the Garden Gully line a good deal of interest has attached to the work being done by the Londonderry Company, the only one prospecting the deep ground on the south end of the line. They put in a crosscut at 1,636 feet, but it proved too shallow for the reef, and they are now sinking again. The Garden Gully United Company has improved somewhat on the previous quarter, and has paid two dividends. The Victory and Pandora Company's reef, at 1,860 feet, has only given moderate results, but an improvement is noticeable recently. The Unity Company is pushing down their shaft, and the Carlisle United Company has also commenced sinking. The Koch's Pioneer Company has been working on the eastern reef at 300 feet, but it has been very poor. On the Hustler's line, the Hustler's Reserve Company has been working with payable results at 400 feet. A rather important development has taken place in the Great Extended Hustler's Tribute Company where a new reef of good size and promising appearance, showing a little gold, is being opened up at 1,655 feet. The Great Extended Hustler's Company has sunk their shaft to 1,820 feet. The Hustler's Reef Company has a moderate show of gold in the reef at 967 feet. The comparatively small amount of prospecting done off the main lines is a matter for remark, and this circumstance seriously retards the progress of the district. The striking of rich stone at 600 feet by the Tambour Major Company, shows what may be done in this direction. This company paid two dividends, but has, at present, got off the run of gold.

The G.G. Consolidated Company, has, partly owing to the aid received from the prospecting vote, resumed work at Golden Gully, and in sinking a deep shaft. The United Whip and Jersey Company are also sinking a deep shaft in the same locality. A company named the Isabella has been formed to prospect the country towards Huntly. The Butts Freehold (alluvial) Bagshot, are still endeavouring to drain the mine of water. Some parties are working on the Friling Reef, and have met with some encouragement. The quantity of water sold, for mining purposes during the past quarter, amounts to 48,000,000 gallons. Eaglehawk Division (FR Ellis) - The quarter just concluded has not been prolific of fresh discoveries, but the reports from the mines generally are of a fairly satisfactory nature, and improved returns may shortly be looked for... The dividends declared amount to £27,850, which show a slight falling off, as compared with the previous quarter. Pearl Tribute - the 450ft western cross-cut has been driven 52 feet from the shaft. Great Extended Victoria Company - engine shaft 886 feet deep. Dixon's Tribute Company - Rising and stoping has been carried on. Duke of Edinburgh Company - cross-cut at 854 feet. Victorian St. Mungo Company - have been sinking their shaft, present depth 456 feet. New St. Mungo Company - western cross-cut at 870 feet. Duchess Tribute Company - winze below the 684 feet level has been holed. South Devonshire Company - winze on the eastern back, at the 449 ft level has been sunk a total depth of 90 feet. United Devonshire Company - main shaft 880 feet from surface. Hopewell Company - winze from the 340 ft level has been sunk 60 feet. Princess Alexandra Company - western cross-cut at 990 feet has been extended 23 feet. Extended St. Mungo Company - the immediate level, at 670 feet, has been extended. Phoenix Company - the south level, at 840 feet, has been extended 132 feet. Unicorn Company - have been engaged in stoping. South St. Mungo Company - at 610 feet, the eastern cross-cut has been extended 23 feet. Lady Barkly Company - the middle stopes are being filled in mullock from the surface. St Mungo Company - the north level, at 845 feet, has been extended. Sadowa Company - the winze at the 790-ft level is down 54 feet. Ellenborough Company - the eastern cross-cut, at 1000 ft, has been driven 99 feet. Belmont and Saxby Company - No 2 level are breaking over to the eastern spurs for stone. La Belle Company - the stone at the 900-foot level is still large. York and Durham Company - the eastern cross-cut from the winze, at 818 feet, has been driven 12 feet. The Duke of Edinburgh Company - a cross-cut at 850 feet, has started in hard sandstone.¹

Dec 1886: Sandhurst Division ... the results generally are not very brilliant, a tolerably substantial sum has been paid in dividends ... As showing the importance of deep sinking to the future of this division, it may be mentioned that of the £22,000 paid in dividends during the quarter over £18,000 have been paid by companies working between 1,500 and 1,800 feet. At Lansell's 180 mine work is still being carried on with excellent results between 1,760 and 2,000 feet, but the mine is a private one, the profits are not made public. Confidence in the deep ground is great, and within the next month or two there will be altogether four mines in this division with shafts down 2,000 feet. The great depth now being obtained has, for several years past, necessitated considerable expenditure in the erection of more powerful machinery, and during the past quarter some fine plants have been erected. This large expenditure, while lessening the dividends, has done some good in providing employment. The New Chum line continues to hold the leading position. On the south end the Eureka Company has been working with moderate profit at 1,280 feet, and has their new shaft down 1,630 feet. The Shenandoah Company is working a reef below 1,492 feet with a fair prospect. The Shamrock Company has greatly improved returns from the reef at 1,465 feet, and will commence the new year with a dividend. The Garibaldi has fair results from the 1,270 feet reef. The Ellesmere, New Chum Consolidated, and New Chum United Companies are prospecting between 1,1000 and 1,600 feet. The Lazarus and Lazarus No 1 Companies will shortly be among the leading gold producers. The Old Chum Company has worked the 1,500 feet reef with excellent results, a large profit being obtained. The New Chum and Victoria Company are working at the 1,780 and 1,870 feet levels with moderate profit, but they have not yet got on to the rich portion of the reef. The mines immediately north are prospecting in the deep ground. The Hercules and Energetic Company have erected a new and powerful plant, which has absorbed all their profits. On the Garden Gully line matters are rather quiet. All the southern mines are simply prospecting. The Londonderry Company is cross-cutting for the reef at 1,730 feet. The profits of the Garden Gully United continue moderate. The 1,860 foot reef in the Victory and Pandora continues a disappointment to the shareholders. The Koch's Pioneer Company has failed to find anything payable in the eastern ground. On the Hustler's line hopes at present are mainly bent on the Great Extended Hustler's and Great Extended Hustler's Tribute Companies. The shaft of the former is down 1,995 feet ... the latter have recently erected new machinery, in order to work more expeditiously the reef at 1652 feet, and last returns from which yielded a profit. Several of the miscellaneous group, such as the G.G. Consolidated, the United Whip and Jersey, and the Tambour Major Companies are prospecting with vigour.

Eaglehawk Division ... mining in this division continues quiet. There is nothing special to chronicle. Mentions The Pearl Company ... intend purchasing air compressor and drills to more effectually work the mine; Great Extended Victoria Company; Dixon's Tribute Company; New Victoria Catherine Company; Duke of Edinburgh Company; New St. Mungo Company; Sadowa Company; United Devonshire Company; Princess Alexandra Company; Extended St. Mungo Company; Phoenix Company; Unicorn Company; South St. Mungo Company; Lady Barkly Company; St. Mungo Company; Belmont and Saxby United Company; La Belle Company; South Devonshire Company; Duchess of Edinburgh Company; Hopewell Company.¹

1880s: The Cornishman, Thomas Edwards, who in 1876 had successfully introduced the chlorination process of gold extraction at Clunes, had moved to Bendigo in the seventies and there developed extensive pyrites treatment works, receiving parcels of ore from all over Australia. Several other operators, including Spargo and Co., Liddell Bros., the United Pyrites Company and Cook and Co., also set up roasting works in the northern part of the field.

1880s: Whilst mining continued to be the city's mainstay, by the eighties a range of secondary industry, mostly concerned with supplying the needs of the mines, had arisen. The mines were employing a work-force of 4,000; a thousand more men found employment in local foundries supplying mining equipment or maintenance services.²

May 1887: Sandhurst Division - Mining during the quarter has not caused much stir in this division, and, though two companies have made excellent profits (both worked at or below 1,500 feet), the dividends generally have not been so numerous as might be desired. The New Chum line continues to hold the premier position for activity and payable results. The Eureka Extended has been getting fair yields from the reef at 1,280 feet, and is also cross-cutting at 1,470 feet. The New Chum Railway Company, finding it impossible to make any profit from the 1,400 foot reef, have put on a number of tributers, who, with their more searching operations, have managed to obtain payable returns to both themselves and the company. The Shenandoah and North Shenandoah have each derived a slight profit from their operations on the 1,492 feet reef, but have not reached the dividend paying stage. ... The Shamrock Company is working the same reef as the Shenandoah, and has likewise made a slight profit. The Young Chum Company is sinking their shaft slowly, and in Craven's New Chum the work is almost entirely by tributers. The Garibaldi have been crushing rather extensively from the 1,270 foot level, but the returns are poor ... New Chum United have been prospecting ... The Lazarus and Lazarus No. 1 Companies are getting well opened up on the reef at 1,750 feet; but the returns though fair have not so far come up to expectations. The Old Chum Company's reef at 1,500 feet has yielded excellently, but latterly the returns have fallen off. The New Chum and Victoria and the North Old Chum are cross-cutting at 1,850 and 1,950 feet respectively ... The Victoria Quartz Company have been working the reef at 1,760 and 1,890 feet ... The Great Central Victoria, Victoria Consols, and Ironbark Companies have been mainly sinking their shafts, ranging from 1,500 feet to 1,660 feet deep. The yields from the Hercules and Energetic have been very poor; but latterly the returns have improved greatly, and the last crushing gave a profit of £700 on the fortnight's work. On the Garden Gully line matters have been very quiet ... mentions ... Great Southern Company; Londonderry; Garden Gully United; Victory and Pandora Company; Unity Company; and Koch's Pioneer. On the Hustler's line most of the mines are prospecting ... mentions... Great Extended Hustler's Tribute; Great Extended Hustler's; Hustler's Reef Company; United Hustler's and Redan. The outside mines such as the G.G. Consolidated, Whip and Jersey, Empire Amalgamated, Tambour Major, and others are courageously prospecting without any change. Britt's Freehold (alluvial), at Bagshot, have not yet succeeded in getting opened up on the gutter. A plant for the treatment of pyrites, by the Mewbery-Vautin process, has been erected here, and the results will be awaited with interest. Eaglehawk ... The dividends for the quarter amount to £19,020, compared with the £21,250 for the December quarter. The difference is more than accounted for by the fact that the Frederick the Great Company and its tributaries at Sebastian have been doing scarcely any work, pending the settlement of the question as to the renewal of their lease under the Mining on Private Property Act. Work is proceeding with vigour in all parts of the division, and it may be confidently expected that in one particular portion - the southern end of the Devonshire line - important results will in the immediate future attend upon the work done in several years of steady prospecting. Here the Pearl Company have during the quarter been vigorously opening up a large body of stone in the 1,000 and 1,060 foot levels, and the extensive crushings they have had show the reef to be payable. This will furnish a guide to the several adjoining properties, which have spent a large amount of money in endeavouring to find the connecting link between the Devonshire and New Chum lines of reef.

1 Mining Surveyors' Reports, December 1886

2 Cusack, 1973, p.175

The Pearl Company contemplates the erection of a large crushing plant. The Great Extended Victoria Company is cross-cutting at 950 feet for the Pearl Reef, and expects to reach it any moment. The adjoining companies are pushing down their shafts so as to reach the necessary depths to cross-cut for the reef, and their respective depths are as follows:- Dixon's Tribute, 760 feet; New Victoria Catherine, 1,085 feet; and Duke of Edinburgh, 970 feet. The New St Mungo have been crushing with results from the reef above and below 777 feet. The Duchess Tribute having worked out their payable reef at 604 and 684 feet are now prospecting various portions of the mine. The Princess Alexandra is opening out on a big reef at 1,070 feet. The Extended St Mungo are working on a spur at 400 feet with payable results. The United Devonshire have been working the reef at 500 feet without any extraordinary yields, but have made a moderate profit. The Unicorn, South St Mungo, and Lady Barkly companies have all been crushing for moderate yields, while the St Mungo and Sadowa, though crushing low average stone, have paid occasional dividends. The Ellenborough have been prospecting at various levels without result, and the Belmont has been working on the old reef for poor returns. Catherine United has been crushing somewhat extensively from several levels. On the Johnson's line a good deal of work has been done. The Johnson's Reef, North Johnson's, and the Rose of Denmark companies have been getting steady yields, and the last one has paid several dividends. The Confidence, Princess Dagmar, and Golden Age are energetically prospecting the deep ground. The Constellation has a good prospect, the reef being from 12 inches to 2 feet thick. The Great Northern returns have been moderate. The New Argus and the New Hopeful are getting fair yields, while the New Moon and adjacent companies are hopefully prospecting the shallow ground. At Lightning Hill the General Gordon Company has resumed prospecting. In the Whipstick scrub there are a number of small parties at work, some getting fair returns. At Sebastian, preparations are being made to resume work with the old vigour, as soon as the law case is settled. At Raywood the Nil Company has had better success lately, and is now again paying dividends.¹

June 1887: Timber Supply for goldfields: In view of the Royal Commission on Vegetable products now sitting, it may not be inopportune to draw attention to the present annual value of the output of gold in Victoria, which is nearly £3,000,000. It yields, in the aggregate, a fair profit on the capital invested in the pursuit; besides which it affords a field of employment and livelihood for a large section of our population. One serious impediment to the prosecution of mining is the scarcity and advancing price of timber for the slabbing of shafts, and of timber of an inferior quality for props, cap-pieces, and laths. Large quantities of these classes of timber are consumed in the mines, and the demand for them must increase with the increasing depths at which gold is now sought. Besides the consumption under these heads, a large number of steam engines are employed about the mines for the production of motive power, both in the workings of the mines themselves, and in the treatment and reduction of mine products. As timber is practically the only fuel available in the inland districts of this Colony, it is most important that provision be made for production, at minimum cost, and sufficient supplies. Table shows the distance from which mining timber, and firewood have to be conveyed to the principal mines, together with the weekly cost for the mines:

Sandhurst Mining District				
Localities	Distance of source of supply		Mining timber	Firewood Cost for each
S'hurst & E'hawk	2 to 100 miles	2 to 41 miles	£2 to £62	Only small growths avail
Reedy Creek	3 miles	2 miles	£3 to £4	
Sebastian	7 to 120 miles	2 to 15 miles	£12	

All sawn timber for timbering shafts, housing, and other purposes of similar character, is brought from long distances. For instance, red-gum, the best timber for main shafts, is brought principally from Echuca. Messmate and Victorian blue-gum are obtained from the Bullarook Forest, and are becoming scarce. Even prop timber, of which box is regarded as the best, is brought to Clunes and Smeaton from Bealiba. The main source of supply for ironbark is the tract between Rushworth and Heathcote. So far nothing has been done, to assist nature in the restoration of the forests, and yet only a moderate amount of care and vigilance is requisite to enable restoration to effect itself. It appears more incumbent on the State to take possession of, and proclaim as State Forests all suitable tracts of unalienated lands, once covered by forests, to survey and mark off the boundaries of these tracts, and place them under such control as will ensure the protection of young growths; the planting, where advisable, of seedlings; and the removal and sale as firewood of all useless "suckers" or other young trees not likely to develop into useful timber.²

¹ Mining Surveyors' Reports, March 1887

² Mining Surveyors' Reports, June 1887

June 1887: Sandhurst Division - The mining industry of this district has not been in a very prosperous condition during the quarter, the gold yields and dividends having shown a further decline. ... An interesting fact disclosed during the quarter is that the Victory and Pandora Company's shaft has now taken first place as regards depth in this division, having been sunk to 2,100 feet. There are now three shafts in the division down over 2,000 feet, and within a month there will be a fourth. With regard to individual mines, those on the New Chum line show the greatest activity. The New Chum Railway have been prospecting between 1,400 and 1,630 feet without much success ... The Shenandoah had somewhat better returns ... The Shamrock are just opening up a promising reef at 1,260 feet. The New Chum Consolidated is sinking their shaft to 1,790 feet ... The New Chum United have also been sinking their shaft and have reached 1,632 feet. The Lazarus and Lazarus No 1 have been working actively on a reef at 1,750 feet ... The Old New Chum yields have fallen off considerably during the quarter. The New Chum and Victoria are sinking their shaft, and it is now down 1,940 feet. The North New Chum opened up a reef at 1,950 feet ... The Victoria Quartz Company have been working profitably at 1,780 and 1,890 feet ... The mines north have been engaged sinking and the depths reached are: Great Central Victoria 1,590 feet; Victoria Consols 1,680 feet; and Ironbark 1,739 feet. The Hercules and Energetic Companies have been crushing extensively, with moderate results. On the Garden Gully line matters have been quiet - mentions: The Garden Gully United; Victory and Pandora. On Hustlers line, matters have improved considerably. The Great Extended Hustler's have opened up a big reef at 1,800 feet ... the other mines on the line are being steadily prospected. The Tambour Major Company has been getting better returns. The Morning Star Company, at the Big Hill, has their machinery nearly finished. Eaglehawk Division: ... there has been a falling off since the last quarter ... A number of companies are paying dividends, but in no case has the amount been very large. The most important item for the quarter is in regard the Pearl mine, where a big reef is being opened up at 1,000 feet ... The returns, though not rich, are very good, and the company has commenced paying dividends. This ground has been worked for about 30 years, but this is said to be the first time anything payable has been discovered. The adjoining companies - The Great Extended Hercules, The Great Extended Victoria, the New Victoria Catherine, the Duke of Edinburgh, and the New St. Mungo - are all vigorously pushing ahead their work, with the object of discovering the Pearl Reef. Also mentions: Duchess Tribute; South Devonshire Company; The Duchess of Edinburgh and Hopewell mines are at present idle; United Devonshire; Princess Alexandra; Extended St. Mungo; Unicorn Company; The South St. Mungo, Lady Barkly, St. Mungo, Sadowa, and Belmont and Saxby Companies have each been crushing extensively, and all have paid dividends; The prospecting operations of the Ellenborough, La Belle, York and Durham, Acadia, Princess Alice, and South Catherine have had not any special results; Catherine United Company. On the Johnson's line the prospects are fairly encouraging - mentions: Johnson's Reef Gold Mines; the North Johnson's; Rose of Denmark. Princess Dagmar; the Golden Age; Collmann and Tacchie Company; Golden Pyke; Constellation Company; the Great Northern, New Hopeful, and New Argus Companies have had moderate successes with their crushings. The New Moon Company, the principal mine on the north end of the line, is about to sink its shaft to prospect the deeper ground. The General Gordon at Lightning Hill, the Why Not at Canterbury Reef, and several similar ventures are prospecting, and there is a number of prospecting parties at work in the Whipstick. At Sebastian, the Frederick the Great Company has had a very poor quarter, the yields obtained not paying expenses. Bruhn's Tribute and the No. 20 Tribute Companies, have worked out their tribute blocks, have wound up, final dividends being paid. At Raywood, the Nil Company has been working with fair success, a couple of dividends being paid. None of the other companies in this part of the quarter have obtained anything payable.¹

Sept 1887: Sandhurst Division: ... although we have not obtained the full benefit of the favourable developments, there can be no doubt that a decided increase in the gold yields will eventuate therefrom during the next quarter. The dividends paid during the last quarter amounted to £14,669, the great portion of which was from mines working at from 1,500 feet downwards. The most favourable developments have been in the Lazarus No. 1 and Great Extended Hustler's mines, and to both of these a special interest attaches from the fact that both are deep mines, the former working at 1,750 feet, and the latter at 1,805 and 1,900 feet. Work continues to be actively carried on the three main lines, and deep-sinking is still pursued, two more shafts having, during the quarter, reached depths exceeding 2,00 feet. Mentions: New Chum Consolidated; Lazarus No 1; Old Chum; New Chum and Victoria Company; Victoria Quartz Company; Great Central and Victoria Consols Companies; Hercules and Energetic Company; Garden Gully United; Victory and Pandora; Great Extended Hustler's Company ... Of the outside mines, the Tambour Major, at Specimen Hill, have had a moderately payable yields at 687 feet. Mining companies generally are fully alive to the advantages of utilising labour-saving machinery, and all improvements, especially in rock-boring machinery, are eagerly availed of.

Eaglehawk: there is every reason to look for a considerable increased prosperity in the immediate future. The dividends for the quarter have been £7,675. On the Devonshire line, the Pearl Company is now getting into a better way of working its extensive reef at 1,000 and 1,060 feet ... They intend to erect a large crushing plant. The surrounding companies - the Great Extended Hercules, the Great Extended Victoria, the Dixon's Tribute, the New Victoria Catherine, the Duke of Edinburgh, and the New St. Mungo Companies - are all pushing on sinking operations. Also mentions: Duchess Tribute; South Devonshire and United Devonshire Companies; Unicorn, Phoenix, Princess Alexandra, and Extended St. Mungo companies now sinking their shafts; South St. Mungo; Lady Barkly, St. Mungo and Sadowa continue to crush very large quantities, giving a slight profit; Belmont and Saxby Company; Ellenborough Company doing little work; York and Durham. An important discovery has been made in the "Trio" shaft, to the sinking of which the South Catherine, Central Catherine, Princess Alice, and Williams' United contribute; Catherine Reef United. On Johnson's line some important developments have taken place. The Confidence Extended Company discovered a run of stone ... The Johnson's Reef Gold Mines Company opening up a large and payable reef. The North Johnson's and Rose of Denmark have been working the reef at 1,065 and 985 feet respectively with moderate results. The Princess Dagmar has cut a promising reef at 1,200 feet. The Golden Age getting fair results; Johnson's Reef Extended; Golden Pyke sinking a new shaft; Constellation Company. The New Argus, New Hopeful, and New Moon, have been getting moderate returns. At Lightning Hill, the General Gordon Company is slowly prospecting. One of the most important events of the quarter has been the opening up of a lot of payable stone on the Chrystof Reef, from which Siler and Co. and Bachyths and Co. have obtained excellent yields. The reef lies in the Whipstick Scrub, three or four miles from Eaglehawk. A lot of leases have been taken up, and should the yields continue the result will be the opening up of a large tract of hitherto undeveloped country.¹

late 1880s: Reviewing progress at the end of 1887 the local Mining Registrar could speak of 'much vigour during the quarter just ended' and of 'an appreciable brightening of prospects'; of 'deep-sinking being pushed on with unabated spirit'. The following year showed a production increase of 10,000 ounces but the 174,581 ounces produced by the Sandhurst mines in 1888 was not to be exceeded until the mid-nineties, even though an annual production of over 100,000 ounces was maintained until 1916. A staggering annual average yield of 200,000 ounces was achieved until 1909, covering nearly sixty years of continuous production. The decline in yields during the eighties was the result largely, of the difficulties associated with mining at depth and as well, of the inadequacy of existing methods of gold extraction. 'It appears, therefore, evident,' reported the 1889 Royal Commission on Gold Mining, after listening to almost a hundred witnesses, 'that to a great extent one of the main causes, if not the principal one, of the decrease of gold from our deep mines compared with the output obtained from them a few years since at higher levels is due to ore-dressing appliances.' The Commission even recommended the offering of a reward for the invention of an efficient system of gold extraction. The criticism may have been directed primarily at fields other than Sandhurst where both amalgamation and chlorination processes were employed and the treatment of pyrites, for instance, well understood.²

late 1880s: By the end of the decade nineteen shafts on the field were down to 2,000 feet and Lansell's 180 Mine, approaching 3,000 feet, was, after the Magdala shaft at Stawell, the deepest in the colony. Mining at such depth demanded not only more sophisticated equipment and mining procedures, but also, greater capital expenditure at a time when capital was being attracted elsewhere. The Royal Commission of 1889 recommended that the state pay premiums for the invention of appliances or techniques, whether associated with extraction, timbering, ventilation, hauling, fuel or explosives that would help in any way to lessen operational costs. An added burden was that of having to haul timber long distances to the mines. The Royal Commission stressed the need for afforestation programs and the desirability of halting further alienation of Crown Lands in mining areas or the clearing of its timber. Those who equipped that Sandhurst was built on the Kamarooka Forest spoke truly enough but by the late eighties local timber supplies were becoming exhausted. Red gum for shaft timbering was being carted from Echuca; other timber was being hauled from Macedon or the north-east.³

1 Mining Surveyors' Reports, Sept 1887

2 Cusack, 1973, p172

3 Cusack, 1973, pp 172-3

late 1880s: In 1874 slightly more than ten of every 1,000 miners in the colony's quartz mines could expect to be involved in some kind of serious mining accident. By 1888 this number had been reduced to slightly less than 4 per 1,000. And whilst previously four out of every 1,000 quartz miners died each year in mining fatalities, by the late eighties the toll had halved. However, with the increasing use of dynamite and the introduction of litho fracteur and other explosives, the appearance of the pneumatic rock-drill in the mid-seventies and the generally inadequate ventilation of deepening shafts, a new and insidious danger began to present itself. Constant inhalation of the quartz-dust produced by drilling, and to a less extent by blasting and shovelling, hastened the onset of a respiratory condition for which there was no known cure. Though Section 45 of the Mines Act specifically forbade boring or drilling without an accompanying jet of water, the regulation was not policed and so, rarely adhered to. The miners flouted it because of its inconvenience and mine-managements regarded the omission with indifference. In 1888, as a result of representations to the Mines Department, a board was appointed specifically to enquire into ventilation in the Sandhurst mines. Probably, few working miners would have agreed with its finding that most local mines were 'fairly well ventilated'. It did, however, draw attention to grave deficiencies tolerated in some of the deeper mines and in particular, in the Lazarus and the Great Extended Hustlers, in parts of which men were regularly working in temperatures as high as 89 degrees. It found conditions in the Great Extended Hustlers Tribute so bad and the management so negligent, it recommended immediate action to compel the owners to rectify them. The problem of ventilation had its genesis in early doubts of the continuation of gold at depth. As a result, little or no provision for ventilation was made in sinking shafts. Often the problem itself and the principles involved, were not understood. The simultaneous sinking of winzes and the use of cross-cuts as strongly recommended by the Board to ensure a circulation of fresh air below, had been rarely carried out by mine-managements because of the costliness of double sinking. This was particularly marked on the Bendigo field where sinking through as much as a thousand feet of barren rock between saddles, was sometimes necessary. The Board also recommended the close timbering of shafts to assist ventilation. The air in Lansell's 222, a closely-timbered shaft, was clean and pure at the 1,600 foot plat. The same was true of the Hercules, the Energetic and the Little 180, all of which were closely-timbered. But these were the exceptions. Most shafts had poor ventilation. A few of the deeper mines were installing mechanical devices in an attempt to reduce temperatures and clear the air. The Great Extended Hustlers had a 'Roots Blower' at the surface to pipe down cool air and had reduced temperatures below by several degrees. Experiments were being made with other types of fans and blowers but none provided a complete answer to the problem.¹

1880s-90s: Local mine management warmly supported moves during the eighties and nineties for a rail-link from Violet Town to Portland or Bordertown via Sandhurst which would have provided access to the timber reserves of the Strathbogie Ranges. The idea found even warmer support in the north-east where it would have provided not only an impetus to the flagging timber industry but also, ready access to Sandhurst's important stock-market.²

1 Cusack, 1973, pp174

2 Cusack, 1973, p.173

BENDIGO – HISTORICAL NOTES (2)

- early 1890s:** Elsewhere in the colony the beginning of the decade was marked by serious economic depression. The withdrawal of British capital from colonial ventures following the big financial crash in Argentina in 1890, spelled an abrupt termination to the Melbourne-based boom in real estate. Work on public buildings and projects ceased, unemployment peaked, land values dropped, the building trades became depressed and prices for primary produce slumped by as much as 50 per cent. Sandhurst was fortunate its livelihood depended primarily on gold for the nineties were to see the sparking of a world-wide interest in gold as standard currency... by 1897 its recognition as a currency determinant had become almost universal. Even so, the local industry at the turn of the decade could hardly be described as buoyant. The critics contended that whilst capital was poured into deep sinking with unavoidable slowing down of production, with diminished yields and dividends, much ground at shallow levels, as well as other ground known to be auriferous, was neglected. The root of the malaise went far deeper, however. Basically, the problem was that of the drying up of outside and particularly, overseas capital sources. Discovering ways of re-interesting the overseas investor in Victorian gold-mining, and in the Sandhurst mines in particular, engaged the attention of local mining companies and *entrepreneurs* most of the decade.¹
- 1890:** However, despite the pessimism and prognostications, over a hundred mines were managing to operate profitably on the field and even in a lean year such as 1890, 25 per cent. of them paid dividends that amounted collectively to almost £150,000. The year following was an even leaner one in terms of production but shareholders received as bountiful a share in dividends.²
- 1890-92:** The Sandhurst mines produced just over half-a-million ounces of gold and for the quarter ending 30 September 1892, paid almost as much in dividends as the rest of the mining districts in the colony altogether. In 1892 thirty-four public mining companies appeared on the dividends list which meant that at least, one in four of the Sandhurst mines, were paying a dividend.³
- May 1890:** Sandhurst District - During the quarter a material improvement in mining operations is observable throughout the Sandhurst division. The New Chum Railway Company have opened up the reef at 2,200 feet with satisfactory results that the company are now on the dividend-paying list, while the yields from the Shenandoah Company's mine, at 1990 feet, have improved sufficiently to render the payment of dividends in the near future a matter of certainty. At 2,000 feet the Lazarus and Lazarus No 1 Companies have been working with good results. Satisfactory work is also being done in the mines on the Old Chum, New Chum, and Victoria reefs. It is worthy of note that operations on these lines are being carried out at deep levels - ranging from 1,900 to 2,200 feet. On the Hustler's line the Fortuna Hustler's Company made an important discovery at 320 feet, enabling them to not only repay the subsidy received from the Prospecting Vote, but also to declare a dividend. Owing to the progressive work done by several of the companies during the quarter, mining work in the Eaglehawk division has been of a quiet character, nevertheless highly satisfactory returns have been received from the mines on some companies, notably the Johnson's Reef Company and the Johnson's Reef Extended Company. General remarks. The event, which during the past quarter calls for most remark, is the considerable falling off in the yield of gold. The results of the previous quarters had encouraged me to hope for some continued improvement, but I regret to say that this anticipation has not yet been realised. Particulars, which are given in this Report as to the mining operations in the several districts, will afford some information as to the localities in which the falling off in yield of gold has occurred. It may be well to consider why it is there should be a falling off of such amount, whether it is likely to continue, and if so, what possible remedy there may be.

1 Cusack, 1973, p.187

2 Cusack, 1973, p.188

3 Cusack, 1973, p.189

There is no doubt that the great discoveries of silver ores in New South Wales have withdrawn an immense amount of capital from Victoria which would otherwise have been available for investment in gold mining here; but that only accounts partially for the depression. This capital may return again, but there are other and more serious causes. The decrease in the amount of gold obtained in Victoria by mining has fluctuated, but, taking a series of years, there has been, as it is well known, a gradual falling off in total annual amount. It is self evident that this is part due to the gradual exhaustion of the more easily accessible deposits, whether alluvial or quartz gold. This is so indisputable that it is scarcely necessary to allude to it. Year by year alluvial mining has been carried on at greater depths, and with increased volumes of subterranean water to contend with. Quartz mines have been continually worked to deeper levels. In each class of mining it has become necessary to provide more powerful and more costly machinery and appliances. These and other analogous causes have practically increased the cost of each ounce of gold that has been won. This increased and increasing cost has a further effect in causing wash or quartz to remain untouched if it falls below a certain yield, which under other circumstances would have given some margin of profit. To all this must be added the fact that in many cases, as quartz lodes have been worked to greater depths, the material to be treated has become more refractory, and thus more difficult and more costly to treated than free milling quartz which existed where only surface conditions prevailed. The enterprise, the ingenuity, and the perseverance of the mining community have grappled with these increasing and serious difficulties with a great measure of success, and mining from year to year has become more scientific in its methods of meeting, what may be called the natural and inevitable obstacles, which must beset it wherever carried on. But there are, unfortunately, other causes, which I am satisfied, have had a most depressing, not to say disastrous, effect upon the industry. It is quite certain that at the present there is a reluctance to embark in gold-mining adventures, which is not due merely to the increasing expense attending the deepening of our mines. It is to my mind evidently due to a want of confidence on the part of those who have more or less capital to invest in similar ventures.⁴

March 1891: Nineteen shafts on the field had been sunk to a depth of over 2,000 feet. The sensational strike made by the New Chum United in July 1892 was almost at the 2,000 foot level. Its richness evoked memories of the past. Some 803 ounces of gold were taken from 200 tons of stone in a week.⁵

1891-1900: A first glimmer of the field's recovery manifested itself in 1891 when Lansell's New Red, White and Blue Mine on the Sheephead Line, unexpectedly struck a rich formation as it was almost on the point of ceasing operations. From 18,344 tons of stone that year, it returned 11,422 ounces of gold, and paying out £25,875 to the shareholders, headed the dividends list for the field. The strike marked a turning-point and by 1892 a re-vitalisation of the field had occurred. There were dazzling, old-time returns from the New Chum United and the field's annual production soared to almost 200,000 ounces. A feature of Sandhurst mining during the period was that prosperity did not hinge upon one or two mines. There was a succession of out-standing yields from several mines, some of which had produced only indifferently before. 1890 Johnson's Reef had been the premier mine; in 1891 it was the New Red, White and Blue; in 1892, the New Chum United. The Johnson's Reef Company became the chief gold-spinner in 1893-4 with the Princess Dagmar also outstanding. In 1895, the Lady Barkly and the New Prince of Wales headed the dividend lists. A year later they had been toppled by the New Chum Railway and Koch's Pioneer Mine. The procession continued. In 1897 it was the Great Southern and the Victoria Quartz, the St Mungo and the New Moon. In 1898 the Garden Gully United staggered the mining world with its returns and retained pride of place in the dividend catalogue until the turn of the century.⁶

4 Mines Dept Report, May 1890

5 Cusack, 1973, p.189

6 Cusack, 1973, p.189

1892: Annual Reports.

The following are some of the highest returns obtained by companies from quartz during the year:

New Red White and Blue Company, Bendigo, 13, 518oz.

Johnson's Reef Company, Eaglehawk, 12613oz.

New Chum United Company, Bendigo, 12, 408oz.

Princess Dagmar Company, Eaglehawk, 11,189oz.

Great Extended Hustler's Company, Bendigo, 9,329oz.

Garden Gully United Company, Bendigo, 7,981ozs.

Hustler's Reef Company, Bendigo, 7,900oz.

United Hustler's and Redan Company, Bendigo, 7,384oz. ⁷

1892: If further confirmation were needed that the field was far from exhausted, in 1892 there appeared a comprehensive report on it by the Government Geologist, E J. Dunn, foremost authority of the day on Victorian mining. Dunn expressed unqualified confidence that the resources of the field were such as to probably employ the local population for centuries to come. "There is yet no indication whatever," he wrote, "that the full depth of the gold-bearing strata on the goldfield has been reached, and thanks to the splendid pioneering work done by such men as Mr G Lansell and others, the possibility of pursuing gold mining at depth of 3,000 feet or more has been demonstrated."⁸

c. 1893: Present Mining Manager of South New Moon Mine in 1913 - About twenty years ago he was manager of the Kangaroo Hydraulic Co., at Diamond Hill. At that mine the power to operate the battery was supplied by a huge water wheel. Leaving the Kangaroo Hydraulic Co. Mr Westhead went to Thomas's United mine at Fosterville ...⁹

1893-1894: Annual Reports.

The following are some of the highest returns obtained by companies from quartz during the year:

Johnson's Reef Company, Eaglehawk, 21,327oz.

Princess Dagmar Company, Eaglehawk, 16,350oz.

New Red White and Blue Company, Eaglehawk, 13,474oz.

United Hustler's and Redan Company, Bendigo, 8,924oz.

Johnson's Reef Company, Eaglehawk, 14,151oz.

New Red White and Blue Company, Eaglehawk, 7,583ozs

Garden Gully United Company, Bendigo, 6,886oz.

Clarence Company, Eaglehawk, 6,811oz.¹⁰

1894: North New Moon - next to Suffolk United. This company had two machinery shafts on its lease. The south shaft was the deepest, to 1,442 feet, while the north shaft was only 278 ft. The mine was worked continuously from 1894 to 1924 during which period 74,778 tons of stone were crushed for 26,734 oz., paying £18,000 dividends. The main shaft was in Dead Horse Gully, the north shaft some four to five hundred yards distant near the crest of a low hill. Here also was a 20-head battery. Quartz from the main shaft was carried to the battery on a flying fox. This consisted of a fixed overhead cable on which ran suspended cages carrying the trucks of ore. An endless, revolving steel cable towed the full and empty cages to their destinations. These four great mines - New Moon, South New Moon, Suffolk United & North New Moon - their leases extending for almost a mile from the southern boundary of the Whipstick yielded in all 555,906 oz of gold ... To obtain this amount of gold 1,194,002 tons of quartz was reduced to sand ... Excavations to mine this amount of crushing material entailed the removal of 29,253,049 cubic feet of quartz. In comparison to the great amount of quartz removed the volume of gold recovered was almost negligible. It would have amounted to only 32.84 cubic feet.

⁷ Mines Dept Annual Report 1892

⁸ Cusack, 1973, p.190

⁹ Bendigo Advertiser [DMID records] 1/9/1913

¹⁰ Mines Dept Annual Report 1893 & 1894

Encouraged no doubt by the success of the four companies, a number of companies later sunk shafts further along the course of Murray's survey and beyond. While none were particularly successful, most of their names clung to the Moon image. In order northwards from the lease of the North New Moon the mines were the New Moon Consolidated (with north and south shafts), New Moon United (two shafts), Adelaide New Moon, Full Moon, Northern Blocks, Rising Moon and Basset's, which was the most northern along the Garden Gully line or so called Moon Reef. New Moon United - had one shaft sunk to 1545 feet. At first a small steam winch proved sufficient for haulage purposes until the shaft was gradually deepened and the winch had to be replaced by a large engine. This was one of the largest steam winding engines ever erected on the Bendigo goldfield. The winding drums were eleven feet in diameter. However, when this huge engine was erected, no extra boilers were installed. While this mine never made a name in history for its gold production, the eccentricities of the huge engine caused mainly through insufficient steam, were to remain a source of humour to local miners for many years.¹¹

1895: In 1895 some fifty-one companies on the field appeared on the dividend list. Rich reefs were unearthed in the New Chum Railway and the Shenandoah and in the Lazarus at 3000 feet, and after almost a quarter of a century of disappointing returns, the Windmill Hill suddenly began rewarding its owners handsomely.¹²

1895: Annual Reports.

The following are some of the highest returns obtained by companies from quartz during the year:

New Red White and Blue Company, Bendigo, 10,635oz.

Lady Barkly Company, Bendigo, 8,936oz.

New Prince of Wales Company, Bendigo, 7,600

Windmill Hill Company, Bendigo, 6,968oz.

Report on the Northern Mining District, Sandhurst (W Abraham): The action of the Mining Department bringing in a water race at Ellesmere will be the means of increasing mining in this direction. I expect to see the gold returns from this part increase neat year. Some of the reefs are not very rich: the formations as a rule are large and very easy to work, and consequently will not require great returns to pay. There is a very large area of auriferous country here honestly worth prospecting. There are half-a-dozen batteries on the ground, only two working at present, waiting for the water race to be completed. I expect to see a large number of miners on this field before the close of the year, and it is my opinion it will become a large reefing district.¹³

1895: Marong - Bullock Creek. There was a new discovery and rush to Fletcher's Creek in 1877 and a number of deep leads were discovered near Wilson's Hill, in the 1890s. Bohillman's Lead was worked there in 1895, Lovie's was re-discovered. Duncan and Greenway discovered the State School Lead in 1900. The Racecourse and Greenway's Leads were also opened about this time. About £60,000 worth of gold was taken from the Marong Deep Lead in the period 1901-03.¹⁴

1896: September 12: The Cyanide Process. Cyanide has long been known as a solvent of precious metal, but its practical application in connection with gold mining is only of recent date. Some eight years ago, the McArthur Forest patent for that purpose was taken out, and it has been very largely used at the African mines. How successful it has been is shown by the *Johannesburg Times Annual* of 1895. There it is stated that during the month of September of 200,000 oz of gold obtained on the field 60,000 oz were due to the cyanide process, and would have been lost without it... Taking the average cost of treating tailings and concentrates at 4s per ton (a cost which is said to be high), this would give about £575,000 as the total cost of extracting the gold. Deducting this from the value of the bullion recovered, the sum of £1,485,000 remains as the approximate profit arising out of this method of treatment.

The dividends declared by the companies mentioned during this period is noteworthy. These dividends exceed the profits derivable by cyanide to the extent only of £200,000.

11 Perry, 1975 pp214-227

12 Cusack, 1973, p.1893

13 Mines Dept Annual Report 1895

14 Flett, 1979, p252

It is remarkable that the process has been so little tried in Australia. Probably the very high royalty demanded has been the obstacle. In Queensland the Croydon Co has tried it with great success. A detailed estimate of the cost of treating 37,781.1 oz; fine gold, 8,252.2oz; fine silver, 26,756.6 oz. was £17,466 14s 1d, and the cost per ton 9s 4s 11d. Included in the cost was £2,861 for royalty. Splendid dividends were paid. In Victoria the process was tried at Tarnagulla on old tailings from the Prince of Wales Co and the Old Poverty Co. A report on the work done was written for the *Maryborough Standard* by Mr Ronaldson, mining inspector. It shows that three-fourths of the sand required concentration to dispose of the slimes, and this was effected by means of concave buddles, which treated 120 tons in eight hours. Two-thirds are washed away and the remaining third treated in the solution. Repeated daily assays are made from the buddle and the slimes, in order to obtain the maximum of rapid treatment with the minimum loss of gold in the water and slimes discharged. These, show they only contain a few grains of gold per ton, so the process so far is most effective. The concentrates are deposited in leaching vats and saturated with the prepared cyanide solution, which is allowed from six to 12 hours to dissolve the gold. The solution is then drawn off and allowed to percolate through a series of carbon filters - at a rate to secure the complete precipitation of the gold. The gilt carbon is subsequently burned, and the gold is soon produced in bars. Sand with only a small percentage of slimes is treated without concentration; expense is saved, and very low-grade material made to pay. The completeness of the process is shown from the fact that 90 per cent of the gold is obtained. From 2,500 tons treated an average yield of 4dwt of gold to the ton was obtained, leaving a very handsome profit. There are some 40,000 tons of tailings to be treated, and it is estimated that they will yield 10,000 oz of gold. At Sandy Creek, a couple of miles from Maldon, Mr Paull has erected a cyanide plant to treat the tailings there, and the prospects are stated to be most encouraging. A proposition has also been made to erect six 8,000-gallon vats at the Blucher's Reef, Maryborough, to treat the tailings there. These movements in Victoria are due to the upsetting of the patent right by the German Imperial Court in February last. The grounds of this cancellation appear to have been on account of the terms of the patent being to use cyanide only. No reference is made to the strength of cyanide required, or the employment of other agents to make the process more complete, or the material of the vats, or to stirring the matter in solution, and as all this was held to be the essence of the patent, the people who claimed to employ cyanide with these additions, succeeded against the patentees. The patent is the same in Germany, Victoria, New South Wales, Tasmania and New Zealand, and the applications of the patentees to amend the terms of the patent to cover the additions referred to have been resisted in these colonies. With no heavy royalty to pay, the chance of making low grade tailings profitable, is increased. There are thousands of old tailings on Bendigo, which would pay well by cyanide treatment, but there appears to be great hesitancy in making a start. The process is a simple one, and the cost of the required plant not great. In trials made, there have been failures, but these have probably arisen from the presence of antimony and zinc ores which would precipitate the gold in solution, or it might arise from the coarseness of the gold and sufficient time not being allowed for the cyanide to act. On Bendigo the fine gold lost is, as a rule, free, and the cyanide would therefore have an excellent chance of acting. It has to be noted also that Bendigo tailings are not ground so fine as they might be, and if they were still further reduced a greater percentage of gold might be obtained. Besides gold from the tailings it is possible that the sludge from the old puddling mills in the Bendigo Flat by the White Hills would pay well if treated by the cyanide process. Assays have shown it contains a large percentage of fine gold.¹⁵

1896: Sept 14: The cyanide process and capital for Bendigo mines. Sir, - Your leaders in Saturday's issue on the cyanide process of extracting gold from tailings, etc. and your approval of the action of the Mining department in sending home an officer to give information in re the mining resources of the colony, are to the point, and I have no doubt will be productive of much good. If capital can be got to work our quartz tailings by this cyaniding process and it proves a success, and immense future of prosperity is before this place, as not only in that case would the quartz tailings yield richly the precious metal, but puddlers' tailings, and the old alluvial workings throughout Bendigo would pay still better. Nearly the whole of the fine gold from the 3,000 puddling machines formerly at work on this field having been lost ... Yours W. D. C Denovan.¹⁶

1896: Sept 16: Cyaniding in Bendigo. At Mr. J. Deeble's United Pyrites Works, the plant is being extended so as to provide for the use of cyanide and kindred solutions. In order to

¹⁵ Bendigo Advertiser [DMID records] 12/9/1896

¹⁶ Bendigo Advertiser [DMID records] 14/9/1896

get over the difficulty experienced in South Africa of making the slimes, which form a large portion of the refuse from the crushing machines, amenable to treatment by the solutions, Mr. Deeble has invented a mechanical appliance which is claimed to achieve this object, and it has been patented all over the world, and it is probable that the system may be taken up by British capitalists. The works and the vicinity are now lighted during the night by two large electric arc lights. The cyanide process will probably cater more prominently in the future history of Bendigo mining should initiatory experiments prove profitable. Mr. A. Hamann is now erecting buildings, etc., for a cyanide plant at the Great Britain mine to work the old tailings. In Africa experiments are being made in submitting to cyaniding the quartz directly after being broken by a rock crusher and without being crushed or rolled. The quartz, however, is very friable and crumbles easily. The recent leading article in the *Bendigo Advertiser* on the subject of cyaniding has been the subject of considerable discussion. In connection with this matter an exchange very practically says: - "It will not do to suppose that the possession of a few hundred-weight of cyanide, and a heap of tailings, is necessarily the ground work of a fortune. In the first place there may not be sufficient gold in the tailings to pay for extraction. In the next place the gold may be there in satisfactory quantities, but it may be allied with other metals which also are greedy for cyanide, and thus cause too great a consumption of the wonder-working solvent to be profitable."¹⁷

1896, Sept 16: The Great Southern have now resumed regular work ... During the stoppage many desirable improvements were made on the surface to the tramway shoots, etc. and the battery, etc. overhauled, so that everything is now in good order.¹⁸

1896, Sept 19: Cyanide and tailings. [to the editor of the Advertiser] Dear Sir, I read the letter in your issue of the 12th on the above subject with interest, as it is one in which I have been concerned since 1892. In that year I induced three gentlemen to inspect the tailings heaps in Bendigo, and as a practical earnest of their desire to do business, sample of the tailings from the Fortuna and old heaps adjacent, Catherine, Clark'e, and Virginia (old and new heaps) were sent to Swansea, and New York for assay. The results therefrom were fairly good, ranging from 1 1/2 to 3 1/2dwts per ton, and this led to the dispatch of several tons a few months later. Afterwards, in 1893, I consigned six tons to Melbourne, but the practical results from both lots were unsatisfactory, though it did not close the experiment for another larger parcel was treated with no better encouragement, and even after that a series of bores were put through the larger heaps at all angles from top to bottom to obtain a fair average sample without, unfortunately, results good enough to justify the erection of plant. Apart from the pooriness of the tailings, however, there is another drawback, viz. the difficulty of storage, as it was a condition insisted on by the companies that the debris should be removed from the existing area. With the exception of the Fortuna heap, there is no convenient spot where the tailings may restacked, and there is an endless view of litigation for any company taking this matter in hand. Mr Denovan's suggestion that the alluvial gullies may be profitably treated is, I think, impracticable. The material, from its clayey nature, sets so compactly that the cyanide solution could not take effect quickly enough, and loss of time in treatment of poor stuff means diminution of profits, as these are dependent on large quantities being dealt with in a short time. The one place I know of about in Bendigo, where cyanide might be profitably employed, is the Slate Reef. There the gold is so fine and the material so easily crushed that large quantities could be dealt with, as is done in Africa, where the gold is much the same character. It will never pay as at present worked, if from no other cause than from want of large quantities of clear water. The water must become thick and carry off much of the very fine gold, and I think this view is borne out by recent crushings. When treated at Eaglehawk the yields were 7dwt per ton, now they are about 3dwts, and the directors would do well to have the tailings assayed after passing the plates. Assays, rightly enough, are not believed in Bendigo, but the Slate Reef is so different from anything else in the district that they are warranted, and indeed, necessary. The cyanide process commonly in use at the African mines provide for zinc shavings and plates, whereon the gold is deposited after having been in the solution. At Tarnugulla charcoal is employed instead, and I understand the methos is otherwise slightly different and known only to those working it.

Tarnagulla was chosen in preference to Bendigo, after all the experiments that I have named, which were carried out by the same people, and who were perfectly satisfied with the royalty to be paid. The two difficulties were the low-grade material and the difficulty of storage. I hope I have not trespassed too freely on your valuable space; the subject is

¹⁷ Bendigo Advertiser [DMID records] 16/9/1896

¹⁸ Bendigo Advertiser [DMID records] 16/9/1896

one of importance to Bendigo, and public correspondence is a means to its solution - Yours etc. Cyanide.¹⁹

1896, Sept 22: The South Prince of Wales. [the Prince of Wales line of ref]... was first pegged out on Good Friday 1855. The outcrops of quartz that had prior to this been discernible on the top of the hill near the old engine shaft had for some time been a favourite hunting ground, where visitors could occasionally pick up very good specimens. There were at the time two camps of blackfellows in the immediate vicinity, and one of the aboriginals picked up and sold to Mr. Hamilton, a storekeeper, a stone that contained 10ozs. of gold. This resulted in some prospecting, and a man named George Clark (no relative of the speaker's) first sunk a shaft and obtained payable gold. As a consequence the reef was first called Clark's reef. Clark soon disposed of his claim to Messrs Hopkins and Denyer, whose names were prominent in the annals of early mining. They soon acquired two or three adjoining claims, and amalgamating the lot, rechristened the line "prince of Wales", a title which has proved lasting. The first little crushing plant on the line was put up by Hopkins and F Denyer in 1857. It consisted of four light stamps and a Chilian mill. Shortly afterwards a Mr. Brown bought into the claim. In January 1858, the light battery was replaced by heavier stamps, and these early in 1860 gave way to a 24-head battery of revolving stampers. At this time good cakes of gold were coming in weekly. The old engine and pump shaft was commenced and the first winding engine erected in the latter part of 1860, and for about 14 years the mine was worked with profitable results, but later on the line was idle for some time. The South Prince of Wales, the starting of whose machinery they were assembled to witness, was formed out of the southern portion of the old Prince of Wales lease, and a lease to the southward including the old Southern Cross claim ... registration in July 1893 ... The completion of this work has been delayed by the fact that the first boiler proved defective, but a new one, answering all tests, has replaced it and work will now be started ... The winding engine was purchased from the General Gordon (lightning Hill) and consists of a single cylinder engine, 10 inches in diameter, with 9 feet 4-inch stroke, with 8 feet drums and a Cornish fine boiler 25 feet 6 inch. The whole cost £700. Prior to the erection of the plant, the present main shaft, which is 800 feet from the Prince of Wales boundary, and about 475 feet from the old Prince of Wales shaft, was cut down about 100 feet and sunk to 200 feet.²⁰

1896, October 6: Ellesmere, 5th October - Pilcher's battery is kept busy crushing for the Axedale Consolidated on good payable stone. At Riley's battery, Daley and Weston's are crushing with one box and will clean up next week. Further north, F. Thomas is crushing at Stewart's United battery, and will clean up today. Stewart's United got a yield of 111-oz. amalgam from the plates and silver for the week. Bloomquist and party are crushing at McCormack's battery; also Brooks and Jones have a box going. The Thomas' United have suspended crushing operations pending the completion of their new battery, which will be one of the most compact plants on the field. Worcester Brothers are raising a large pile of crush dirt for their own battery, which they lately purchased from the Thomas Brothers. H. Hunt is sinking his main shaft and has logged up and made a good paddock for crush dirt. Some of the prospectors continue to get good dish prospects from the new reef east of the Sugarloaf, but very little has been crushed yet. The Stewart's United battery had a slight accident on Friday evening, owing to one of the clacks of the pump giving way, which will cause a stopping for the remainder of the week.²¹

19 Bendigo Advertiser [DMID records] 19/9/1896

20 Bendigo Advertiser [DMID records] 22/9/1896

21 Bendigo Advertiser [DMID records] 3/12/1896

1896, Oct 1: The Shenandoah air compressor at the Shenandoah mine has just constructed by [Messrs Thompson and Co.]. The compressor is of similar design to those of the Clarence, New Moon and other mines, but being of more recent construction, several improvements have been introduced ... The machine, is the largest and most powerful of its kind yet built, and certainly is of a handsome and high class finish. It is of duplex, double compound, girder trunk type, with jet condenser, having compound steam cylinders 14 and 24 1/2 inch diameter respectively, by 3 feet stroke. The air cylinders are water jacketed, and both fitted with the firm's patent safety inlet valves, sight-feed automatic lubricators to cylinders, adjustable bearings throughout, polished cap ends, and all the latest improvements. Between the air cylinders an improved intermediate receiver or cooler is placed in connection with the compound or two stage compression of the air, the air being first forced into this chamber at a pressure of about 35lbs by the low pressure cylinder, and thence drawn by the high pressure cylinder, and delivered into the main receiver at the working pressure of 100lb. per square inch. A few years ago they had three boilers, and at a time when the shaft was less than 1700 feet deep they were often stuck for steam power. They decided to get three new boilers on an improved principle and though there were many who at the time said they were throwing their money away, they had now at a much greater depth plenty of steam, and the new boilers had, in the matter of firewood more than saved their cost. The new air compressing plant cost under £1000, and in a few years they would, while having much more air, save its cost in fuel, as the boilers had done. [Mr Thompson spoke] ... His firm was at present negotiating for a new engine at the New Moon battery, at present using 98 tons per week. They proposed to save 43 tons per week ... At the Lady Barkly and South St. Mungo crushing plant, where the consumption had been 60 tons of wood, they brought it down to 26 tons. ... With regard to the present plant he made a fair and square estimate of the difference. In 12 weeks previous to its starting the consumption of firewood was 262 tons a fortnight, as they had engine, compressor and seven batteries to work. With the new plant the consumption was no more than 215 tons.²²

1896, Nov 3: The Pick-O'-the Field Gold Mine - Starting of the Machinery - Yesterday afternoon at the invitation of the local advisory board of the Bendigo Goldfields Co, (Limited), of London, there was a large gathering of ladies and gentlemen at the Pick-o'-the-Field mine, at Diamond Hill, to witness the starting of the newly erected winding plant. The mine, which is being developed by English capital, introduced by the Bendigo Goldfields (Limited), is on the Thistle line of reef on the ground of the old Thistle Co, and the lease is 800 yards along the line of reef. In the fifties and early sixties the upper formations on the line yielded largely, but since then the ground has been idle until three or four years ago, when a small private company endeavoured to reach lower formations, but was beaten by the influx of water and want of capital to provide adequate machinery, and though they met with promising indications at 200 feet they were obliged to abandon the undertaking... It consists of a compact winding plant of 75-horse power, with multitubular boiler. The engine has a 16-inch cylinder, with 3 feet stroke and 6 feet winding gear. Provision has been made for attaching pumping gear at any time. The poppet heads are 50 feet high. The contract for the manufacture and erection of the machinery fulfilled by Messrs A. Harkness and Co., under the supervision of Mr J. Delbridge, consulting engineer. The total cost was about £1200. The very appropriate title of the Thistle and Rose was given to the plant.²³

1896, Dec 3: The Princess Dagmar - This company has, after improving its hauling power, resumed work below, and after the water is taken out will be in a position to open up the deep ground and prove the nature of the reef formation which they have just touched. The resources of the single engine having become overtaxed, it was decided after shaft sinking was completed to increase the haulage power. A contract was let to Messrs. Harkness and Co., and the work was finished well within the contract time. The old single engine was taken out and replaced by a pair of 17-inch cylinders, with 3 ft 6 inches stroke and a 10 feet fly wheel. The cost to the company was about £600. They now have a plant, which will take them down to 3,500 feet comfortably. The machinery is fitted with two of the Vacuum Oil Company's patent sight feed lubricators, of which nearly 70 are now in use in this district.²⁴

1896, Dec 2: Cyaniding Bendigo tailings heaps. Negotiations are now proceeding which will have the effect of greatly enhancing the value of the tailing heaps which have been such an

22 Bendigo Advertiser [DMID records] 1/10/1896

23 Bendigo Advertiser [DMID records] 3/11/1896

24 Bendigo Advertiser [DMID records] 3/12/1896

unsightly adjunct to the leading mines of the district, and have been regarded until recently as a worthless nuisance. Steps are now being taken for cyaniding these tailings on a large scale, and have progressed so far that some large heaps of tailings have been secured. Should the matter result profitably it will mean a great deal for the district, as not only will a quantity of waste material be used up, but mining companies will have a not inconsiderable source of revenue; while steps will no doubt be taken in disposing of the refuse to mitigate the nuisances which experience has shown to have arisen in the past. In one case at least, and probably in many others, the removal of the heaps will relieve the company from an almost insurmountable difficulty in insufficient room on the surface. Cyanidation is already carried on to some extent in Bendigo. One of the pyrites works is giving the method a trial, while the Bendigo Gold Recovery Company is at work on the Great Britain heap. It is understood that a good deal of dirt has been put through by the latter, but no results have been made public. The company, however, gets 6d a load. It is also stated that the tailings at one of the pyrites works are being profitably treated. According to the negotiations referred to, however, the system is likely to be used on a much larger scale. Among the heaps that have been secured are those of the St Mungo and Virginia Companies, both very large lots, covering many thousands of tons. The St Mungo heap has been sold for a bulk sum, and it is understood that the Virginia is to be paid for at 1s 6d per load. A small heap on the Golden Age lease (from the old Shellback machine) has also been sold. Negotiations are proceeding in other directions. Should negotiations be successful, the sludge difficulty will probably receive a prompt solution, as should it be found payable to treat standing heaps the millions of tons of sludge run down the creek would no doubt be equally profitable.²⁵

1896-97: The New Chum Railway extracted 13,273 ounces of gold from 13,535 tons of stone, or the 1897 return of the Great Southern with 21,128 ounces from 20,331 tons. Even more outstanding that year was the crushing from the Victoria Quartz of 11,443 ounces from 4,676 tons.²⁶

1897, 5 January: Marong, 4th January - On Thursday the Slate Reef Company crushed 32 tons for 9oz 7dwt 6gr gold. This lot consisted of material that had been hauled up and deposited in the paddock prior to the crushing which displayed such an improved yield on the previous week. The want of water is still experienced... It is rumoured that the lessees of the former Wilson's Hill Co.'s ground have a considerable amount to their credit, and I hope soon to record a commencement upon their part. A small trial lot has been submitted from the claim in the deep alluvial to the west of Bohlmann's lead... At the deep alluvial to the north of Wilson's Hill the various parties who are concerned in Fletcher's property, and also in the Crown lands, recommenced work to-day, and on the whole the new year will open with fair prospects of success. On Wednesday Mayberry, Andrew and Chris washed a few dishes of dirt from their claim and netted 1oz 6dwt of gold out of that small quantity. This is immediately to the south of the private property, and both in the Government and private ground occasional patches are found, which, however, must not be regarded as fair prospects of the general quality of the wash dirt. Charlesworth Bros. and mates are also on wash which promises a goodly yield, and judging from the last returns secured by Osterfield, Smith and party (who own the claim situate furthest to the north-west in Fletcher's) there seems a probability of the lead being traced in the direction of Derby. The foregoing and Messrs. Wallace, Duffy and mates, the Fletcher Bros. and Truscott and party have moderately fair prospects to begin the year upon, and although their neighbours to the west had a disappointing return at the close of the last year, we all hope that their future results may be brighter. Work will be generally resumed to-day in the Yorkshire property ... Machinery, including a pumping, winding and crushing plant, is now being erected by the Great Eastern at Sedgwick, Strathfieldsaye, and the contractors made a start yesterday.²⁷

1897, Feb 1: The Mining Exhibition [Melbourne] - ...A cyanide plant, exhibited by Mr Deeble, of Bendigo, is attracting great attention...²⁸

1897, Feb 2: The Koch's Pioneer Mine ... The new national air compressor recently erected is working well. Three rock drills and an air winch are at present employed below. The battery and surroundings have recently been renovated, and are in first-class order. The whole of the

25 Bendigo Advertiser [DMID records] 2/12/1896

26 Cusack, 1973, p.193

27 Bendigo Advertiser [DMID records] 5/1/1897

28 Bendigo Advertiser [DMID records] 1/2/1897

company's eighty head of stamps is fully employed. What with the extensive progressive and developmental work below, and the large amount of machinery to look after and other business to transact on top...²⁹

1897, Feb 2:

The Mining Revival - A Long-neglected District - ...Bendigo furnishes a marvellous record of productiveness. Last year Victoria's gold yield was 805,000 oz., of which Bendigo produced one-fourth or eight tons. The same ration has been preserved since the birth of gold-mining in Victoria, the total production of the Bendigo field from 1851 to the end of 1896 being 16,342,310 oz., of the value of £65,369,240 sterling. In other figures, Bendigo has produced upwards of 650 tons of gold. The great bulk of this enormous wealth has been won from the quartz reefs in a very circumscribed area - a length of nine miles (from the Great Southern to the New Moon mines) by a width of less than two miles. Innumerable other auriferous reefs exist in the district, but they have not yet been prospected systematically. About fifteen miles eastward from Bendigo proper lies the new reefing field of Ellesmere, where some 400 or 500 men are profitably employed dealing with large deposits of low-grade ore, which yields fair profits. Nine miles westward lies Marong, where the mining industry is again reviving. Fifteen miles northward from Bendigo is the Sebastian field; and 15 miles southward are the Sedgwick reefs... It is significant that the outposts of Bendigo's mines, the Frederick the Great, at Sebastian, to the north, and the Great Eastern, at Sedgwick, to the south, are two of the few ventures which are being carried on by the aid of British capital. Another point of interest is that the money to work the latter mine was obtained partly by departmental aid, inasmuch as the Minister of Mines granted an exemption of the labour covenants whilst arrangements were being completed whereby the whereby the necessary capital was obtained. The reefs at Sedgwick have been lying idle for considerably over thirty years. When first opened up in the shallow ground they yielded well, as much as 12oz. per ton being obtained from rich patches. However, most of the ground was worked by parties holding miners' rights claims, and the small area of these claims is shown by the very numerous shallow shafts sunk. No reliable records were kept concerning the returns in those days and the records of the company then at work on the field (the Great Eastern) have been lost. However, it is within the memory of residents in the district that a reef 3 feet wide, yielding 9dwt. per ton, was left at a depth of 170 feet, when work was suspended by the old company. The chief cause of the suspension of work by the company was the need for improved pumping and crushing appliances. The old company worked the reef for 120 yards in length, and took the stone in places for a width of as much as 14 feet, and paid good dividends. The battery was a bad one, and owing to its excessive vibration, it wasted large quantities of quicksilver. Tradition has it that in all five tons of mercury was wasted in this manner, and, of course, the escaping quicksilver carried a lot of gold with it, so that the big heap of tailings in the gully should pay well on treatment by cyanidation. The new Great Eastern Company owns a lease of over 70 acres, with a length on the lines of reef of about 800 yards... A nice plant is now being erected at the mine. The pithead equipment is nearly completed, the poppet-legs (Oregon) being in position. The machinery has not yet arrived on the ground, but the contract time expires early in March. The contractors are Messrs. A. Roberts and Sons, foundrymen of Bendigo, and for the sum of £3,300 they provide and erect a complete hauling, pumping, and crushing plant. Later on it is intended to provide a cyanide plant. The machinery is to be erected at the site of the main shaft, just south of the gully. On Tuesday the heavy red-gum bed logs (the best of Murray River timber) were being prepared for the machinery. This shaft is 180 feet deep, and for 50 feet of its depth has been 'cut down' (that is, enlarged) and strongly timbered. The shaft is now 10 feet by 4 feet within the timber, and will be sunk its full size to a point at least 300 feet from the surface... Two dams are on the ground, one of which has been put in order, but the catchment area is limited, and it will probably be found necessary to tap the Coliban channel, carrying water to Bendigo, at a point about two miles away from the mine. The results from the battery will be awaited with interest, and, if satisfactory, what will be practically a new goldfield will be opened up.³⁰

29 Bendigo Advertiser [DMID records] 2/2/1897

30 Bendigo Advertiser [DMID records] 2/2/1897

1897, Feb 10: The Victoria Quartz machinery. A few days ago we referred briefly to the fine new plant erected by the Victoria Quartz Company ... The engineers in this instance ... are the well known firm of Messrs A. Roberts and Sons, of this city ... The mine being situated on the top of Victoria Hill, the most conspicuous object outside the buildings are the poppet legs built over the shaft, which are built of iron throughout, and constructed of the lattice girder type, with two large rope wheels, 10 feet diameter, on top which is a height of no less than 60 feet from the ground. All the braces are rigid, being securely stayed in every direction necessary, and when standing on the first platform there is not the slightest vibration whilst raising an extra large baling tank full of water at a very rapid speed, or while landing the cage with a heavy loaded truck. Handrails neatly arranged are fixed around each brace for safety. The appearance of these legs may be said to equal if not excel any erected, either constructed of iron or wood, in and around these mining fields. On entering the large building the first thing to catch the visitor's eye are the boilers, which are of the Cornish multi-tubular type, two in number, each 7 feet diameter and 16 feet long ... The action of the heated product of combustion of the fuel is as follows: - After passing from the furnace its is conveyed through the flue, in which the water bridge and Galloway tubes are fitted, to the end of the boiler, and then back through about 80 3-inch tubes to the front; thence down underneath and along the sides, and finally taken to the chimneystack by means of a brick flue. On going into the engine-room the main feature of the whole plant will be seen to be the winding engines, which are constructed on the vertical type of massive proportions. This style of winding engine is now working at Mr. Lansell's 180 mine No 2 shaft, built by the same firm, but those of the Victoria Quartz are of much larger dimensions. The cylinders in this instance are 24 inches in diameter, with a stroke of 15 feet; around these cylinders is lagging of polished cedar secured with brass bands, giving it a very elegant appearance. In order to facilitate matters for the engine driver to attend to all the main working parties, a platform is erected to which a staircase is fixed. This part of the job has been neatly designed, and what with ornamental handrailing, the whole affair has the appearance of engines such as may be seen on any of the Atlantic liners trading between England and America. The drums are 12 feet in diameter, lagged with well seasoned red gum timber, and fitted with all the necessary brakes and clutches. ... at the rear of the winding engines is a horizontal double-acting air compressor for supplying compressed air to the underground workings of the mine. The main sizes are - Steam cylinder, 16 1/2 inches; air cylinder, 14 inches, with a stroke of 3 feet. The bed plate of this engine being of a trunk pattern, and everything worked direct in one line ... The exhaust steam is taken from all that above described engines, etc. in separate pipes to a large vertical independent double acting condenser, which is worked continually and at any speed that may be necessary, showing a vacuum of 27 to 28 inches. The steam cylinder is 12 inches in diameter, with a 16-inch diameter double-acting air pump, both working in one straight line. New Moon Mine - The company's fine plant is proving especially valuable now that their work is so extensive. This is specially so regarding the air compressing plant which enables them to push ahead work rapidly. They have at work seven drills and the air winch. The crushing plant is also proving a fine investment and when the improvement which Messrs Thompson and Co. of Castlemaine have in hand completed, the saving is expected to be much greater.³¹

1897, April 4: Maldon - Oswald's North British at Parkin's Reef is looking well ... At Derby United ... It has been found necessary to erect another vat for the cyanide process of treating tailings; this will give more time for the treatment of this sand. The vat will be ready neat month.³²

31 Bendigo Advertiser [DMID records] 10/2/1897

32 Bendigo Advertiser [DMID records] 12/4/1897

1897, May 19: The Great Eastern Mine - The work of getting the old Great Eastern mine at Upper Axe Creek (Of which Mr W.W. Barker of Bendigo is the legal manager), into working order again, is being pushed on rapidly, and it is probable that in the course of a few months the company will be able to put a trial crushing through their own battery... An extensive crushing and winding plant has been put upon the ground, and the work of erecting this is being proceeded with as rapidly as possible. This plant, which is entirely new, was manufactured at the foundry of Messrs A. Roberts and Sons at a cost of considerably over £3,000, and the excellent workmanship displayed throughout gives another proof of the firm's capabilities in the production of mining machinery. It consists of a crushing battery of 10 heads and three engines, one for winding, one for pumping and one for driving the battery. The winding engine has a large double winch, and is guaranteed powerful enough for sinking at least 1,000 feet, but it will probably prove sufficient to take them down a great deal further. The boiler - a steel one - has 10 Galloway tubes and a corrugated flue, its dimensions being 26-1/2 feet long by 6-1/2 feet in diameter. The poppet legs, which are of Oregon pine and stand 45 feet high, are erected. In addition to this somewhat extensive plant, a blacksmith's shop, a storeroom, an office and a five-roomed cottage for the manager have been put up. About the mine's early history it is very difficult, at this stage, to get any information, as the gentlemen who were most actively identified with it at that time have now all passed away, and the residents of the place have, after the lapse of 30 years, but an indistinct recollection of the work done by the old company or the results achieved... it is known that the reason for the company suspending operations was that they were not able, with the plant they then possessed, to keep the main shaft clear of water. It is further known that patches from the reefs in the vicinity have gone as high as 8oz and 10oz to the ton, and an ex-employee of the old company has said that from the start to the wind up they averaged about 8dwt. When the old company abandoned the ground it was taken over by Mr Edwin Marshall, and at his death the present company applied for and obtained a lease of 70 acres, with a length along the line of reefs of about half a mile. They have now widened out the old main shaft into two winding and one pumping compartments and has taken it down to the water level - about 50 feet... Across the gully a few points west of north of the old main shaft a tunnel has been driven into the hill about 170 feet through a body which is chiefly quartz. A winze was then put down along a well-defined hanging wall, at a distance of 140 feet from the entrance, to a depth of 45 feet... It is the intention of Mr Ellis (the manager) to drive north from this winze and then stope up to the original tunnel... Right on top of the hill is a shaft which was put down by the old company to a depth of 190 feet, and it is the intention of the present management, when the machinery has been started, to drive from this shaft into the tunnel... For the successful working of the Great Eastern it will most likely be necessary to get a supply of water from the Coliban race, as the character of the surrounding country is unsuitable for catching a regular supply in the company's dams... A small matter, which should be rectified at once, is referring to the reefs as the reefs of Sedgwick. Although it is now regarded as a truism that there is nothing in a name, nevertheless in the multitude of names there is confusion, and as Sedgwick is merely the parish name it is difficult to see how it has applied to these reefs. It is a name known to no one living outside its boundaries, whereas the Upper Axe or Great Eastern reefs will be remembered by many old Bendigonians as one of the busy fields of the early days, and will probably be regarded by them as a good field for speculation.³³

1897, July 18: The Highest Yield for Fifteen Years - The annual report of the Mines department... shows the yield of gold in Victoria during 1896 to have amounted to 805,087 oz... the heaviest yield recorded since 1882... The increase of the output of gold in Victoria is attributed to several active influences, amongst which may be specified the great advancement in the construction of gold saving appliances and the introduction of foreign capital in the working of the mines. Sandhurst - total yields of gold, 191,941oz; total dividends £177,920; total miners employed, 4,633.³⁴

33 Bendigo Advertiser [DMID records], 19/5/1897

34 Bendigo Advertiser [DMID records], 18/7/1897

1897, July 18: The Forestry Commission held its first sitting today. It was decided to hear the conservator of forests first. Mr Perrin stated that the cost of the staff was £10,000 a year, which exceeded the revenue by £3,000. He was removed from the Lands department to the Mines department some time ago. He remained in the Mines department two years, and then went back to the Lands. He was sent back to enable Sir John McIntyre to get possession of the forests for village settlements. Witness protested against it. The village settlements brought about a terrible destruction of timber. The majority of the settlers have now left, and in his opinion they should never have been sent there. In his opinion about £10,000 worth of valuable mining timber has been destroyed by them. In the Heathcote State forest persons were instructed to cut down ironbark saplings for the Railway department. At Lyonville there had been some terrible destruction of timber. He protested against this. There were no traces of cultivation there now, and not sufficient to feed a goat. Some of the giant trees of Australia grew at Sassafras Gully, and they were now practically destroyed. The Wombat Forest had suffered most. The village settlers had destroyed a terrible lot of valuable timber. Practically the State has been paying for the destruction of national property. He thought there should be a Forest Act, giving power to permanently reserve State forests to pick out the best timber country, making them permanent reserves, and to place a number of foresters in charge with assistants, so that timber might be cut under conditions which would leave the forests able to produce timber for all times.³⁵

1897, Sept 3: The Ellesmere Goldfield - As it is now over three years since gold was first discovered on the Ellesmere field, a review of the work done, together with the results obtained, should be of interest. A glance at the last half-yearly returns published in *The Advertiser* will show that in very few instances has the dirt gone above 7dwt, and in some cases it is as low as 2-1/2 dwt, but even at the latter it has been broken and crushed with profit. This is accounted for by the fact that the stone was taken from shallow depths, and easily broken and crushed... the reefs at present being worked are so large that within 100 feet of the surface there is enough to maintain the present population of 1,000 people for at least five years. It would be impossible to say at present how the field will turn out at lower depths, but it is encouraging to note that the crushing from Daley and Weston's, which came from 140 feet, was the deepest and the best which has come from the mine. It went 7dwt - the average from the mine since it started up to the present time being a fraction over 5dwt... The directors and shareholders have shown confidence in their property by ordering a 20-head battery with necessary motive power. Part of this plant, which is being manufactured by Messrs A Roberts and Sons, has now arrived on the ground, and the work of erection is proceeding as rapidly as possible. Mr J.H. McColl is the legal, and Mr W. Nolen mining manager. One of its largest shareholders is Mr Frank Weston. He and Mr Charles Daley were its original discoverers. Adjoining the Daley and Weston mine, on the north side, is the claim of Lynch and Donellan (the Axedale Consolidated), and next to them comes the claim now in the hands of Mason and Donellan, but formerly owned by Mason and Ruen. The same whipping shaft does service for both claims. Lynch and Donellan have driven 210 feet south along the reef... There are several other private claims on Daley's Hill which are being worked with more or less profit. The Stewart's United, which was registered in June 1895, has proved almost from the start a payable property. It has since then crushed about 11,000 loads for an average of 3dwt. It has paid five dividends of sixpence each of a total of £3,000... The shaft has been sunk over 140 feet and is being pushed on rapidly. This company, which holds 375 yards along the line of reef, has obtained a good deal of their dirt from an open cutting... The 18-head battery that the company own is sometimes used for crushing the dirt of smaller mine owners, and has thus brought considerable revenue to the shareholders... The Stewart's Extended (Smith and Rankin) have hitherto taken all crushing from a surface cutting, but they are now going down to open out at 60 feet... Rains, Bloomquist and party, whose claim adjoins the Extended, have, in addition to a surface cutting taken out a good deal of stuff from a depth of 60 feet... From the Twilight claim (H. Hunt's) about 1,600 loads have been crushed since Christmas, the average being 4 4/5th dwt... As all Ellesmere gold is worth £4 2s per ounce, the value of the claim is apparent. The Thomas United has never appeared on the dividend list, nor has it made any calls. When the company was registered in June 1896, an advance was obtained from the Bank of Victoria with a view to putting machinery on the ground, and the company's present crushing battery of 15-head was obtained. Having to its crushing plant in going order, the company set about paying off the money owing to the bank... The hauling shaft is 50 feet deep, with levels 100 feet north and 120 feet south.

This is intended to give an idea of some of the principal claims on the main (Hunt's) line, but on the same line there are private claims, which have paid well. Chief amongst these may be the claims of G. Brooks, Roberts and Collins, and Geirisch and Hinton. To the east of Hunt's line are the claims of Mr T. O'Donnell, jnr. and O'Dwyer's Consolidated. Owing to the late Mr T. O'Donnell's battery being used for public crushing, very little stuff was crushed from O'Donnell's own claim. This property is now being floated into a no liability company of 24,000 shares. Although the last few crushings have been poor there has been quartz taken from O'Dwyer's Consolidated which has gone over 2oz to the load. On Robins' Hill the progress of mining has always been retarded by lack of sufficient batteries, as it costs between 1s 6d and 2s 6d per load for carting. These drawbacks will be removed, as in addition to the extensive plant erected by the O'Dwyer's Consolidated, the Messrs J and Chas Robins have each commenced the erection of a small battery. These extra facilities will lead to a number of mining properties in the locality being vigorously and systematically worked, and judging by the good returns from trials in the past, the work of the future should be payable. The only other line is that of the Sugarloaf, but it has had no proper trials.³⁶

1897: Annual Reports.

List of mines from which ore has been treated and dividends paid during 1897, some of the smaller companies have been omitted:

Great Southern; Victoria Quartz; New Red, White and Blue; St. Mungo; New Chum Railway; Koch's Pioneer; United Hustler's and Redan; Catherine Reef; New Prince of Wales; New Argus; Windmill Hill; Ironbark; South New Moon; South St. Mungo; Stewart's United; Lady Barkly; Virginia Tribute; Great Comet; Slate Reef; Stewart's Extended.

The following is a list of mines, from which a large yield was obtained, but no dividends paid; included are the privately-owned mines of Mr G. Lansell: Johnson's Reef; Lansell's 180; Virginia; Lansell's South Red, White and Blue; Carlisle; Lansell's Comet; Garden Gully United; Great Extended Hustler's.

Re-cyaniding. During the year a large number of samples of tailings have been sent in for experimentation as to their suitability for treatment by the cyaniding process, and in nearly every case it has been demonstrated that the gold can be extracted by means of that solvent, though frequently the gold contents are too low to make it profitable. A large number of plants are now in existence in the principal mining areas. At Stawell 200 tons and more a day are put through, but with one or two notable exceptions the plants are working on old tailing heaps. It would be a great advantage if more of the working batteries had cyanide plants attached to their existing appliances, as by that means the gold could be extracted profitably which is now going to waste; but often if the tailings be run into a heap the cost of getting them in motion again is too great to leave a margin of profit. The South Star mine at Ballarat, and the South German at Maldon, are cyaniding their tailings. One of the problems is caused by the slimes produced during crushing which are usually the richest in gold; if they be not removed they settle so densely in the vats that the percolation of the liquor is stopped; this is usually overcome by running the tailings through Butter's distributors by which means the bulk of the slimes are removed. Two different systems have been devised, one by Mr J. J. Deeble, of Bendigo, which consists of a circular vat with agitating blades capable of being raised or lowered, and keeping the whole thoroughly stirred; the vat is provided with a single side gate which can be gradually lowered to allow the clear liquor carrying the gold in solution to overflow after stoppage of the arms and the settlement of the slimes. This method is adopted in the South German Mine ... [where] ... the vats are 18 feet diameter and 4 feet deep, and require 3hp. they hold about 20 tons each, and to get a complete extraction the slimes need 30 hours' agitation, the whole operation of agitation, settling and decanting takes 48 hours, the consumption of cyanide being about 1 1/2lbs. per ton of slimes. Several parcels of pyrites have been treated without calcining by this method with over 95% of extraction of gold content. The other slimes cyanide process is that invented by Messrs D White and Simpson, of Stawell: this consists of conical vats with perforated bottoms through which air is blown, keeping the whole charge thoroughly agitated; the vats are arranged in a series; so that air from the first vat passes through the second, and so on to the end of the series; when it is pumped back and used again. Report on the Northern Mining District, Sandhurst (W. Abraham).³⁷

36 Bendigo Advertiser [DMID records], 3/9/1897

37 Mines Dept, 1897 Annual Report

- late 1890s:** The latter half of the nineties saw annual yields of more than 200,000 ounces and that of 1899 when 228,959 ounces were won, was the highest the field had known since 1876. At a time when elsewhere in the colony gold-mining, with a few exception, was practically spent, the Bendigo mines had, during the decade, produced almost 2,000,0000 ounces of gold. ... Mining was being pursued with ‘unabated vigour and very satisfactory results’ and the upward trend continued into the next decade.³⁸
- late 1890s:** Mine-managements began putting capital into new plant and much successful exploratory work was carried out in surrounding districts, particularly at Marong and Ellsmere (Fosterville). The buoyant state of the industry prompted the demand in 1898 for additional water, and the following year official approval was granted for the construction of a new reservoir on the Upper Coliban.³⁹
- 1898:** Annual Reports.
- List of mines from which ore has been treated and dividends paid during 1897, some of the smaller companies have been omitted:
Garden Gully United; Great Southern Garden Gully; New Chum Railway; New Moon; Johnson’s Reef; Victoria Quartz; Cornish United; Koch’s Pioneer; Carlisle; Lansell’s Comet; New Red, White and Blue Consolidated; Great Extended Hustler’s; Clarence United; Ironbark; Collmann and Tacchis; Lansell’s 180; North Argus; South New Moon; Hustler’s Reef No 1; Lansell’s South Red, White and Blue; Hustler’s Reef; Victoria Consols; New Argus; Fortuna Hustler’s; Stewart’s United; Slate Reef; Shamrock; Albion Reef.
- Following is a list of mines from which a large yield was obtained, but no dividends:
St Mingo, United Hustler’s and Redan; Daley and Weston, Ellesmere.
Report on the Northern Mining District, Sandhurst (W. Abraham).
Machinery erected: a crushing plant of twenty heads at Daley and Watson’s mine, Ellesmere; Black Forest Company, winch for winding; a crushing plant, 15 heads, Fosterville G.M. Company, Ellesmere, also a winch for winding; an up-to-date crushing plant of 30 heads, New Prince of Wales Company, Eaglehawk; air-compressor at Lansell’s Comet mine.⁴⁰
- 1899:** Annual Reports.
- List of mines from which ore has been treated and dividends paid during 1897, some of the smaller companies have been omitted:
Garden Gully United; Great Southern Garden Gully; New Moon; New Chum Railway; Koch’s Pioneer; Fortuna Hustler’s; Johnson’s Reef; McDuff Amalgamated; South New Moon; Lansell’s South Red White and Blue; Great Northern; Victoria Reef Quartz; Carlisle; Ironbark; Catherine Reef United; Hustler’s Reef No 1; United Ulster; Lansell’s Comet; Shenandoah; Victoria Consols; Lansell’s 180; Cornish United; North Argus; Hustler’s Reef; Collmann and Tacchis; Young Chum; Suffolk Tribute United; Fosterville; Thomas United.
- Following is a list of mines from which a large yield was obtained, but no dividends:
United Hustler’s and Redan; Great Extended Hustler’s; New Red White and Blue Consolidated; Great Britain; Unity; St. Mungo.⁴¹
- June 1899:** New Chum Railway. This mine, though it does not take a place in the very first rank of historical Bendigo gold-producers, must always be considered as of the greatest historical importance, inasmuch as it has worked payable stone at a greater depth than any other mine. Since the formation of the company in 1878, 148,145 tons of crushing dirt has been milled for a yield of 97,186 oz, while dividends to the extent of 155,399 have been paid on called-up capital of 40,579. The company...possesses 23 acres of ground, giving 300 yards along the line of reef. It has a splendid winding plant and a battery of 20 head ... When first worked in 1860 the ground gave no satisfactory return, and it was held for many years before this claim was worked. In 1871 the Railways Reserve Co. was formed to work this portion of ground...There are about 115 men employed at the mine [1899].

38 Cusack, 1973, p.1893

39 Cusack, 1973, pp.193-4

40 Mines Dept, 1898 Annual Report

41 Mines Dept, 1899 Annual Report

Eureka Prospects - The Eureka Extended Company, fired by the magnificent returns obtained by the New Chum Railway Company from their deep reef, determined early in 1897 to sink their shaft, which then stood at 2302ft. It was taken straight down to a depth of 3060 feet ... The record of this company is: Calls, £51,750; dividends, £17,625. Shenandoah mine - had a great disappointment with the New Chum Railway Reef, which was poor going north from the boundary ... The shaft is at present down 2811 ... The company has a record of: Gold, 108,906ozs. dividends, £138,274; calls, £31,667, and there was much gold got from the ground before the company's formation in 1871. The lease, on which is a battery of 35 stampers, has 280 yards along the reef. Shamrock - [adjoining the Shenandoah] Calls £31,500; dividends, £59,250. North Shamrock - Dividend record of £10,933; calls, £3333, last one made in April 1892. The Young Chum and Craven's mines do not call for such remark, but the Garibaldi deserves a few lines - In 1880 the present company was formed, and since then it has paid £52,150 in dividends on a yield of 33,626oz; calls £46,900. The company owns a battery of 34 stampers. Deepest mine in Australia: it is doubtful that Bendigo is any prouder of its wonderful yields of the past, than its possession of the deepest goldmine in the world. For many years this distinction belonged to Lansell's 180, but today it is the New Chum Consolidated which has this somewhat barren honour. The ground was worked in 1856 and from the surface to 300 feet proved very rich, some 60,000oz. of gold obtained by the claimholders ... The present company was formed in 1876 and since that date it has won 83,704ozs. of gold, distributed dividends amounting to £137,200, and made calls totalling £27,2000 ... a fine battery of 30-head. New Chum United - This mine is a famous one in the history of Bendigo, and so late as 1892 paid £1. 14s. 9d. per share in dividends from a reef opened up at 2050 feet ... This company and ... [the Ellesmere]... amalgamated in 1875 as the United New Chum. Since then the company has won 74,484 1/4oz. and paid £124,893 in dividends on a paid-up capital of £7200 ... It is a pity that early figures are not available for the ground ... it is not impossible that this ground has turned out £1,000,000 worth of gold. The company possesses a 21-head battery. Lazarus New Chum - This is one of the spots first tried by the quartz-reefers, the ground being taken up in 1854 by Messrs Gibbs and Lazarus ... in the seventies [Lazarus, who was sole proprietor] disposed of his property to the Lazarus Company for £65,000 ... The parent company has done equally well, only £29,250 having been called-up, while £99,000 has been paid in dividends, from 61,074ozs. ... contains a battery of 36-head ... Besides its vast productiveness, there are two other circumstances that tend to make the mine noteworthy. It is the second deepest in the district, and it was long unique for having a winding plant underground. Old Chum - present company, which was registered in 1871, the ground has produced 53,520oz; £97,537 dividends; called -up capital of £1 9s 3d (on 29,000 shares). New Chum - The record of this mine is a splendid one. It was first worked in 1854, and was later held by two different parties [Hudson, and Burrows'] ... Since the formation of a public company the ground has yielded 80,967oz; £112,737 dividends; £51,000 calls ... The company possesses a battery of 50-head. North Old Chum - first worked in 1855. Subsequently Mr. John Wybrants obtained possession ... In 1871 a company was formed to work the ground ... During the 27 years of its existence the company has won from the ground over 30,000oz; £42,525 in calls; £86,400 in dividends. The 180 - In the early days the ground was known as Ballerstedt's ... Ballerstedt was the pioneer quartz miner of the line, starting operations in 1855 ... he eventually sold the property, with a handsome residence on it, to Mr. George Lansell for £30,000 ... The gold won by Mr. Lansell from this mine totals about 100,000ozs. Estimated that the ground has, since 1855, yielded gold to a value of a million to a million and a half. Victoria Quartz - so rich was it in the early days that from the surface down to 150 feet it yielded £218,000 worth of gold ... In Jan 1877, the various claims were brought together in one public company, which has ever since worked the ground [dividends 82,800, calls £30,400, and total value of gold £148,686 ... New poppet legs were erected, and a magnificent vertical winding engine was set up. Great Central Victoria - The depth of shaft is 2640 feet. The company's record is a bad one: 6883ozs, £3,500 dividends and £23,800 in calls. Victoria Consols - this company has a bad record - dividends £9125, calls £26,000, output 20,222ozs; but nevertheless, included in its area is a piece of ground which was for its size almost the richest in Bendigo. The claim referred to was known as the Adventure [paid £250,000 in dividend] ... The company has a 30-head battery. The Hercules group - Until 1898 the Ironbark Co. had never paid a dividend ... The Victoria Gold Mines Co, however, when holding this ground on tribute, paid over £100,000 in dividends ... There is a 30-head battery on the ground. Hercules and Energetic - has a 30-head battery; paid £76,875 in dividends from 79,231ozs; calls £40,500. Great Extended Hercules has so far been a failure, and so, on the whole has been the Pearl ... There is a 30-head battery on this property. Two or three small mines follow, and then the New St. Mungo. Devonshire Group - Extended South Devonshire is a small claim ... Most of the ground was worked by the now defunct Duchess Tribute, which paid £23,700 in dividends, and took nearly as much in calls.

The South Devonshire, with a 24-head battery, has a dividend record of £44,000 ... The Duchess of Edinburgh Co. has 32 stampers and a record of £18,000. United Devonshire - has a battery of 20 heads ... has one of the most remarkable records ... In the early days the ground underwent many changes of ownership ... About 1882 a big mass of stone was met about 500 feet and this when opened up proved phenomenally rich [Until Dec 1884 produced 68,000ozs of gold and gave £211,400 in dividends] Since that one spell of greatness the company has never done anything remarkable. The Princess Alexandra shaft is being sunk to 2136 feet. The Mungo Group: neither the Phoenix nor the Unicorn calls for special remarks; but the South St. Mungo has, since 1882, paid £65,625 in dividends on £14,240 calls. It also yielded well when known as the Lady Barkly .. This company and the Lady Barkly possess a joint battery of 40-heads. The Lady Barkly has a splendid record - £104,616 dividends, £5783 calls; value of gold £289,155. St. Mungo has a 30-head battery, and it is famous principally for the very low-grade ore on which its dividends were paid. Snob's Hill. The great Snob's Hill revival of 1880 was due to the prospecting work done by the Ellenborough Co ... The last dividend paying reef worked in this mine was between 640 and 750 feet ... This reef proved very rich in the Belmont & Sazby, the claim adjoining on the north. Catherine Reef United - possesses a battery of 64 stampers ... The company's record is - gold won, 158,304ozs, dividends £71,410, calls £87,880 ... Ground first worked in the early fifties. Garden Gully Line: Great Southern. This is one of the largest mining leases in the Bendigo district, going 1645 yards along the reef, and taking in also the Deborah line, along which it has about 1000 yards ... possesses a battery of 40-head ... The mine's record to date is: Gold, 62,541 1/2ozs; dividends £110,179; calls £34,600. The United Ulster Co. has paid no dividends, and called up about £15,000. Londonderry Company has not done too well, making calls to the extent of £31,200 against £27,600 in dividends, but the ground was very rich in the early seventies, one of the claims among which it was then divided - the Golden Stream - being perhaps the richest south of the great Garden Gully United. The Garden Gully United - Bendigo's most famous mine - It was not until 1857 that the first claim was pegged out, a man named Woods being credited with the discovery ... Its dividends since the formation of the present company total £941,917 ... The company has a 30-head battery. The Sea, the next claim south is sinking to 1480 feet. Immediately north of the Garden Gully United mine stretches the Victory and Pandora, and the 158 yards between this company's ground and the Carlisle is occupied by the Unity ... The Unity, which has, with the Carlisle, a joint battery of 32-heads. The Carlisle - Bendigo's biggest gold producer - The mine is now known officially as the Carlisle North Garden Gully and Pass By United, commonly known as the Carlisle, has not the fame which justly belongs to it, because its marvellous riches were not given to the general public, but to one lucky man.[J B Watson] The dividends paid by the Garden Gully United made it famous throughout the mining world, while few outside of Bendigo have heard of its great rival a quarter of a mile to the north. Nor in the amount of gold produced does the Garden Gully United come even second among the mines of the locality; for the Great Extended Hustler's, which has given nearly £1,000,000 worth of gold since it has been worked by a public company, also gave about three-quarters of a million to private holders, and is therefore entitled to second place ... Carlisle formed by the amalgamation of 3 companies: Carlisle, North Garden Gully, and the Passby. Cornish United: its record to date is £89,000 worth of gold; £28,200 in dividends; and £27,000 called-up. Koch's Pioneer - in 1871 Mr Kock sold to the present company, who paid £75,000 for the mine, machinery and battery ... A winding plant of a new type has recently been erected. The vertical Corliss engine is of the triangular connecting-rod type, with no dead centre; it has two 22-inch cylinders, with a stroke of 48. The boiler is a steel double flue multitubular, 20 ft long, 7 1/2ft across, and with plates of 5/8inch. The plant, which is capable of sinking to 4000 feet, has cost, with the new steel poppet legs and the compounding of the old battery engine, £3,038, and has just been completed. There is also an air compressor; and 4-inch air-pipes have been put in the shaft, being among the largest in the district. The battery is of 88-head. Windmill Hill, which lies north of Long Gully, was one of the richest spots on the field. The whole of the hill was dotted with whims, and 30oz and 40oz returns were of no infrequent occurrence ... Lindsay and Taylor on a 60 feet claim that no forms part of the Confidence Extended lease. This claim gave the richest quartz ever won in the district, 3 tons yielding 3035ozs. It is a pity that particulars of the amounts won from the Confidence Extended ground in those early days are not obtainable, for if they were it is probable that the mine would have to rank with the million pounders - The Carlisle, The Great Extended Hustler's, The Garden Gully United, The Johnson's Reef, The United Hustler's and Redan, The United Whip and Jersey, and the Catherine Reef United. As it is, it must take its place with the Lansell's 180, the Lazarus, the New Chum United, the North Johnson's, and the United Devonshire - as probably, but not certainly, deserving to be credited with an output of £1,000,000 worth of gold.

Part of the lease of the Windmill Hill Company was once worked by the Bendigo, the first public company on the field. Johnson's Reef. The company which own the three mines which pass under this name. The ground that forms its No 1 mine was first taken up in 1853, when many 12 feet square claims were pegged out. The present company was formed in 1858, and gradually all the claims on its No 1 ground were purchased, at a cost of £34,000. Later, ground was acquired north of the North Johnson's, and £20,000 was paid for Walker's claim in that locality. All this ground now forms the No 2 mine. Still more recently (about 1880) a large claim on the Derby or Nelson line was acquired, and this is known as the No 3 mine or Nelson ... 33 years, during that time has extracted 241,000 1/2oz. of gold, and paid dividends amounting to £310,200 ... The company has nine engines at work, and employs 235 hands. The plant is one of the most complete in the district. The Nelson mine is supplied with a 25-head battery, and the No 2 mine with a 40-head battery. North Johnson's: one of the richest bits of ground for its size in the Bendigo district has unquestionably been the North Johnson's, which is now worked by a company. The company has recently acquired the Rose of Denmark claim, next north. Princess Dagmar has paid £91,597 since the present company worked the ground. Golden Age: a shaft 2571 feet deep, has a dividend record of £19,242. Johnson's Reef Extended is another mine whose career has not been remarkable ... the Constellation has been consistently call making. Specimen Hill Group - The Virginia Co., which has a large lease of 100 acres, and a battery of 50-head, has done but little better, though the ground paid well to its original holders. One of the numerous Specimen Hills which dot the neighbourhood of Bendigo in every quarter has given its name to the company whose ground lies between the Virginia and the New Hopeful claims. This claim and the claims north of up to the North Argus were all very rich on the surface. It was in this portion of Eaglehawk that the first attempt at quart-reefing was made, two storekeepers, Cave and Amos, literally hammering out £3000 worth of gold from a surface formation, which they worked for a length of 20 feet, to a depth of 25 feet ... Subsequently small companies were formed to work the ground, and some of these gave handsome dividends. Clarence United: since the formation of the present company, gold to the value of £70,000 has been won, and dividends of £25,125 paid, on called up capital of £2,125. These are not brilliant figures. North Argus - whose career had not before this year been marked with any success. South New Moon - This is another company with a bad record. It has paid £7200 in dividends during the 16 years that have elapsed since its establishment as No Liability Co. New Moon: this ground, on which is a 71-head battery has an area of 84 acres ... for the past seven years it has been a regular dividend-producer ... The New Moon Co. was formed in 1867 as a co-operative company in 10 shares ... An air-winch has recently been erected at the south shaft, the baling of which has begun, and the erection of an aerial tramway from the mine to the battery is in contemplation. Suffolk Tribute United Co - has not yet paid a dividend ... now erecting a single horizontal engine with a pair of drums 9 feet in diameter, capable of sinking to nearly 3000 feet. Hustler's line - This line is famous, not only as one of the richest lines, but also as having been, perhaps, the first in which gold was obtained in quartz, though this honour often claimed for other lines ... The discoverer of the Hustler's line was another black, named Jonathan Harris, who found gold on what is now the great Extended Hustler's Co. Hustler's Reef Co: there is a battery of 20-heads. Hustler's Royal Reserve - Its winding plant is a tip-top one. Fortuna Hustler's: a contract has been let for the supply of an air-compressor, which has long been badly needed. The winding plant is a first class one, and is no capable of sinking to 3000 feet. Great Extended Hustler's: the great mining revival of 1871 will always be associated with the name of the Great Extended Hustler's Tribute Co. which was formed in that year, and was wound up in 1895. The parent company is no less famous. United Hustler's and Redan - has been the most successful of all the companies working on this line of reef. The Central sidelines - Working from east to west, the first two are the Miller's and Derby lines. On the former very little has been done ... The Derby or Nelson line is being prospected by the Bendigo Development Company, in their ground between the Carlisle mine and Hustler's Hill. Paddy's Gully line, lying between the Derby and the Garden Gully, is of more importance. Of late years little has been done on it, the most important work being in the Collmann and Tacchi's, Lansell's Sandhurst mine, and the Sea Co's ground. Sheepshead line: one of considerable importance as it does on of Bendigo's greatest mines of recent years - the famous New Red, White and Blue Consolidated ... In 1888 two mines were amalgamated [the Union and Red, White and Blue] and taken over by a newly formed company, registered as the New Red, White and Blue Consolidated ... Mr George Lansell, who at the north end of the lease has erected an enormous battery of 105-heads. The Western lines of reef - The first of the western lines is the Nell Gwynne ... At the south end of the line the New Chum Gold Mines, and English Company, has recently sunk a shaft to a depth of 1000 feet, and got payable returns, so that it is hoped that one at least of the three or four English companies working on Diamond Hill will obtain some returns for the enterprise shown.

The Lawrence and Sarnia reefs in this quarter were very rich from the surface down, but the ground has since remained unexplored, saved by English capital. About 200 yards west of the Nell Gwynne line is the Napoleon line ... The Napoleon or Glasgow line has only one mine working on it - the G.G. Consolidated ... the company owns a battery of 30-heads. Christmas line: at present being worked by the Who Can Tell ... But the glories of the Christmas line are almost entirely associated with the rich yields obtained at Specimen Hill, Long Gully. In the early days nearly all the prospectors on the hill did well ... Great Western Company in 1881 worked the ground, but squandered its money ... became defunct in 1887, being incorporated in the Tambour Major Company, which held the ground immediately north of the Great Western ... The company was from the start greatly troubled with water ... in 1886 purchased a crushing battery, with a compound engine, the first erected in Bendigo. Bird's Reef - discovered in early sixties ... the reef proved to be 40 feet in width, and was very profitable to a depth of 100 feet. The ground in the vicinity was quickly taken up, the three most important companies working being the Bird's Reef, the Albion, and the Bendigo and Melbourne. ... Since 1882 the line has been idle, save for one feeble flutter by a company which tried to conquer the water in one of the old shafts by means of a 7-inch pump, with the result that the bottom was never reached. Break O'Day line - Work was begun on the line in 1854. Paris or New Brunswick, and 12 chains further is the Perfect Cure line - This was discovered in 1865 and was worked for two or three years by its discoverers. Carshalton line: most famous mine is the New Prince of Wales - The ground of this company was first worked in 1856, and some rich surface spurs were worked on ... In 1859 the small claims amalgamated and two co-operative parties were formed ... In 1891, the present company was formed ... battery just been erected ... also two winding plants on the ground ... The new battery plant is a most complete one - a high pressure compound condensing engine, with stroke of 42 inches, an air-pump of 14-inches diameter, working vertically between the cylinders, A Cornish multitubular boiler, and a 30-head battery set on solid iron frames. A large dam 190 yards from the battery supplies the water⁴²

1900: Annual Reports.

List of principal companies and mines from which ore has been treated and dividends made during 1900:

Garden Gully United; New Moon; Hustler's Reef No 1; Koch's Pioneer; Lansell's Red White and Blue; Great Northern; South New Moon; Unity; Great Southern Garden Gully; United Hustler's and Redan; Victoria Reef Quartz; Suffolk Tribute United; Fortuna Hustlers; Clarence United; Ulster United; Carlisle; Shenandoah; New Prince of Wales; Great Central Victoria; Lansell's Comet; McDuff Amalgamated; Red White and Blue; Cornish United; Victoria Consols; Thomas United; Stewart's United; Young Chum.

Following list of mines from which a large yield was obtained, but no dividend: Johnson's Reef; Great Extended Hustler's.

Northern District. Machinery - during the year two new winding plants and one new crushing plant have been erected.⁴³

c. 1900: Dredging for gold. Riches of Bendigo Valley. Expansion of the Industry [1912]. Although the late Mr. George Lansell practically inaugurated the dredging industry in Bendigo about 12 years ago, its progress has been slow in comparison with the advancements made in goldfields of lesser importance. The failures at the outset were attributable to the fact that the type of plant was unsuitable for the work, as demonstrated by the results of more modern methods. The site selected for operations at first was directly opposite the White Hills Cemetery. As subsequent work proved, the ground in that particular locality was comparatively poor. Shifting further up the valley and along the western slope of the creek prospects improved. After Mr Lansell abandoned the dredging business Mr Peter Jorgensen gave it a trial, but with unsatisfactory results. The Bendigo Dredging Company took over the lease holdings about three years ago, and, discarding the old plant, installed one more adapted for the work. The new company has also been fortunate in that its operations have been skilfully directed by Joseph Endall, who, prior to coming to Bendigo, had considerable experience in dredging at Castlemaine and in other districts.

The early dredging operations of Messrs Lansell and Jorgensen covered little more than an acre of ground. Two years will have elapsed next November since the new company

42 Australian Mining Standard: Special Edition 1-6-1899, Bendigo District

43 Mines Dept, Annual Report, 1900

commenced active operations, and in that period just on 12 acres have been dredged. The gold won to date amounts in round numbers to 1700ozs., of value £6800. Encouraged by the success attending operations, the company has acquired a large area of what is considered good dredging ground on the eastern side of the creek, and running parallel with the White Hills Road. The ground, which was purchased at a cost of £2000 is known as Caroline's paddock. It was reclaimed by Mr. Caroline, and used for garden purposes. The alluvial deposits along the eastern side of the creek towards the main road are said to contain a coarser sample of gold ... Another plant is to be erected at once to dredge the new area, and other ground in the lease holding on the eastern side of the creek. It is calculated that the ground held by the company on the Bendigo valley would keep the two dredges occupied for about 8 years .⁴⁴

1900-02: In the local mining industry the new century began propitiously, with little to suggest impending decline. The 1900 yield of 205,251 ounces meant a good average year. For the third year in succession the Garden Gully United maintained its ascendancy as premier mine on the field, although some of the newer mines were beginning to yield handsomely also. In 1901 the Golden Pyke had taken 4,815 ounces from 1,204 [tons] of stone. The following year the South New Moon, paying its shareholders 37/- a share in dividends, displaced the Garden Gully United as the field's top mine, retaining that place over the next five years.⁴⁵

1901, April 22: The Treatment of Bendigo Tailings - A New Process - It is estimated that there are millions of tons of tailings in and around Bendigo which from Government assays made of the various heaps would, if properly treated, average about 2 dwt 12 gr per ton, equal to a cash value of 10/ per ton. When the recovery of gold from the concentrates by the cyanide process was first introduced into Victoria the above value was considered too low to pay for the cost of treatment, and as a consequence practically nothing has yet been done to recover the enormous wealth contained in these unsightly heaps which abound all over the field. Some years ago a company was formed in Melbourne to treat a large heap at Golden-square, known as Allingham's and Moore's. This company spent a large amount of money in putting down a plant, but when work was commenced it was found that the sand, having lain so long exposed to atmospheric influences, had become hard and solid. It had to be broken down, and screened by hand before carting into the vats. A large amount of cyanide was absorbed owing to the great quantity of oxide of iron and free sulphur that had formed. The gold being coarse, a very poor extraction was made, and the cost entailed by handling and treating the concentrates by cyanide was altogether too expensive under the conditions which prevailed at that time. Some few months ago the property was again taken in hand by Mr Herbert Credginton, of this city, who, recognising that a cheap system of handling and re-crushing was wanted before the tailings could be treated successfully, set to work to accomplish this end. A Centrifugal crusher and pump were erected by a Melbourne company, known as the Metropolitan Tailings Company. The new machine, which is now at work, appears to have effectively overcome the difficulty of handling and pulverising the sand, which is, after being ejected from the crusher, more readily adapted for treatment by the gold-saving appliances. The sand is transmitted from the heap by means of a water flume, which gravitates to a well. From here it is lifted by a centrifugal pump into the crusher, which consists of a revolving cylinder, inside which is a carrier which revolves at the rate of 160 revolutions per minute. The cylinder contains five rollers, weighing 36lb each, the outside drum or cylinder, which is provided with a liner, revolving at the rate of 30 revolutions per minute in the opposite direction. The sand is discharged from the crusher on to a distributing table, and then passes over copper plates and blankets. A high degree of extraction is not claimed for the present machine, unless precautions are taken to collect the fine gold after it passes over the distributing tables. The intention is to employ Wilfley concentrators for this purpose, and this it is expected with dispense with the necessity of utilising the cyanide plant, which is already on the ground. The present crusher is 24 in. in diameter, and it is putting through four tons of sand per hour. The size of the grating used on the crusher is 200 mesh, and, including the pump, is driven by an eight horse power engine, with a steam pressure of 30lb. It is estimated that the sand can be handled and crushed for 1/6 per ton, which is a remarkably low rate, compared with the other known systems.

It is proposed to re-erect the cyanide plant with another crusher, and put through the slimes, which have also become hard and caked. The slimes, which contain a fair percentage of sand, will be passed over the tales into the vats. The oxides are removed by passing the sand through the crusher, and the sand being refined, will require less

44 Bendigo Advertiser [DMID records] 9/8/1912

45 Cusack, 1973, p.207

cyanide to extract the fine gold. The principal of the new process for refining the tailings is attracting a great deal of attention locally, as should it prove successful, it will be the means of opening up a new field of enterprise in connection with mining. The engineer and manager of the company is Mr J.C. Thomson. The legal manager is Mr J. Prince Cameron, Melbourne, while the directorate consists of Messrs A. Gurr, T.J. Timothy, and H. Credgington, the latter acting in the capacity of managing director. It is computed that there is 240,000 tons of sand on the lease, which give an assay value of 2-1/2 dwt per ton, and 40,000 tons of slimes, assaying from 3dwt upwards.⁴⁶

1903: There has been a great amount of prospecting work done north of Eaglehawk. Several shafts have been sunk, but only one company, the North New Moon, has been successful so far. This company has a payable reef at the 1,150-ft. level ... It is expected there will be some important development during the ensuing year, as there are several companies doing good prospecting work. The most southern part of the district is looking very favourable at present. There are several companies starting in hope of picking up something payable.⁴⁷

1903-4: Yet another rich strike was made on the celebrated Hustler's Line. In 1903 the South New Moon, producing 27,167 ounces of gold from 24,900 tons of stone and paying £83,200 in dividends was not only the leading mine on Bendigo but in the state. That year thirty local mines paid dividends worth collectively, £322,415 and the annual production of 233,915 ounces was the highest since 1876. However, the following year (1904), even this figure was exceeded with a yield of 248,000 ounces and dividends exceeding calls by £200,000. The amount in dividends paid by the Bendigo mines that year (£382,231) exceeded by £95,000 the total amount paid by all other mining companies in the state.⁴⁸

1905: Bendigo District: Prospecting work generally is being carried on with great energy, especially that of deep sinking. The New Chum Railway Co's mine is now 4,175 feet in depth, and it is intended to continue sinking until a depth of 4,300 feet is reached. The Victoria Reef Quartz Mining Co's mine, situated about 1 1/4 miles N. of New Chum Railway mine, on the New Chum line of reef, is now engaged sinking the main shaft. The depth of it is 4,124 feet. The Victoria Proprietary is the only English company working in my district, and the mine is situated at Diamond Hill, 4 miles S. of Bendigo. During the first 4 months of the year the company was engaged erecting machinery to replace that burnt down in Nov 1904 ... There were employed during the past 6 months 75 men. The New Chum Gold-fields Co., the next mine north, has been operating on payable stone, and opening up the mine, and has now purchased a crushing plant, which will be erected with all possible speed. A large number of men will then be employed. The North Bendigo Co, the next one north, is doing some good prospecting work, as also is the Nell Gwynne Co. Then comes the Goldfields Consolidated Co., which has a payable lode, and expects shortly to erect a battery. The Great Southern Extended Co. was formerly held by an English company, and was some time back purchased by the Great Southern Garden Gully Co. The English Co. sank a good main shaft ... to 1,400 feet in depth, and also did some prospecting work at different levels, and erected a good winding plant. The funds were then exhausted, and it was considered advisable to sell the whole property. This was purchased by the above company. At Marong, prospecting work is being carried on with energy in the alluvial mines, which are worked by co-operative parties with varied success. The two large companies have not yet been able to get payable wash. The Deep Lead Company is now erecting puddling machines, and expects to have then ready to work in a short time. The One Tree Hill Company, situated about 3 miles south from Bendigo, and supposed to be on Tyson's line of reef, and which obtained money from the prospecting vote, has been successful in getting gold.⁴⁹

46 Bendigo Advertiser [DMID records] 22/4/1901

47 Mines Dept, Annual Report, 1903

48 Cusack, 1973, pp.207-8

49 Mines Dept, Annual Report, 1905

March 1906: On 3 March 1906 George Lansell died at the age of eighty-two. Lansell's name was more closely associated with Sandhurst and its reefs than any other... In early mining investments he had often suffered heavy losses but he laid the foundations of his great fortune through acquiring sole ownership of an increasing number of mines. These included the 180, the 616, the 222, the 83, the Comet, the Sandhurst, the North Red, White and Blue, the South Red, White and blue and the Sheepshead Mines. Some of Lansell's private mines, such as the Pandora and the Cinderella were in their day, amongst the most productive on the field.⁵⁰

1906: In the same year as George Lansell died, Dr Walter Summons released his findings on the adequacy of ventilation in the Bendigo mines... It presented a stark picture of men sickening and dying in the prime of life through being forced to labour in ill-ventilated shafts where no real attempt was being made to disperse the treacherous fog of quartz-dust. Horwood and Burrowes' Mine the temperature was 92 degrees at the 2,030-ft level. At the bottom of the 4,200-ft shaft of the Victoria Quartz the water welling about the men's ankles had a temperature of 114 degrees. However, of the evils resulting from bad ventilation that of heat and humidity was far the lesser. The killer was the silica-dust from drilling and blasting. A dust-counting machine placed three feet away from a percussion rock-drill operating in Lansell's 180 Mine without the water jet as required by regulation, gave a dust count of 700,000 particles per cubic centimetre. In similar conditions in the Great Northern Mine 800,000 per cubic centimetre were registered. However, when drilling was carried out with the prescribed water jet, this was reduced by 50 per cent. But more often than not the miners did not bother using the jet.⁵¹

1906: Bendigo District: At the Victoria (1903) Proprietary Mine at Diamond Hill, owned by an English Co., a large amount of permanent work has been done of a prospecting character. The Bendigo Goldfields Proprietary Company is carrying on operations at Diamond Hill in 3 different shafts. The first is the Hansell and Monday shaft, on the well-known Carshalton line of reef. It was an old shaft, and has been cut down to a depth of 330 feet ... There is a good steam winch with boiler, and also poppet heads erected ... The second is known as the Diamond Hill shaft, and is situated S. of the G.G. Consolidated Co's mine, on the Napoleon line of reef. This is a new shaft ... and has reached a depth of 185 feet. This shaft has been equipped with a winch and boiler and poppet heads ... The third shaft is on the Nell Gwynne or Goldfields line of reefs, adjoining the Goldfields South Company. The company is now sinking it 12 feet by 4 feet clear of timber, with 4 compartments. The Great Extended Hustlers Company sunk a centre country winze below the 3,060 feet level. The New Chum Gold-fields Co's mine is situated next N. of the Victoria (1903) Proprietary Company ... The company also erected a 20-head battery of heavy stampers, also an aerial tramway to convey the quartz from the shaft to the mill, a distance of 150 yd's. The Victoria Reef Quartz Gold Mining Co. crushed 1,005 loads for 224ozs. The Eureka Extended Co. is now engaged sinking a new shaft from the surface on the Nell Gwynne line of reef. The New Chum Railway Co. is now cross-cutting at the 4,285 feet level. At the Goldfields Consolidated Co's mine a large amount of prospecting work has been done. The Goldfields South Co's mine is the next S. of that of the Victoria (1903) Proprietary Co. A new shaft has been sunk to about 400 feet in depth. An up-to-date winding plant has been erected. The Goldfields No 1 Co. has sunk a new shaft ... to a depth of 250 ft, and also erected a good winch, boiler, and poppet heads.⁵²

c. 1907: New Prince of Wales. Some early day records. Record available show that the ground now included in the New Prince of Wales lease was first worked in 1856. At that period rich surface spurs were operated upon, and a large quantity of gold was won by the pioneer prospectors. It is recorded that crushings from spurs yielded from 1 to 10ozs. to the ton. In 1859 the small claims were amalgamated and two co-operative parties were formed. Hopkins and Co., a party of four, taking the southern ground, and the Pegleg Company, the northern. Hopkins and Co. working to a depth of about 300ft. were very successful, and the Pegleg Company operated with good results down to 100ft. or more. The two co-operative parties between them paid in dividends over £80,000.

The next claim N. of the Pegleg, known as the N. Pegleg also met with the same results. At a later period an amalgamation of Hopkins and Co. and the Pegleg claims was effected and they became the Prince of Wales United. It is also recorded that this company

50 Cusack, 1973, pp. 201-2

51 Cusack, 1973, p.204

52 Mines Dept, Annual Report, 1906

worked with success from 260 to 320ft. New Company. It was in the year 1891 that the New Prince of Wales Company was formed ... they erected a suitable winding plant ... The 20-head battery has proved a very necessary adjunct to the machinery equipment, as it has enabled the company to continue the treatment at times of low grade ore, which otherwise would have not have proved remunerative. In the years 1906 and 1907 the stone milled for the full terms averaged less than 4dwt. to the ton, yet with the small yield the company more than held its own, which is an achievement in the mining and treatment of low grade ore, creditable alike to the company and the district.⁵³

- 1907:** Bendigo District. At the southern end of the field on the Nell Gwynne line of reef the mines are now looking very well ... The New Chum Goldfields Co (11,937 tons/5,684ozs, £8,000 dividends); Goldfields North Co. (1,039 tons, 4370zs); Langdon Co (1,459 tons, 772ozs); Nell Gwynne Co. (1,297 loads, 6680zs). The Great Extended Hustlers Co has done a large amount of development work, and is now engaged erecting on of the most up-to-date mining plants in this State ... 3,524 tons, 3,405ozs obtained from the 3,260 feet level. The Garden Gully United Co. has done a very large amount of prospecting work. The Carlisle crushed 13,038 tons for 4,405ozs. The Victoria Consols carried out a considerable amount of progressive work. The New Chum Railway has done a fair amount of prospecting work. The Goldfields Consolidated Co., in addition to developmental work has erected a new winding plant. The depth of the shaft is 600 feet. 8,410 tons for 3,265oz. The proceeds, in addition to paying ordinary working expenses, from the above have been devoted to the erection of a winding plant and battery at a cost amounting to about £7,000. The New Golden Fleece Co. has erected an up-to-date winding plant at a cost of £1,900, and has a main shaft to 552ft. Victoria Reef Quartz Co. is now engaged working on the reef between the 4,154 and 4,254 feet levels.⁵⁴
- 1908:** The inadequacy of existing equipment was soon to be brought home forcibly. In the deeper mines pumping had already become a crippling factor. The New Chum Drainage Scheme, commenced some years before, ceased operations in 1908 because of rising costs and, as a result, many of the deeper mines were forced to close or content themselves with working at upper levels. Many mines were connected and a vast extent of underground workings were so left dependent upon the pumping of just two mines - the Victoria Quartz and Lansell's 180. It was a hopeless situation; between them the two were being required to bail some 70,000,000 gallons of water per year.⁵⁵
- 1908:** Bendigo District. Mining has been dull for some time, several mines having shut down. The deep ground has not proved to be very remunerative. The New Chum Goldfields Co - 12,679 tons, 4,779 oz, £8,000 dividends. The Nell Gwynne Co - 2,133/1,050oz/£700. Langdon Co - 5,296/2,963ozs/£2,400. Victoria Proprietary - 19,363/7,023oz. The Great Extended Hustlers Reef Quartz Mining Co - a new and up-to-date wining plant, also anew air compressor, supposed to drive 20 rock drills, were erected. Garden Gully United Co - 13,804/2,628ozs. The Hercules and Energetic Co - 15,813 /5,698ozs/£12,000. Victoria Consols Co - 11,092/4,1320zs/£7,500. The United Ulster Co - 9,286/2,555ozs/£1,600. The Sea Amalgamated Co - 12,732/5,841ozs/£12,000. The Carlisle North Garden and Passby United Co - 16,414/5,508ozs/£7,200⁵⁶
- 1908-9:** Government grants of £10,000 each were made to the Victoria Reef Quartz Company and the New Chum Drainage Association for the development of deep ground, and in October 1909 a conference was held between representatives of all sections of the local industry to consider how best the industry could be assisted and in particular, to devise ways of opening up side lines of reef as Dunn [Government Geologist] had urged [in 1908]. Such development, it was suggested, might help provide work for a large part of the state's 12,000 unemployed miners.⁵⁷
- 1909:** Bendigo District. Mining has been rather dull dor some considerable time. Several mines on the New Chum line of reef have been shut down, and the water allowed to rise. The Hercules and Energetic Co. After sinking the main shaft to 3000ft and not finding anything payable at that depth, returned to the shallow ground with splendid results - 7,719 tons for 3,783ozs. The Goldfields Consolidated Co - 12,377/3,238ozs/£1,000.

53 Bendigo Advertiser [DMID records] undated c.1907

54 Mines Dept, Annual Report, 1907

55 Cusack, 1973, p.209

56 Mines Dept, Annual Report, 1908

57 Cusack, 1973, p.208-9

The Victoria Proprietary - 25,724 loads for 7,316oz. Dividends £7,166. Thistle Co - 639 loads/98oz. The New Golden Fleece Co has done a large amount of prospecting work. The Garden Gully United - 18,675/5,386ozs. The Great Extended Hustlers Co - 12,254/5603ozs. The Carlisle Co - 18,276/4,548ozs/£1,800. The New Chum Goldfields - 12,224/3,843ozs/£4,800. The North Bendigo Co - 1,706/1,378ozs/£1,200. Goldfields Nth Co. - 295/193ozs. Langdon Gold Mining Co - 3,220/1,157ozs/£800. The Nell Gwynne Co - 5,684/1,322ozs. Lansell Comet - 7,009/1,820oz. Lansell's North and South Red, White & Blue Co's 1,959/5,131oz. Lansell's 180 No. 2 shaft - 1,470/6,050oz. Lansell's 222 Mine - 272/250oz. Lansell's Concord Mine - 3,131/1,240oz. Lansell's 83 Mine - 161 loads/45oz.⁵⁸

1910, Feb 19: The Marong Alluvial - For many years the numerous tributing leads in the Marong district were operated successfully, and the industry supported a large portion of the population. The favourable conditions that obtained for working the leads was an important factor in the success of the industry. The alluvial deposits for the most part were free from water, and being easy of access, very little capital was required to work the ground. Operations were carried on principally by co-operative parties, and the claims were grouped so closely together that the dry ground - that is, the payable portion of the ground above the water level - has been practically depleted of its alluvial deposits... The NW lead was credited with being the most productive of the various leas worked in the locality. In this shallow ground sinking varied from 100ft to 160ft, and the wash in places was 400ft wide. The best results were, however, obtained within a width of 200ft, and it is said that the average yield was about half an ounce per ton, which, under the favourable conditions for working, gave a handsome profit. Where the lead dipped below the water level machinery had to be provided to cope with the water, and the Marong Alluvial Company was formed in 1902. A large lease on the lower extension of the NW lead was acquired. The property is equipped with a suitable winding plant, and at present all the water is raised by tanks... There is a 10-head battery, with other surface equipment, and the manager states that a yield of 4dwt per ton will cover working costs.⁵⁹

1910, March 17: Mining at Kangaroo Flat. The Bird's Reef: the Bird's Reef, situated immediately S of the railway line at Kangaroo Flat, occupied a prominent position as a gold-producer in the sixties. Where the reef was opened by the early prospectors extensive operations have been conducted at varying depths along its course for 1000 yards... The huge formation, which had a northerly pitch, outcropped at the surface in the group of claims to the S, and the stone was worked on the open cut system... The official returns of gold produced from the Bird's Reef exceed £260,000. The memories of a glorious past have imparted interest in the operations of the Bird's Reef Co, whose lease holding, covering an area of 1100 yards on the line, embraces the claims that were so productive in the early days. In connection with the new enterprise the gold yields from the principal claims, compiled from the *Advertiser*, will be read with interest:

<i>Claim</i>	<i>oz.</i>	<i>dwt.</i>
Bird's Reef	12,934	15
Bird's Reef Tribute	1,027	12
Mystery	94	0
Bendigo and Melbourne	11,551	10
Albion United	7,523	14
North Albion	3,165	7
Steward's Tribute	4,048	13
Sawers and Walker	3,121	18
White's Freehold No. 1	3,034	13
White's Freehold No. 2	2,450	13
White's United Tribute	667	2
Total	49,619	17

From early records in our possession it is stated that comparatively little work was done below a depth of 200 ft in the southern claims. The N end of the section of the line opened was operated with excellent results to a depth of 420ft, both by the Bendigo and Melbourne Co. and Albion Co. The latter shaft was sunk to a depth of 580 ft., but work was suspended, and not much prospecting was done below 420 ft. During the three years prior to 1872 the Albion Company distributed £7000 in dividends... The Mystery claim paid a large amount in dividends... It is related that the Mystery claim was originally 'Bird's' rich claim. The Owner, Bird, after whom the reef was named, realised a fortune, and left the colony. Amongst those who were identified with the

58 Mines Dept, Annual Report, 1909

59 Bendigo Advertiser [DMID records] 19/2/1910

opening up of the line at the early period was Mr Roger Lisle, who, after managing several claims, went to Queensland, where he assumed the management of the famous Mount Morgan mine. Mr Lisle, reporting on the early work some years later, stated that he commenced working the Bird's Reef in 1862. Previous to that some very rich stone had been mined from the Mystery claim, consequently towards the end of that year, and in 1863, the whole line was in full operation from Le Capelain's on the S to Sawers and Walker's on the N, and later on Stewart's and White's No. 1 and 2, still further N, were being worked, and all on good stone, which paid handsomely, each claim giving fortnightly dividends. At a later date the Bendigo and Melbourne Co. sank a shaft to the W of the other shafts, and got some good gold. They came on a rich patch at about 300ft, known as the 'Jeweller's Shop' or the 'Bank', after which the reef became poorer. The property is equipped with a 10-inch pumping service, which is capable of raising the water that is likely to be tapped as the crosscuts proceed W.⁶⁰

1910, April 26: The White Hills - Cemented alluvial deposits. The somewhat unpretentious chain of hills extending almost from the city to the hamlet of White Hills has been described by geologists as an ancient river bed. ... The early day diggers were not slow to recognise the hidden wealth contained in the different hills, and with the primitive appliances then in use directed their energies to working the richest of the deposits. Some idea of the magnitude of the deposits in these hills is afforded by the cemented alluvium extending in places to a height of 50ft. above the matrix. The thickness of the deposits gradually diminishes on the outer fringes of the hills, where owing to the removal of the surface gravels the Silurian rocks are exposed. In the early stages of operations attention was concentrated upon the removal of the alluvial substance immediately overlying the matrix. The wash was highly auriferous in the bed of the ancient watercourse, which according to data available was in places 300ft. in width. The methods adopted in working the wash was by sinking shafts, and where opportunity presented itself access to the main gutter or bed was gained by tunnelling from the hillside. The extent of the operations is evidenced by the innumerable shafts sunk along the course of the range of hills and the old tunnels exposed to view. At intervals there has been extensive subsidence of the overburden, and in many places the crests of the hills have settled down. In later years the surface deposits provided profitable employment for sluicers, and at the present time there are some old identities who still eke out a living in the locality. One of the few surviving pioneers of the locality is Mr. Sanneman, who, notwithstanding his advanced years, is still engaged working the deposits. When a visit was paid to the locality yesterday the old man was seen collecting material for sluicing at what is known as the fourth White Hill. In conversation with the old aged prospector he grew reminiscent, and recounted his experience, extending over a period of 55 years. The hills nearer the city, he said because of the friable nature of the deposits, had almost entirely been removed. Of the seven hills comprised in the section of the fourth hill contained most extensive deposits. There appeared to be a greater concentration of the cemented at that particular section, and as it was harder the material was not so easy of treatment. The ordinary process of treatment was by sluicing and puddling but in the early period crushing batteries were in operation. About thirty years ago (1880) a co-operative syndicate of Chinamen, working from an open cut on the western slope of the fourth hill carried on sluicing operations. They worked in relays, and sluiced continuously night and day. At that period, Mr. Sannerman states water for sluicing cost £4 per week. The syndicate, it was reported at the time, obtained an average of 60oz. gold per month, and worked there close on two years. The great success of the early-day operations at the hills suggest that the unworked deposits may have some commercial value ... Mr. Burrige has outlined a scheme for the treatment of the cemented deposits on an extensive scale. His proposal provides for the installation of a complete treatment plant, capable of handling 160 tons per day. The process of treatment is to mine the material on the open cut system, and pass it through a rock breaker. Afterwards the crushed deposits are to be put through roller mills, and the pulp will be run over copper-plated tables and other concentrating appliances.

It is proposed to have a producer gas plant to provide the necessary power, while an adequate water supply can be obtained from the Government water race close at hand. The cost of the plant, Mr. Burrige estimates, would be about £2000, and he proposes to capitalise the venture by forming a company.⁶¹

1910: On the night of 14 June 1910 water burst through into the Victoria Quartz. Frantic efforts to control it failed and a week later much of the world's deepest gold mine was flooded and unworkable. Subsequent efforts to reduce the water were scarcely more

⁶⁰ Bendigo Advertiser [DMID records] 17/3/1910

⁶¹ Bendigo Advertiser [DMID records] 26/4/1910

successful and when an appeal to the Government for an electric pump was refused, any possibility of continuing to work at depth was out of the question. As a result, the mine was handed over to tributers to work at upper levels.⁶²

1910, Aug 2: Air-compressing plants. Economy of producer gas power. Air compressing plants operated by producer gas power are somewhat of an innovation on the Bendigo goldfields. The power has been applied extensively in some other goldfields in the Commonwealth; and in factories, where almost similar work is performed, producer gas installations, on account of high working efficiency and economy in fuel consumption, have been largely availed of. The New Chum Goldfields Co. at Diamond Hill was the first to introduce the new power for battery work at Bendigo, and the new air compressor recently installed is also being operated by producer gas. The Crossley producer gas engine, which supplies the power for the compressor, is working well, and the plant has been long enough in operation to afford some idea of the economy in fuel compared with steam-driven compressors. The producer gas engine and equipment cost between £900 and £1000, while with the compressor, which was manufactured locally, the total cost was about £1400. The capacity of the plant is equal to supplying air for operating seven drills. On an average five machines are employed, and the tests based on full consumption show that air is being supplied to each machine at the rate of about 2/- per shift. ⁶³

1910, Aug 3: Air compressing plant - cheap power. It would be interesting to make a comparison of the relative costs of steam power using wood fuel, and producer gas power, working under similar conditions. It is stated that at one mine at which a new plant was recently installed fuel costs for supplying power for two drills working two shifts averages about £11 per week. For battery work producer gas power is also economical and effective. When the battery at the New Chum Goldfields was working two shifts regularly the cost of power was only 3d per ton of ore milled. In Saturday's "Advertiser" it was shown that the fuel costs at the New Moon battery, where steam power is used, covering a period of 13 years, was a fraction over 6 1/2d per ton. In a great many instances wood fuel costs for battery power are considerably higher than at the New Moon, which is, perhaps the best example that can be cited in regard to economy of steam power.⁶⁴

1910, Dec. 7: Virginia crushing works - economy in fuel. A few years ago the Virginia Co. remodelled its milling plant in order to economise in fuel consumption, and to ensure a higher working efficiency. The results achieved have been very satisfactory, and the management states that the saving in fuel costs compared with the old system is equal to about 62 1/2%. The motive power is steam supplied from a Stirling boiler of the latest type, working up to a pressure of 160lbs. per square inch, with super-heaters attached. The battery engine has 12in. high pressure and 22in low-pressure cylinders, with a 36in. stroke. The engine provides power for operating 50 heads of stamps working 75 drops per minute, shaking tables, water and tailing pumps, raising tailings 50ft. , and milling 760 tons of ore per week. The air compressor plant is also installed at the battery, and is operated by steam power drawn from the Stirling boiler ... The air compressor is supplying air on a daily average of 18 rock drills and three winches, blacksmith's forge, emery wheel, and drilling machines in workshop ... The whole plant, including mill and air compressing services, is run on a fuel consumption which has not exceeded 70 tons of firewood per week for the last 3 1/2 years. The plant was designed and erected by Andrew Harkness.⁶⁵

1910: Bendigo District. The New Red, White and Blue line of reef has come to the front very strongly ...Central Red, White and Blue Mining Co - 2,100/5,655oz. Victoria Proprietary - 15,714/2,922oz. The Bendigo Dredging Co. (White Hills) first clean up of an area of 3/4 acre gave a return of 88ozs; average depth, 18ft from the surface. The second clean-up from an area of 3/4 acres yielded 156oz. Green and Company, dredging at German Gully, Bendigo, won from 1 1/2 acres, of about 10ft ground, 121oz. The Hercules and Energetic Co. had to abandon the deep country and return to shallow workings.⁶⁶

62 Cusack, 1973, p.209

63 Bendigo Advertiser [DMID records] 2/8/1910

64 Bendigo Advertiser [DMID records] 3/8/1910

65 Bendigo Advertiser [DMID records] 7/12/1910

66 Mines Dept, Annual Report, 1910

- 1910-12:** An air of gloom pervaded the field and with several mines out of action and unlikely to return to active production, the annual yield of 1910 represented the lowest since 1894. The only hint of promise in the years immediately following, was the discovery of a rich reef in the Central Red, White and Blue at a mere 311 feet. It made the mine the chief producer on the field between 1910-12 and gave needed impetus to the plea for a systematic development of the sidelines, and of shallow and often neglected ground. Unfortunately, the realisation came too late.⁶⁷
- 1911:** Old Stacks, Bendigo - Among the oldest of the stacks built at Bendigo in connection with quartz crushing plants, are the two figured in the Annual Report. No 1 was situated in Sailor's Gully, but was demolished about 3 years ago. This, if not the first, must have been one of the first built, for it had a stone inserted on which was chiselled the date 1854. It was built altogether of rough masonry. The other, No 2., is still standing at the Sheepshead line, and was apparently of later date, the upper portion being brick. They are interesting landmarks of an era that is rapidly passing away.⁶⁸
- 1911, Feb 18:** Scarcity of sawn mining timber - a serious situation. The shortage of supplies of sawn red gum mining timber is of much concern to mining companies engaged in sinking shafts ... several companies are seriously hampered in their operations in consequence of their being unable to obtain delivery of shaft timber. In many instances the managements state that they took precaution to order early, but the demand has increased to such an extent that the timber coming to hand is not nearly sufficient to meet requirements. In view of the present state of affairs steps are being taken by the managements of some of the companies to ascertain whether supplies of jarrah timber, which is grown extensively in Western Australia, can be secured. Jarrah is known to be well adapted for shaft timber. Mr H Iser, the principal of the firm Humme and Iser, the well-known timber merchants ... cause of the shortage of red gum was the abnormal demand for timber and the failure of the mills to cope with the orders ... The rapid expansion of operations on the side or parallel lines of reef necessitated large supplies of timber ... The mills were also confronted with an increased demand for timber from other sources outside mining. The Government was using large quantities in connection with irrigation works. In Bendigo it had been the custom for many years to use red gum timber for shafts. At an early period, however, a large proportion of timber supplied for the shafts was drawn from Knowsley and other forests in the Heathcote district. This timber consisted almost entirely of ironbark and grey box, and experience has shown that it was well adapted for the purpose. Owing to the forests in those districts having been denuded of large timber, supplies have for years been drawn from the mills at Echucha. In view of the present scarcity it will probably be necessary to seek supplies from other districts within the State. In the mines of Ballarat and Daylesford and surrounding districts messmate timber is used almost exclusively, and the experience is that it is splendidly adapted for shafts and other mine work. In Bendigo the timber almost universally used for skids, ladders, supports etc., is messmate, and no exception has been taken to its durability. If it is suitable for the purposes mentioned, why could it not be used as a substitute for red gum?⁶⁹
- 1911, April 28:** Superfluous shafts at Bendigo. Mr. E J Dunn has submitted the following report to the Minister of Mines - Success in future depend on the sites selected for the shafts, and as they will have to be sunk for thousands of feet, their number should be restricted to the minimum which will serve effectually to work the ground.

67 Cusack, 1973, p.209

68 Mines Dept, Annual Report, 1911

69 Bendigo Advertiser [DMID records] 18/2/1911

Owing to the gradual development of mining from small areas and shallow depths to larger areas and deeper levels, a multiplicity of shafts were sunk that are not needed now. While the depths did not extend over one or two hundred feet, it was of little consequence, but when depths up to and over 5000ft. are sunk, every unnecessary shaft entails useless expenditure that the industry cannot afford. As mining activity is being renewed, the time is suitable to arrange a substantial reduction of shafts, and to decide which are to be continued and which discarded. Taking the southern end of the New Chum line for a length of 2 1/2 miles, the following 8 shafts are fairly well placed, and will suffice to work the whole length of the reefs, always supposing they are in good order: Bell Vue, New Chum Railway, Shamrock, New Chum Consolidated, Lazarus, Victoria Quartz, Hercules and Energetic, and Great Extended Hustler's. If these shafts are selected, then the following 13 shafts might be discarded: Eureka, Shenandoah, Young Chum, Craven's, Garibaldi, New Chum United, Lansell's 222, Old Chum, N. Old Chum, Lansell's 180, Great Central Victoria, Ironbark, N. Energetic. The total depths of these shafts amount to 34,730 feet. To carry out such a scheme, amalgamation of leases or interests and arrangements of boundaries would be necessary, and if all are not suitable, a modification could be made. In any case, the reduction of shafts over the whole field should receive immediate attention...⁷⁰

1911:

Bendigo District: Hustler's Line. United Hustlers and Redan Co. In the Redan shaft, payable gold is being obtained in the winze ... K.K. shaft - Prospecting the shallow levels is receiving attention; good milling stone has been met. Comet Co. - Fair milling stone has been operated on by the company, and in some cases by the tributers. Hustler's Reef - The wages men employed earlier in the year at the main shaft have been removed to the north shaft. Great Extended Hustlers - Shaft sinking commenced: proposed to sink a further 200-ft. Hustler's Royal Reserve - Park shaft, prospecting at various levels ... Reserve shaft, the wages men are prospecting, and the tributers are operating on the spurs. Fortuna Hustlers: a limited number of men underground. Garden Gully line. Cornish Co: stoping and development work is proceeding. Carlisle Co. prospecting & stoping. Unity Co. works at various levels. Victory and Pandora: prospecting at shallow levels. Garden Gully United - Recent operations received a check owing to the buildings and machinery being destroyed by fire at the main shaft. The newly erected plant commenced bailing in December. Work at No 3 shaft was kept going; wages men and tributers were employed; the erection of machinery on the east shaft on Paddy's Gully line is nearly complete; the shaft is down 125 ft. Sea Co. - is crushing low-grade ore. South Garden United Co. - in the cross cut east on the Paddy's Gully line work commenced in the old stopes. Londonderry Co has done a considerable amount of development work. United Ulster Co - is obtaining payable yields. Golden Southern has been crushing stone low in grade. Garden Gully Consols - The shaft is down 528 ft. New Chum Line. Several companies on this line of reef, whose deep workings proved unremunerative, ceased operations. This stoppage of bailing would impose an extra burden on other companies, already taxed to their limit. When the excess water approached their workings, they had to abandon the deeper levels. It will be some time before the deep ground is worked; the present shafts are unsuitable, and to sink a main central shaft as a pumping station would be too costly for any single company to undertake. In the New Chum Consolidated Co, the water was 1770 ft below the surface at the end of December. No bailing is now done on this line; work confined to shallow levels. Hercules and Energetic - workings confined to the shallow levels ... An up-to-date winding plant being erected. Ironbark - Underground operations were confined to the Sheepshead line. Victoria Consols Co. - operating on stone from the New Chum line. Central New Chum - prospecting shallow ground at 500 ft. New Chum Consolidated - Work is carried out in the shallow ground at 660 ft. New Shenandoah Co - good returns from the shallow levels at 500 ft. Side lines. These lines are noted gold producers, and now receive more attention than the old main lines. Sheepshead or Blue line: the rich returns by the Central Red, White & Blue Company caused nearly all companies on the New Chum line holding ground to the east, to cross-cut to the channel or sink shafts from the surface. Activity on this line from the Hercules and Energetic on the north, to Casley's Red White and Blue on the south. Nell Gwynne Line. The largest employer of labour is the Victoria Proprietary Co. Paddy's Gully line - The Sea, Garden Gully United, and the Unity Companies are prospecting this line of reef. Deborah line - The Deborah Reef Co is sinking, and the Monument Hill Co is also close to this line. Christmas line: very little done. The Christmas Reef Co is prospecting. Bird's line: the Bird's Reef Co is the only one employing labour. A 10-head battery to be driven by gas suction plant is nearly complete.⁷¹

70 Bendigo Advertiser [DMID records] 28/4/1911

71 Mines Dept, Annual Report, 1911

1912, June 10: Bendigo's rich goldfield. The present prosperous condition of the gold mining industry in this district is a thorough vindication of the "shallow ground" policy, so consistently advocated by this journal for years past. In most every, if not every, gold mining area in the world the experience is that as considerable depths are attained, the gold is scarcer ... Bendigo investors and speculators know from bitter experience ... [this fact]. No doubt some reefs in the deep ground will pay to work with adequate appliances and good and economical management, but science and invention apparently have not progressed yet far enough to enable the mines generally in this district, to explore the unknown depths with reasonable costs, and under conditions which will not injuriously affect the health of the miners. As there is, however, an almost unlimited area of shallow ground, only partly prospected or wholly neglected on this field, the work of exploring the deep ground may be very well left to a future generation, which with improved appliances will be better able to undertake the work. The sound and not difficult policy of systematically exploring the shallow ground is thus before us today. It is interesting to note the levels from which the most prominent mines at present are procuring their gold. The United Hustler's and Redan Co. is operating at 365 feet, the Central Red, White and Blue at 318 feet, the Golden Pyke at 447 feet, the New Price of Wales at 690 feet, the Johnson's, on the Derby line, at 1150 feet, the Ironbark at 480 feet, the Catherine Reef United at 2300 feet, and the South New Moon at from 580 feet to 1140 feet. It will be noticed that most of these prosperous mines are obtaining their good results from comparatively shallow levels, and the best stone, namely, that from the United Hustler's and Redan mine, is coming from the shallowest zone of all. Furthermore, the companies named are winning their gold on six distinct lines of reef, on some of which comparatively little work has been done.⁷²

1912, May 17: Bendigo Goldfield - Mines on the southern extension. The Nell Gwynne line has received most attention. The most productive of the mines in the group have been the Victoria Proprietary, New Chum Goldfields, Goldfields Consolidated, Nell Gwynne and North Bendigo. The only company at present pioneering the deep ground is the Goldfields Consolidated. This company is sinking its shaft, and at the present depth - about 1285 feet - is in the vicinity of the centre country. The New Chum line was a gold producer in the New Chum Railway mine. For some distance S. of the railway line a large amount of work was done, but with the exception of the New Chum Railway operations in the other mines were not attended with success and the companies are now defunct. The Sheepshead line has been highly productive for a distance of close on a mile S. of the railway. Extensive deposits of quartz outcropped at the surface, and were operated, and were operated with splendid results at an early period. From the surface down to 1000 feet records of the gold production in some of the mines have maintained the best traditions of the line. A reef at present being operated in the New Red, White and Blue at 700 feet, and Lansell's N. Red, White and Blue, at deeper levels. On the southern extension of the line, Casley's Red White and Blue are doing valuable pioneering work ... The present company has a compact winding, pumping and air-compressing service on the property, and the sinking of the shaft to 405 ft. will be finished in a few days. Extended Red White and Blue are erecting a winding plant, and when completed the shaft will be deepened below 900 ft. The Deborah line in the section shown was operated at shallow depths ... mentions at work - N. Deborah, and S. Deborah. On the Garden Gully line in the section shown payable reefs were worked in the Great Southern in the first 1000ft ... The Garden Gully Consols is doing valuable work on the S. end of the line.⁷³

⁷² Bendigo Advertiser [DMID records] 10/6/1912

⁷³ Bendigo Advertiser [DMID records] 17/5/1912

1912, Aug 1: Bendigo Valley Discoveries. Footprints of pioneers. Excavators are continually busy in Palestine, Egypt, and adjacent countries, digging for relics of an ancient past, often solely to confirm the histories of nations as described in the Bible. In our own district an excavator is at work - not with any historical or scientific object in view, certainly, but in following what may be regarded as a sordid commercialism - and is revealing the history of its busy past in the short life of this community. Sixty years ago Bendigo Valley was the scene of great activity, when immense quantities of gold were being won from the alluvial. Evidences of the stress and strife of those days have from time to time been revealed by the nozzle of the Bendigo dredge operating below the Chinese camp. Pointing its nose into the banks of alluvial, the stream of water is steadily and relentlessly wearing down large masses of earth, the removal of which was the daily struggle of many a sterling pioneer. Gold that has been missed by keen eyes, and fine gold that had been considered as too fine to pay to extract, is alike gathered in the far-reaching sweep of the revolving nozzle. Many strange things are also garnered - coins of the realm, medals (gained in peace and war), pistols, knives, and forks, amongst many other kitchen utensils, all bespeaking the intense life of a large and mixed population. They were affluent days, those. One party of diggers must have been on an unusually good patch. They lost the wedge out of a pick. Instead of losing time in repairing to the nearest smithy, they tightened the head with the free use of pennies. The dredge disclosed this pick with this wedge, and thus told the story just mentioned and authenticated it at the same time. During the past week or two its activities have brought to light quite a little drama, and an incident somewhat sensational to the parties concerned. On the slaty 'bottom', and 12 feet or 15 feet below the grass, the skeleton of a horse, harnessed, and lying between the shafts of the perishing remains of a dray, was found hidden in alluvial silt. Whatever may be the result of future dredging in this particular part, the work is being done so thoroughly that the Bendigo Antiquarian Society of 2000 A.D. may even be given notice at this stage that it will be profitless to sift the particular area covered by the dredge under notice.⁷⁴

1912, Nov 22: Kaolin deposits at Axedale - Proposed pottery works. There is a probability that the extensive deposits of kaolin adjacent to the main Heathcote Road, and about a half mile east of Ingham's Hill, at Axedale, will be put to a profitable use. Some time ago brickworks were established on a small scale at the site where the deposits occur, but with the obsolete plant installed they were not a success. The failure of the enterprise was, however, not attributed to any defects in the nature of the material used. On the contrary, experts have described the kaolin deposits there as being of great commercial value, and eminently adapted for the manufacture of bricks and the finest pottery ware. It is stated that a new company, with English capital amounting to £20,000 contemplated erecting pottery works at the site, and that the necessary plant is to be brought from England ... The deposits are situated in the heart of a large forest with railway facilities within a mile of the locality.⁷⁵

1912, July 13: New Moon Mine. The company was formed in 1867 as a co-operative company in 16 shares, with a holding of 114 yards on the line of reef. Early in 1868, after the expenditure of £160, payable spurs were uncovered at 173 ft., and resulted in dividends to the amount of £2728 till 1870 when the company was registered in 24,000 shares. The registered company continued on the dividend list until July 1871, 5/6 per share, or £6600, being distributed. Machinery was then erected, but the gold yield fell off, and calls became the order for the next three years. In 1874 5300 shares would not bring a sixpenny call. In the following year a dividend of 6d per share resulted, principally from tribute percentages. In 1878 old workings between 180ft. and 240 ft. was re-opened, and dividends to the extent of £2400 declared. During the next 14 years very indifferent success followed the company's operations, calls being necessary at rather frequent intervals, although a fair amount of gold was being produced throughout that time. However, in 1892, a payable run was uncovered at 685 feet, and since then the company has been a fairly regular gold producer ... During the past 20 years, 1892 to 1912, crushed 466,818 tons, yielding 186,817ozs. gold, value £741,181; averaging per ton, 8dwt. Dividends £353,400 (£14/4/6 per share); expended in machinery £34,731.⁷⁶

1912, July 17: Catherine Reef United - The new Battery. The old mill, which has done service since the early sixties, has been replaced by a 30-head battery of modern design. The management, alive with the importance of economising in working and treatment, has made

⁷⁴ Bendigo Advertiser [DMID records] 1/8/1912

⁷⁵ Bendigo Advertiser [DMID records] 22/11/1912

⁷⁶ Bendigo Advertiser [DMID records] 13/7/1912

substantial improvements in the surface equipment. Since the discovery of the massive reef in 1905 the company has erected a powerful winding plant and a set of poppet legs. Last year a fine air compressor service was erected at a cost of £2500, and now a splendid mill, equipped with the latest appliances, has been installed. The cost of the battery will be about £7500 since the discovery in early March 1905 ... the company milled 168,342 tons for a gold yield of 57,533ozs., averaging a fraction over 6dwt. per ton. Erected on the northern slope of Snob's Hill the mill of 30 heads occupies a commanding position. The stamps are 1250lb. weight, and the mill has a capacity of 900 tons per week. There is 72 cubic feet of copper plate surface provided for each box and Phoenix-Weir concentrating tables are installed for each set of stamps.

An innovation in Bendigo is the introduction of woven steel screenings, which are to serve the purpose of the punched gratings manufactured locally. The woven screenings are 350 holes to the square inch, and they have been used extensively in Western Australia and South Africa. The ore is first passed through rock breakers, and after going through the grading process, is transmitted by conveyer belts to the ore bins, and is automatically fed into the boxes. The tailings are raised by a triple plunger pump to a height of 56 feet, and pass over blanket tables before being finally deposited on the sand dump. The power is supplied by a Corliss compound tandem engine, with surface condenser. The engine and battery was purchased from the New Yorkshire Company, Tarnagulla. It is practically a new plant having done very little work before its removal. The company will cater for public crushing. A specially constructed ore bin is being provided, and the material is to be raised by elevator belt for transmission to the mill. New Golden Fleece: This company's lease embraces a number of properties, which at an early period included some good gold-producers. The old Golden Fleece, on Stafford reef, had a splendid dividend record, and the Altona and Comet were also well known mines. The lease holding covers three distinct reef channels, known locally as the Stafford, Frying Pan, and Comet lines. At shallow depths a large amount of work was done by the early day workers from the numerous shafts in the vicinity; and they met with much success ... In the year 1911 the company milled 4580 tons for an average yield of 5dwt. per ton. ⁷⁷

1912:

Mining throughout the year has not been marked by any special discoveries. Several companies doing pioneer work on the main lines, and others that were developing the sidelines have temporarily suspended operations. Hustler's line: United Hustler's and Redan: a powerful plant has been erected on the K K shaft. Comet - Operations have been carried on with satisfactory results. Hustler's Reef - Ore bodies worked proved to be low grade. Great Extended Hustlers - The main shaft was sunk a further depth of 200 feet. Hustler's Royal Reserve - Owing to low-grade ore, operations at the Park shaft suspended. Fortuna Hustlers Co. - So far as proved, the deep level workings were not successful. Paddy's Line. Sea Co - Prospecting on this line of reef has been discontinued. Garden Gully United - a new No 4 shaft has been started from the surface ... A pumping plant has been erected at the shaft. Unity Co - At the 657 feet levels this company cut the Paddy's Gully line. Garden Gully Line. Cornish United Co - suspended operations during the year - low-grade ore. Carlisle Co - at the 3,375 ft level the stone that gave so much promise in the beginning of the year did not maintain its value. Unity Co - On this line several men are prospecting. Victory and Pandora - Nothing new has been discovered. Garden Gully United - Payable gold has been discovered on the east back. Sea Co. completed sinking the shaft, and is now driving to meet the shoot of gold bearing stone worked by the Southern Garden United Co. Sth Garden United Co. - has worked throughout the year. Londonderry Co: nothing of a payable nature found ... Active operations underground suspended. United Ulster Co: no fresh discoveries. Great South Garden Gully Co - suspended operations. Garden Gully Consols Co - sunk the main shaft a further 100 ft. New Chum line. No pumping or baling is done on this line. Companies are working in the shallow levels divert any water that may be making down their shafts. The water is gradually rising, and will soon be a menace to adjacent lines if some concerted action is not taken for their protection. Hercules & Energetic - Several parties are working the shallow levels. Ironbark Co - has not met with any success on this line. Victoria Consols Co. - a limited number of men employed. Central New Chum - low-grade ore being milled. New Chum consolidated Co - stone met with at the beginning of the year from which so much was expected did not continue to give payable results for any length of time. New Shenandoah Co - Good returns obtained for most of the year. Sheepshead line. Hercules and Energetic - sinking this line deeper, now down 500 feet ... A complete winding plant has been erected on the shaft this year. Ironbark Co - working this line from the main shaft at the New Chum line. Victoria Consols Co - East shaft operations carried on at the 400 feet level. Lansell's Little 180 - is a large employer of labour and getting good payable results. Central Red White & Blue - still continues to pay dividends. Mannings Central Blue Co - has failed to locate gold bearing stone. Sheepshead Co - Nothing more than a few payable crushings has been obtained. Red White & Blue - Patches of nice gold-bearing stone have been met with. North Red White & Blue - is a large employer of labour, and had a successful year. New Red White & Blue - payable crushings throughout, and employs a large number of men. South Red White & Blue - a small party of men employed. Further south on this line, the Extended Red White & Blue, and Casley's Companies worked for a portion of the year.

Deborah line. Unity Co - discovered nothing payable. Londonderry Co - commenced sinking a shaft, work now suspended. Deborah Reef Co - spent a lot of money in shaft sinking and cross-cutting. Nell Gwynne line. Goldfields South Co - ceased operations early in the year. Victoria Proprietary Co - crushed low-grade stone throughout the year. New Chum Goldfields Co - successful year as milling costs are very low. North Bendigo - good payable stone is showing in different parts of the mine. Nell Gwynne Co - Operations during the year have been fairly successful. Goldfields Consolidated - shaft sinking, prospecting shallow levels, and crushing low-grade ore. Goldfields North - At times good crushings obtained. Goldfields Extended - prospecting various levels without success. New Golden Fleece Co - on the Carshalton line, is milling payable stone. Stafford Reef - Patches of payable stone, but nothing consistent. Thistle Reef - prospecting work by this company failed to find anything. Langdon Co - No change in this group, including the North and South Langdon Co's - both suspended operations during the year. Bird's Reef Co - promising outlook ... a complete crushing plant was erected. Wilson's Hill Co (Marong) - an old shaft was enlarged to four compartments, and sunk a depth of 390 feet.⁷⁸

1912-14: By 1912 wage increases of up to 15 per cent had been achieved despite the recession in the industry. It was not only in the matter of wage claims, however, that the new militancy was asserting itself. Since the passing of the Gold buyers Act, aimed at stamping out gold stealing in the mines, the question of the searing of miners rankled bitterly.... Local mine-managements and miners laid charges and counter-charges. One night in early August 1912, Detective Timanus paid the South New Moon Mine a surprise visit as the midnight shift was coming off. One miner, John Hutchens refused to permit Timanus to lay hands on him. Hutchens was a man of highly reputable character. He readily agreed to be searched by Dawe, the mine's regular searcher; no gold was found on him. When the shift lined up next afternoon, Hutchens was hauled out and given his dismissal notice. The rest of the shift refused to go below unless Hutchens was reinstated. A reason for his dismissal was demanded; the company refused to give one. Employing 140 men, the South New Moon was one of the more important mines on the field, but it had a poor record in industrial relationships. Other shifts immediately struck in sympathy with the men who were out. The mine was declared black and picketed. The company threatened to bring in outside labour. The men stood their ground and a week later the management capitulated. Hutchens was reinstated and work resumed. The issue continued to fester. It was indicative of growing industrial unrest in the mines. Strikes occurred the same year at the New Red, White and Blue and at the New Moon, and the following year (1913) at the Virginia and the Prince of Wales over the question of compulsory unionism. The latter strike dragged on for months ending at length in the unconditional capitulation of the strikers. Its failure was symptomatic of the fading prosperity of the industry. With the onset of World War I and the numerical decline of the work force, the bargaining power of the miners virtually disappeared.⁷⁹

1913, Feb. 13: United Hustler's and Redan - Some early day reminiscences. The ground comprised in this company's extensive lease was first opened in 1853. In that year there were over a dozen claims working on the co-operative principle. Each of the claims had its own shaft and, despite the comparatively small holdings, operations were, on the whole, attended with considerable success. According to the records the spurs and leaders were very rich. There were no fewer than seven or eight different parallel reefs worked in the group of claims. The names of the reefs were, starting W., and going E., the Hustler's, Redan, White, Ragman's, Williamson, Maiden, Sophia, and Bignell's. The last named reef is described as a large formation. Some phenomenal yields were obtained from the different reefs which, starting almost from the surface, were operated at comparatively shallow depths. The water difficulty presented itself at depth was attained, and, as might be expected, retarded the exploitation of the deeper ground. In 1862 some of the properties were amalgamated, and a 12-head battery was purchased by the Alabama Co. from Mr Henry Kock, who afterwards built the present Koch's Pioneer battery. Following the amalgamation another period of great prosperity was experienced. There were 11 small companies in possession of the ground in 1876, and it was agreed that a further amalgamation was advisable. Owing to there being several makes of stone on the surface, there were at that time three, four, and even five claims abreast, while in length the claims were very small. At that time the western ground was considered to be twice as valuable as that on the E. side.

The negotiations for consolidation of the various interests were greatly protracted and it was not until October 1877, that registration was affected. The K.K Company at the last moment declined to come into the scheme. Its lease was 47 yards long and 90 to 100 yards wide. For many years the K K Company did little work, and eventually the United Hustler's and Redan, as the parent company, secured the ground, and the K K shaft since remodelled and deepened constitutes the principal base of the company's operations in the S. portion of its lease. It is computed that the gold won by the various claimholders in the locality reached at least 250,000ozs. The present company has won over 112,022ozs. gold, and its dividend record is £162,827.⁸⁰

79 Cusack, 1973, p.213

80 Bendigo Advertiser [DMID records] 13/2/1912

1913, March 19: Dredging Industry - Bendigo Dredging Company - Some Interesting Observations - That portion of the Bendigo valley extending from the railway line just below the Gas Works to White Hills produced a lot of gold in the early digging days, when alluvial mining was in the heyday of its prosperity. The alluvial wash covered a large area, but the outer fringes of the lead did not receive so much attention as the main gutter. After the diggers had extracted the 'cream' of the alluvial wash there came the puddling machine, which was much in evidence for many years. So extensive were the operations of the early day workers that scarcely a solid block of ground remained along the course of the gutter. The ground, however, was not completed of its wealth, and after many years the hydraulic dredge is serving a useful purpose in winning the gold from the abandoned ground, which previously had been regarded as a waste area. The company has two dredges at work. The No. 1 dredge, which has been in operation for the past two and a half years, is situated on the N. side of the creek, while the No. 2 dredge, which has only been working for a few months, is located on the S side and lower down the valley. Employment is found for a good number of men on the dredges. The wages paid fortnightly amount to about £130. The consumption of firewood is about 100 tons weekly, which also means the employment of a number of men. There is at present stacked in close proximity to the dredges about 1700 tons of firewood. The large accumulation of fuel is in anticipation of a probable scarcity of wood in the winter months when the conditions are not so favourable for carting. The hydraulic dredge is specially adapted for dredging areas such as the Bendigo valley. The system adopted is to impound the material dredged in a specially prepared paddock, which has previously been dredged. From these improvised settling areas the water is returned to the dredge pump and is used again. By this method none of the refuse finds its way into the main watercourse, and consequently there is no silting up of the waterway lower down the valley. An entirely different type of dredge is in use in the principal dredging districts in Gippsland. In the latter district much of the dredging is done in the flats, where the ground has not previously been worked, and under conditions altogether dissimilar to those at Bendigo. Since the No. 1 dredge has been in operation about 15 acres have been dredged. The average gold production works out at about 200 oz per acre, and at that rate a profit of about £200 per acre is made. There are 60 acres or more to dredge, and it is calculated that there is eight years' work ahead... The No. 2 dredge will traverse the ground on the White Hills roadside of the creek, and the company expects that a coarser sample of gold will be got. The company last year acquired at an expenditure of £2000 what is known as Caroline's paddock adjacent to the road and creek. There are eight shareholders in the company, which have invested about £4000 in the enterprise. Other areas in and around Bendigo considered suitable for dredging have been secured, and as opportunity is presented the industry will be extended. It is contemplated to work some of the small flats in isolated localities with a smaller type of plant operated by electrical power.⁸¹

1913, June 5: The White Hills - extensive auriferous deposit. The White Hills Recovery Co., which is in the course of flotation, expects shortly to enter on its enterprise of treating the extensive alluvial deposits comprised on its lease ... In the early days a considerable quantity of gold was won from the cemented alluvial deposits that occur at the White Hills ... Mr Donald Clark [director of Bendigo School of Mines wrote re the White Hills in 1908] ... "The golden gullies heading near the lines of reef ran across them at varying degrees and finally found their way into Bendigo Creek, which runs in a north-easterly direction, and ultimately is almost lost on the wide plains gently sloping to the Murray.

The Old Bendigo Creek of past ages ran approximately parallel to the present one, but at an elevation of about 50ft. The modern creek has cut its channel in the softer ground to the N. of the ancient bed. The latter is now a ridge running parallel with the creek, and from its striking appearance is known as the 'White Hills'. These hills consist of an almost unbroken mass of quartz conglomerate cemented with sliceous material, and extended nearly to Epsom. They have been mined for alluvial gold, and a great deal of cement on the bedrock was crushed for its gold content. The gold here was much finer than in Bendigo. In the early days, when water was scarce, all the auriferous clays had to be puddled, and the slime was sent down the creek in millions of tons, the surface soil from the hard sandstones and slates was stripped off and the surface swept, and the alluviums sent down the gullies to the flat land below, raising the whole level of the creek banks. Meanwhile primitive batteries commenced to make an appearance, the spring dolly being the favourite for crushing the cement; then came the forerunners of the present battery, and with them the tailings, which augmented the choking of the creek. Batteries sprang up from Eaglehawk to Golden-square and from Bendigo to Huntly, crushing both quartz and cement. Those dealing with the alluvial ceased long ago, and over their sites grew trees for 30 years or more." For many years prospectors have earned a living by using the cradle and sluicing the friable material. The cemented alluviums have been cast aside awaiting a modern method of treatment. There are immense deposits of auriferous gravels in these hills, and the promoters of the company, will install machinery plant to extract the gold contents from the cemented deposits. 82

1913, July 25: Fuel for Mining - Demand for Charcoal - Local Enterprise - The introduction of producer gas power in mining and other industries has created increased demand for coal fuel. Charcoal is the most suitable fuel for gas plants, and the wood from the forests surrounding Bendigo is splendidly adapted for the manufacturing of the coal. To meet the growing demand for refined charcoal, two young Bendigonians, Messrs E.G. Mueller and Mr Herbert Barker, have entered on the enterprise. Mr Mueller is the son of the late Mr E. Mueller, one of the pioneers of Bendigo mining. The works have been established at Mr E.G. Mueller's Estate, at Ravenswood, about three-quarters of a mile from the Ravenswood railway station. The estate consists of 1700 acres, on which there are large supplies of splendid timber, chiefly of white and grey box. Mr Mueller has also secured options for timber from adjacent landholders. The plant is built on up-to-date lines, and is the only one of its kind in the district. It is known as the 'Brisbane' retorts, and the patentees are the Australian [illegible] Melbourne. The plant was [illegible] Messrs Peter Jorgensen and Sons under the direction of Mr Barker, who has much experience of producer gas power and matters pertaining to fuel. There are two retorts, which are situated side by side, and supported by a structure of brickwork and stout iron girders. The retorts are 15ft high, and have a diameter of 8ft. They are conical at the bottom and empty automatically into spacious cooling tanks, each of which are 14ft long and 7ft in diameter. The retorts and cooling tanks are of steel, and arranged so that the coal gravitates to the floor, where the material is bagged after screening. The retorts are lined with firebricks, and there are a number of openings termed 'vents'. These are fitted with an adjustable valve, so the draught necessary for the firing of the wood can be regulated. The process is to start the fire before filling, and the wood, which is raised by an incline tramway to the platform, is fed regularly with the retorts until they are filled. When the baking process is complete lowering a lid, which is fastened by a tension screw, seals the retorts. Constant attention is necessary while the retorts are being charged to ensure of the draught being regulated. Manipulation of the 'vents' is necessary to ensure of gradual and even baking without reducing any portion of the wood to ash. Dry wood is more adapted than green wood for the manufacture of the coal. The use of green wood requires forced burning, which is not desirable. Under the present system, the coal is absolutely free of dirt and foreign matter. The capacity of the present plant is 30 tons per week... Experts pronounced the coal to be superior to that manufactured at Woodend and other localities. In Bendigo a large quantity of charcoal is used for fuel, as well as the forges. The Central Red White and Blue Co. consumes about 7 tons of charcoal per week, which gives some idea of the consumption in other mines. In the past supplies have been drawn from districts far removed from Bendigo, so the establishing of the works at Ravenswood may be regarded as a local industry. There are about ten hands employed, but with the prospect of a rapid expansion of the industry, this number will no doubt be augmented. Stumps and trunks of trees can be used, so the paddocks are being cleared of timber regarded as valueless. In this way the ground can be prepared for agricultural purposes, so the manufacturing of coal fuel under this system should be beneficial to the farmer and artisan. 83

82 Bendigo Advertiser [DMID records] 5/6/1913

83 Bendigo Advertiser [DMID records] 25/7/1913

1913, Sept 1: South New Moon. Its great dividend record. In the last decade the South New Moon Co. has outshone as a dividend payer every other mine in the state. The dividend declared on Saturday makes the record half a million sterling, representing £15/12/6 per share on a 32,000 issue. That record has been excelled by two other mines on the Bendigo field, namely, Garden Gully United, which has a dividend total, including its tribute companies of £1,046,658, and the Great Extended Hustlers occupies second place with £657,200. Many years have elapsed since these companies were in the heyday of their prosperity. The South New Moon entered on its career in 1871. The mine did not claim any distinction for many years. In fact the company had a precarious existence at different periods, and the Government aid was sought and obtained in the year 1887. The present company purchased the lease from Mr. James F Graham. For many years the company had an uneventful career, and in May 1889, there were 20,627 shares forfeited for non-payment of calls. ... The first dividend of 6d per share came in January 1890, but profits came along slowly for many years ... It was in June 1900 that the company practically entered on its great dividend paying career ... Since the inception of the company 381,324 tons have been milled for a gold yield of 223,891 oz, which is exclusive of residues. ⁸⁴

1913, Dec 4: White Hills Gold Recovery Company. The operations of this company will be something in the nature of an innovation in regards local mining ... The early -day diggers did a large amount of work at the White Hills, and in the later years the slopes of some of the hills were stripped of the surface material for the gold it contained. The diggers did well, and the extent of the after-work done by the puddlers and the ordinary crushing batteries indicates that success attended that mode of treatment. Originally the main watercourse of the central portion of the goldfield, which flowed along the chain of hills, served as the main feeder to the deep alluvial lead system of Huntly, which was worked successfully over 50 years ago. The sand and the slimes from the old batteries along the course of the lead from Epsom and Huntly for some time past have provided profitable employment for a large number of men engaged in the cyanide industry. Less than a decade ago the sand dumps were regarded as valueless, but now new methods of treatment and the proper recognition of the value of the slimes, were the main factors in the success of the industry. The company has appointed Messrs E. G. Edwards and H E Burridge engineers and operations will be under their personal supervision. ... Contracts are to be let forthwith for the necessary buildings and plant. It was the original intention to work with producer gas power, but negotiations are pending with the Electric Supply Company.⁸⁵

84 Bendigo Advertiser [DMID records] 1/9/1913

85 Bendigo Advertiser [DMID records] 4/12/1913

1913: Hustler's Line. United Hustlers and Redan - This company has 2 shafts (main and K.K.). Comet Co - A number of tributers employed at this mine. Hustler's Reef - both wages men and tributers employed. Great Extended Hustler's - has had a successful year. Fortuna Hustler's - operations confined to 320ft level. Paddy's Gully Line. Cornish United Co - started operations in the latter part of the year. Carlisle Co - has had a successful year. Unity Co - prospecting at 900 and 1,010 ft levels. Victory and Pandora Co - underground work was curtailed. Garden Gully United - had a successful year. Sea Co - done a good deal of development work. South Garden United - during the year the Londonderry shaft and machinery were purchased. United Ulster Co - returns not very encouraging. New Chum line. Hercules & Energetic - working. Ironbark Co - new shaft sunk ... a neat 16-in double cylinder first-motion engine has been erected at this shaft. Victoria Consols Co - improved prospects. Lansell's Little 180 - a large employer labour, and has a most profitable year. Central Red White & Blue - had a profitable year ... An up-to-date winding plant is in the course of erection. Mannings Central Blue - prospecting being carried on. Sheepshead Co - main shaft sunk nearly 200 ft. Red White and Blue United - principal work carried on from the main shaft. North Red White & Blue - a prosperous year. New Red White & Blue - average milling stone becoming poorer. South Red White & Blue - this mine is paying its way, a limited number of men employed. Nell Gwynne line. Goldfields Sth Co - resumed operations ... an air compressing plant was erected. Victoria Proprietary - put hands off. New Chum Goldfields Co - had a successful year. North Bendigo Co - operated throughout the year on payable stone. Nell Gwynne Co - payable results. Goldfields Consolidated Co - To enable the Co. to continue to sink the main shaft the Department has advanced a sum of £2,500. Goldfields Extended - prospecting. Miscellaneous. New Golden Fleece Co - during the year erected an up-to-date 10-head battery. Stafford Reef Co - suspended operations. The Hansel Munday Co - received an advance from the Govt. to enable to sink the main shaft. A pumping engine with lifts complete has been erected. The water is heavy. Bird's Reef Co - received assistance from the Govt.⁸⁶

1914-18: [Following the outbreak of WWI] Production, which had been declining steadily since 1904, plummeted. In 1916, for the first time in the long history of local gold production, the annual yield fell below 100,000 ounces. Only 85,622 ounces were produced, or 34,000 ounces less than in the previous year. Dividends dropped accordingly by some £50,000. The debacle continued. The following year production declined to 67,760 ounces and a meagre £6,451 was paid in dividends... Mine-managements began to realise and accept the unpalatable fact that operation of a small mine at depth, on a small lease, with the increasing need of capital and new equipment, at a time when capital was in short supply, was not an economic proposition. The floating of the Bendigo Amalgamated Goldfields Company in 1917 with a nominal capital of £500,000 in 2,000,000 five shilling shares, and aggregating thirty-five companies on the field, was a recognition, if a tardy one, that the day of the 'big mine' had dawned. If unsuccessful, at least it was a local initiative to meeting a changing situation.⁸⁷

86 Mines Dept, Annual Report, 1913

87 Cusack, 1973, p.210

1914: Mining in the district has received somewhat of a check, owing to various causes. The drought is responsible for closing a number of mines, and curtailed work at others. The European war has, in a more or less way, affected the mines where English capital is invested, and, further there appears to be a general tendency to avoid development work, and confine operations to known bodies of gold-bearing stone. The average yields of gold per ton shows an increase; but it is only a question of time when these supplies will be worked out, and the companies faced with a serious problem, for it is a fact that Bendigo at present is suffering from a dearth of plucky investors. Hustler's line. United Hustlers and Redan - crushings throughout the year proved payable. Comet Co - a number of tributers is employed in the mine. Hustler's Reef Co - parties of tributers are working in the mine. The Great Extended Hustlers Co - a successful year. Paddy's Gully line. The Unity and Garden Gully Co's prospecting this line. Garden Gully line. Cornish United Co - successfully located the 'spur' country. Carlisle and Passby Co - had a successful year. Unity Co - ceased operations on Paddy's Gully line. Sea Co - at 1,500 feet, payable stone. South Garden United Co - has had a fairly successful year. United Ulster & Great Southern Co - suspended operations. Red, White & Blue, or Sheepshead line. Hercules & Energetic - a successful year. Ironbark Co - during the latter half of the year the stone became poorer. Victoria Consols Co - operating on payable stone. Lansell's 180 mine - Owing to the drought, crushing operations have been suspended. Central Red White & Blue - yields fallen off. Mannings Freehold - operations suspended. Sheepshead Co - payable gold met with. Red White & Blue Co - prospecting. North Red White & Blue - a small reduction in the number of employees. New Red White & Blue - a number of tributers engaged on the mine. South Red White & Blue - mine paying its way. Casley's Red White & Blue - main shaft recommenced with Govt. assistance. New Chum Line. New Shenandoah Co - water baled intermittently to keep the battery going. Nell Gwynne Line. Goldfields Extended - work now suspended. Goldfields Nth - work suspended. Goldfields Consolidated Co - several parties of tributers working. Nell Gwynne Co - owing to scarcity of water, mine at a standstill. North Bendigo - operations curtailed by drought, and further misfortune befell the Co. in the destruction by fire of the battery and air compressor plant. A 15-head battery will take place of the old 10-head. Miscellaneous. The New Golden Fleece Co - worked ore of low grade. The Hansel Mundy Co - prospecting with assistance of Mines Dept. Bird's Reef - also receiving help from Mines Dept. Langdon - has a party of men working.⁸⁸

1914, Oct 17: Reviving Bendigo - Public Spirit Needed - More Progressive Mining - Increased Gold Output - Need of the Hour - The most pessimistic must confess that Bendigo need not be as dull as it is, despite the war, despite the drought. Of these two catastrophes the drought is affecting the city the worse. But neither is wholly responsible for the alarming condition into which Bendigo mining is drifting. The drift had set in, and had been steadily gaining momentum long before the war came with such a sudden and awful blast, and long before the dry grip of the drought tightened on the winter and squeezed out the spring. The 'leaders' of Bendigo mining are standing dumbstruck at the sight of the grand old industry, which made the city, and contributed so largely to the wealth of the State, slipping away into the memory of the past. Mine after mine is being closed, valuable machinery is being blown up for scrap iron, and the mining population, than whom there are not better spenders in any industrial community, are leaving the city for distant fields - and too often to swell the overgrown metropolis. Yet who seems to care? It is undeniable that the mining drift started with the deaths of the few 'quartz kings' who regarded Bendigo mining more as an investment than the medium of market speculation. They had an indomitable faith in the resources of the field, and their faith and courage inspired others with confidence, and thus extended the field of mining operations. Unfortunately their places have not been filled... Strikes on the part of the miners, and the often-foolish utterances on the part of some of their leaders, did not tend to create confidence in the minds of outside investors. One of the worst blows the industry got in these latter troubled days was when directors representing almost the whole of the companies on the field decided on a restriction of operations, due to a state of panic caused primarily by the prevalence of gold-stealing. That has proved to be a double-edged sword. Whilst it struck deeply at the miners, it is now cutting sharply the industry, almost to the verge of extinction. Then again, in the matter of tributing, there is some truth in the statements of tributers that here and there a mine manager shows hostility to letting tributes. Of course there is much to be said on both sides. Some tributers want to go into impossible places, where their presence would hinder the operations of the company or bring about the collapse of other places.

It is clear in the interests of the industry there should be some arbiter between the mining manager and the tributer, or rather the applicant for the tribute. Particularly in cases where the lease covenants are not being observed in the number of men employed in the mine, unreasoning opposition on the part of the mine manager should be silenced by the interposition of the mining inspector or some other authority on the suggestion of the warden. That principle could probably apply to all mines as being made part of the mining lease. The tributer has been a great asset to this field. The share market is also in the doldrums. And no wonder. The reactionary policy of restricting the gold output cannot appeal but adversely to the speculator and the investor. The share market has often formed the subject of hot criticism, but it is a useful adjunct to the industry. When shut up recently stocks were not quoted, and people ceased paying calls in many instances. If a little life and energy were put into Bendigo mining... the chances are that not only would the men walking the soles off their boots in tramping from one end of the long field to the other vainly searching for work find employment, but a goodly number of Bendigonians who have left for Broken Hill, and are stranded there, would be induced to return.⁸⁹

1914, Nov 13: The Bendigo Goldfield, The tributing system - The declining gold production under the tributing system is a matter for serious consideration, both for the companies and the miners, and the commercial interests of the district. The great value of the tributers' work to the companies and the field has long been recognised, and the companies almost invariably allow the tributers access to any portions of the mine in which the company is not engaged ... The deep ground work on the field did not provide any scope for the tributers, and that is a factor which has contributed largely to the decadence of the system. There should be plenty of scope for both the company and the tributer in the shallow ground. The resources of the shallow ground have not by any means been exhausted. The shallow ground, besides being more productive, can be more economically worked, and under more healthy conditions for the miner.

The accompanying statement, shows the tributing records on the Bendigo field since 1900:

1900	31,430 tons	8,912ozs.	47mines
1901	32,998	8,381	54
1902	37,363	9,032	59
1903	46,969	12,442	57
1904	38,598	10,683	44
1905	33,084	8,435	44
1906	33,514	10,807	35
1907	33,407	11,021	33
1908	33,730	13,134	44
1909	66,557	23,279	40
1910	62,551	22,667	48
1911	42,925	17,317	46
1912	31,788	12,842	38
1913	25,860	9,752	35
1914 (10 months)		17,490	6,62030. ⁹⁰

1915, Jan 29: Mining in Bendigo - Table for Six Years:

- 1901:** No. of Companies and Tributes on Published Lists, 221; No. of Companies and Tributes reporting gold outside of dividend-paying companies, 162; No. of Companies and Tributes reporting gold-paying dividends, 36; Yield, 197,714oz; Dividends, £183,780; Calls, £136,109.
- 1907:** No. of Companies and Tributes on Published Lists, 189; No. of Companies and Tributes reporting gold outside of dividend-paying companies, 115; No. of Companies and Tributes reporting gold-paying dividends, 21; Yield, 196,054oz; Dividends, £121,342; Calls, £208,779.
- 1914:** No. of Companies and Tributes on Published Lists, 118; No. of Companies and Tributes reporting gold outside of dividend-paying companies, 57; No. of Companies and Tributes reporting gold-paying dividends, 38; Yield, 160,601oz; Dividends, £125,848; Calls, £62,169.

⁸⁹ Bendigo Advertiser, 17 October 1914 [DMID records]

⁹⁰ Bendigo Advertiser, 13 November 1914 [DMID Records]

The above table gives in a condensed form a picture of Bendigo mining during the past fourteen years. Details are not needed. The figures are striking enough, and the legend on railway crossings, 'Stop, Look, Listen,' may well head this paper. All interested in the prosperity of this district should consider the admonition. Never before have matters in Bendigo been in such a pass as at present, nor such need for consideration to be given to remedy them. Workers, business people, investors are all feeling it, the former perhaps most of all, and it needs no prophet's eye to discern there are worse times ahead. Some of the causes of the depression we cannot control. The drought and consequent bad season, the failure of crops, the loss of stock, and dearness of living, we must bear as we well may, trusting that the Power who rules the conditions will send us the needed rain, with the resulting increase of food production and easier conditions of existence. But other features of the depression are largely of our own making. We have gone in the face of economic laws, we have undermined the confidence which should exist if a gold mining community is to prosper; we have permitted class feeling, strife, and rancour to make their hideous way in the community; we have scared away capital, the life blood of the mining industry; we have been by a process of slow strangulation gradually killing it. Today we are paying the penalty in idle mines, workless men, empty cupboards, and suffering wives and children. Bendigo has had its depressions before, and felt them severely, but pluck and perseverance, faith in the district and its resources, goodwill in the community, has brought us round again. Investors had the feeling they were getting a square deal, and challenging misfortune in the right spirit development work was persevered with, and reward sooner or later was sure to come. But there is a different spirit today, and till it is altered we cannot expect the uplift we need. In 1901 there were 221 mining companies and tributes on the Mining Exchange list at work in Bendigo. Since then they have dwindled down as follows: - By 1904 31 had fallen out. The next three years kept up the number, and by 1910 there still remained 184. In the next year 27 lapsed; the next, 1912, 14; in 1913, 14 more; till last year, 1914, only 118 were reported as working during the year, and not a few of those are now stopped.

Outside of the dividend paying companies the number that reported gold, decreased from 162 in 1901 to 57 in 1914. Dividend-paying companies have not decreased, as there are more this year than any since 1901, but the dividends are not so large. Gold returns have decreased from 248,000oz in 1904 to 160,601oz in 1914. Dividends have fallen from £367,896 in 1904 to £125,848 in 1914. But the most alarming feature of the mining outlook is the decrease in the calls paid, marking with striking significance that loss of confidence, which is the absolute requisite for prosperity. Development depends mainly on calls being paid; the payment of calls depends on confidence, and they rise or fall together. During the past 14 years the heaviest call list was in 1907, when £208,779 came from the pockets of investors. Since then there has been a yearly decrease, till in 1914 the calls paid only totalled £62,169. The number of claims reporting gold in 1901 was 162, outside of dividend companies, but in 1914 it had decreased to 57. What does this falling off in calls connote? After a working plant has been provided for a mine, not allowing for interest or depreciation, the ratio of wages to mining requisites is about two-thirds of the working cost of the mine, allowing the average wage for those engaged in mining to be 50/ per week. Let us see what the falling off in calls means to the workers. The withdrawal of each £10,000 in calls means a loss to the wages proportion of mine costs of £6666, and means £3334 less spent in mining requisites. Many of these requisites are locally provided, and all locally distributed, so that the living of others than those actually engaged in mining operations is lost. The steady decrease in calls paid from 1907 to 1914 meant the withdrawal from the wages fund and consequent unemployment for each £10,000 withdrawn of 51 men. It is a significant fact that the decadence of the mining industry has been most pronounced since the virus of Socialism came into this district and the miners elected so-called Labor men to represent them. Its decay has synchronised with the spread of socialistic Labor views and the return of socialistic members. Instead of seeking to maintain good feeling between employers and employed, every opportunity is taken by the leaders of the miners to breed strife and ill will. They have been teaching the workers to look on those who found the money to provide them with work, not as friends, but as enemies. They have promoted and encouraged strikes instead of acting as peacemakers, as the miners' leaders did in former times. Those men were not concerned to glorify themselves at the expense of workless men and suffering women, but to keep the wheels of industry moving, and maintain peace and prosperity. Another cause is the increased cost of mining operations. Wages are higher, and that is not objected to, but it is complained efficiency has not kept pace with the increase... Another reason is the penalties imposed on the mining industry.

For years the industry was not charged income tax, but an impecunious Treasurer, who had no regard for mining, levied it, and so seven pence in the pound is paid by the companies on all dividends. This means that for the past seven years from £6000 to £8000 per annum has been taken from this district in this way. Now a new embargo has been levied by the Workmen's Compensation Act. With the principle of the Act all must have sympathy, but the full burden should not have been laid on a struggling industry. The premium paid - 65/ per cent - is almost the highest charged in any industry.⁹¹

1915, Jan 29: New Dredging Enterprise - Trial at Eaglehawk - Mr W.F. Dugins, who has a large dredging area on the Eaglehawk Flat, immediately below Lake Neangar, has designed a new type of dredge. A working model has been installed in the locality, and on Saturday a public trial of the small plant was witnessed by a number of residents... The new plant is called 'a combination bucket and suction dredge,' and it is claimed to be adapted for working in shallow alluvial gullies. Only one unit of the plant was in operation on Saturday. It consists of a large cradle, with mechanical attachment for operating by hand or motor power. One man was capable of supplying the power for the model on exhibition at Saturday's trial. The dredging material is deposited in the screen of the cradle, and with the oscillating motion it passes over a series of ripples and screenings to the outlet. The water is fed into the top screen, and is pumped automatically by the machine. Small quantities of stuff termed overburden, were put through the machine, and there was a satisfactory gold extraction.⁹²

1915, Feb: Mining on Bendigo - No. II - ... Though it is not well to lean too much on Government, under present circumstances assistance may be fairly claimed. One of the best ways it can be given would be by one or two power plants to keep the lines drained. The next suggestion is that the best and most modern appliances be used in mining thus expediting work and tending to economy. Some years ago suction gas engines were introduced on the field, and the fuel cost of batteries was reduced to less than one-fourth. The breaking, handling and transportation of quartz should be effected by the best of appliances, thus reducing cost and lightening labour. The next suggestion is more co-operation between the companies and the miners. If miners would work in with companies, and take some of the risks of the ventures financially, receiving a subsist allowance and a share of the profits, it would give confidence to call-payers, as all would have an interest in making the mine a success.⁹³ To bring this about and get the hearty assistance of the Government, it is absolutely necessary that a change should be brought about in our Parliamentary representation.

91 Bendigo Advertiser, 29 January 1915 [DMID records]

92 Bendigo Advertiser, 29 January 1915 [DMID records]

93 Bendigo Advertiser, ? February 1915 [DMID records]

1915, March: The Bendigo Goldfield - Chances for Prospectors - Notable Features Described - ... There are many places worth trying in the large areas north of Eaglehawk, where rich stone has been mined. In the Whipstick and extending onwards to Raywood, Neilborough, Sebastian, Yarraberb, and Kamarooka, innumerable shafts denote former activity. In many instances gold was got in payable quantities, though the reefs for the most part have only been superficially prospected. In those days it was a common thing to cart the stone many miles to a battery, and over rough roads. At Neilborough, which was rich in alluvial deposits, the quartz reefs also yielded well. The work was done chiefly by co-operative parties, and was not carried on to any great depth. The Whipstick has always been regarded as an area of enormous wealth. Its alluviums have produced some splendid nuggets, and the quartz reefs in the locality, though lacking in uniformity of gold contents, have produced some sensational returns... From the Old Tom mine over £20,000 worth of gold was got between the years 1868 and 1886. The deepest shaft on the ground at that time was 186ft. An English company in later years spent a good sum of money, but the capital was chiefly absorbed in equipment and what may be termed progressive work. As far back as 1860 work was commenced on the ground now comprised in the New Nil at Raywood. The company that first worked the ground won gold of the value of £50,000, and paid in dividends £16,000. The stone then became poor, and the mine was abandoned. In 1879 a new company commenced work, and for a time was very successful, getting nearly as much gold as the original company, and paying little less in dividends. The formations work extended almost from the surface, and was operated down to a depth of 316ft. The present company has extended the workings to 780ft, and its record to the end of 1914 was...- Tons crushed, 53,964; gold yield, 15,308oz 10dwt; average per ton, 6dwt, 3gr; dividends, £3000. Another mine with a great record is the Frederick the Great. Alluvial mining preceded work on the reef, which for years made Sebastian a centre of great industrial activity. The reef was opened as far back as 1864. Records for the eight years of the pioneer workers show that 165,443 tons were milled for a gold yield of 73,375oz, which realised £289,319. Working expenses and machinery accounted for £147,993, and the balance £44,892, was paid to the owner of the property, and £96,434 divided amongst the members of the party. In 1880 a company was formed, and after two years of unprofitable work, tribute blocks of 300ft square, were let as an experiment, and the subsidiary companies did we.. The parent company received a royalty of 21 per cent on the gold won, and for years enjoyed great prosperity. The company and its tributes won £291,750 worth of gold, and paid in dividends £118,534, besides paying the executors of the Charlton estate a sum of £29,175 in royalty. In 1887 the company was reconstructed, and English capital was brought into it. After calling up £3900, a good start was made by paying in dividends £28,275. It is estimated that altogether 170,000oz of gold were won from the ground.⁹⁴

1915, July 3: Tributing in Mines - Increased Production - The tributing system is an important factor in connection with the mining industry on the Bendigo goldfield. It has been the general experience that when employment becomes scarce in the mines the workers turn their attention to tributing. The companies have long since recognised that tributing is beneficial to the shareholders' interests, and consequently tributers are afforded greater facilities than formerly.⁹⁵

⁹⁴ Bendigo Advertiser, ? March 1915 [DMID records]

⁹⁵ Bendigo Advertiser, 3 July 1915 [DMID records]

1915, Sept 7: Bendigo Mining Companies - Dividends, Calls and Scrip Values - The war census, which is now being taken, and the income tax schedules, which will shortly have to be filled in, impose on holders of mining scrip the responsibility of recording dividend received and the amount paid in calls, together with a statement of the value of scrip held... In order to assist the investing public in the compilation of the statistics... we have compiled the records of the Bendigo mining companies... The following is the list of Bendigo mining companies. Birds Reef, Carlisle, Casley R.W. and Bl., Catherine Reef United, Central R.W. and B., Clarence United, Collman and Tacchi, Confidence Extended., Cornish United, Central Nell Gwynne, Constellation, East Virginia, Fortuna Hustler's, Garden Gully United, Golden Age, Golden Pyke, Goldfields Consolidated, Goldfields Extended., Goldfields North, Goldfields South, Great Extended Hustler's, Great Northern, Great Southern, Hercules and Energetic, Hustler's Consols, Hustler's Reef, Ironbark, Johnson's Reef, Koch's Pioneer, Manning's Central Blue, Murchison, Nell Gwynne, New Argus, New Chum Goldfields, New Golden Fleece, New Moon, New Moon United, New Moon Consolidated, New Nil, New Prince of Wales, New Red White and Blue, New Shenandoah, New St Mungo, North Bendigo, North Johnson's, North New Moon, Pearl, Princess Dagmar, Red White and Blue United, Sea, South New Moon, South Garden United, South Prince of Wales, Specimen Hill, Spring Gully, Suffolk United, Sheephead, South Johnson's, Stafford Reef, The Langdon, Thistle Reef, United Ulster, United Devonshire, Unity, United Hustler's and Redan, Virginia, Victoria Consols, Victoria and Pandora, Williams United, Windmill Hill, White Hills Gold Recovery.⁹⁶

1916, April 10: The Bendigo Goldfield - Depression and its Causes - Mr W.H. Cundy's Impressions - In the current issue of the 'Mining and Engineering Review', Mr W.H. Cundy ... states ... The Bendigo goldfield is passing through perhaps the worst period of depression known during its long and wonderful history. It is quite common to hear it explained in a confident manner that 'Bendigo as a goldfield is done.' That the depression is acute must be admitted, but the statement that the field is done is only a pessimistic view, not borne out by the actual conditions. The writer thinks it can be shown that the field is far from being in such a deplorable state, and the aim of this article is to demonstrate that after the 60 odd years of its existence, there still remains miles of unexplored reef channels. Bendigo presents, without doubt, the best undeveloped resources of any goldfield in Australasia... some of the chief causes to account for [why these resources have not been taken advantage of]... may be set out as follows:

1. Following the wonderful richness of the field it did not keep abreast with the times in introducing economic methods in regard to mining and machinery.
2. The shafts were all too small when great depths were reached to admit of economic working.
3. Several of the old pioneers having passed away during later years, others have not filled their places with the same enterprise.
4. Legislative laws, higher wages, increased cost for stores, etc., have hit the industry very hard, and investors are chary of supporting it under such circumstances.
5. The declaration of war some 18 months ago was a further unexpected trouble, causing a tightening of money with the direct result that the majority of shareholders would not, or could not, pay calls, resulting in a general curtailment of progressive work.
6. Materially adding to the general depression is the fact that the majority of companies during successful periods failed to either institute a vigorous progressive working policy or establish a substantial reserve fund to enable such necessary work to be carried out when bad times came along.
7. For years the boards of directors in many companies were lax in regard to the collecting of calls, with the result that shares were eventually forfeited with two, three, four, and even five calls owing. Unfortunately there were instances where directors themselves were the chief delinquents in this respect.⁹⁷

⁹⁶ Bendigo Advertiser, 7 September 1915

⁹⁷ Bendigo Advertiser, 10 April 1916 [DMID records]

1917: Eaglehawk District - No development of general benefit to the field has taken place. Gold yields have been small, and, together with the high cost of mining material, have, in some instances, mitigated against the general animated mining activity common to this district. Most of the mining companies in the Eaglehawk portion of the Bendigo mining district amalgamated their interests, and now carry on under the title of the Bendigo Amalgamated Goldfields Company. Greater economy in management is anticipated. The work carried on by the company in the shafts on the several lines of reef is as follows: Garden Gully Line of Reef - At the Koch's shaft. Windmill Hill shaft. At the Johnson's No. 2 shaft... Work at the Golden Age shaft. Pyke and Moon Lines of Reef - Constellation shaft. Great Northern shaft. Virginia shaft. Specimen shaft. New Argus shaft. Clarence and North Argus shafts - Work suspended. New Chum Line of Reef - Catherine shaft. Derby Line of Reef - Johnson's No. 3 shaft. Paddy's Gully Line of Reef - Clark shaft... It is the intention of the company to sink the shaft and do prospecting work. South New Moon. North New Moon...⁹⁸

1917: Bendigo District - The principal mines in the 'Central area' have been grouped into one company, known as The Bendigo Amalgamated Gold-fields Company No Liability. It is expected by the introduction of labour-saving appliances, and the use of the most efficient types of machinery, to make lower grade ore pay. The company's holdings comprise practically the whole of the mines between the Hustlers and the New Chum lines of reef, and for a length of approximately 5 miles. It is hoped a general impetus will be given to mining in the district. During the year several new companies have come into existence, amongst them being the following:- The Golden One, which has a holding on the Derby line of reef, centrally situated in the city, and is now engaged shaft sinking; the Central Bendigo, which is on a line of reef well to the east of the Hustlers line, is engaged shaft sinking, and a contract has been let for the erection of winding plant; Tyson's Reef mine, in which operations will be commenced early this year; Christmas Reef Company, on the Christmas line, well to the west of the central lines, is engaged shaft sinking and erecting machinery. Of the mines outside the amalgamated company, the Central Red, White, and Blue is one of the largest employers of labour, averaging about 80 men, including tributers, some of whom have had very fair results. The Red White and Blue Consolidated and the North Red White and Blue have maintained a regular output during the year. Red White and Blue United, and Red White and Blue Extended companies have been engaged prospecting. The Great Southern mine, on the Garden Gully line of reef, has been reopened. In the Diamond Hill group of mines, the main feature has been the transference of work by the New Chum Goldfields Company from the main shaft to the shaft previously held by the Victoria Proprietary Company, and they have had the satisfaction of acquiring a credit balance. North Bendigo Company has had an unprofitable year... New Golden Fleece Company has been crushing quartz of low grade from the upper levels. Tambour Major Company completed the unwatering and repairing of the shaft. Buttrey and mate, working a mine at Big Hill, near Crusoe, have, with the assistance of a Government grant, opened up a reef, and 60 tons yielded 55 oz of gold. At the close of the year the Bendigo Dredging Company's No. 2 was the only dredge working in the district.⁹⁹

1917-18: Mining in Bendigo had always been a mercurial business and despite the slump of 1917-18, those closest to the industry convinced themselves wistfully that a new golden age was in the offing. In the past, there had been periods of depression and these had invariably given way to others of great expansion. It was the pattern of history. However, the dividends on which the new founded optimism was based, were they deceptive. They represented returns from a single reef opened up in the Constellation Mine on the Garden Gully Line. A payout the following year of £15,750 was similarly that of a single company - the New Red, White and Blue, one of the few consistently profitable mines of the period.¹⁰⁰

98 Mining Surveyors' Annual Report, 1917

99 Mining Surveyors' Annual Report, 1917

100 Cusack, 1973, p.221

- 1918, June 3:** Amalgamated Goldfields Policy - The Bendigo Amalgamated Goldfields Company on Saturday made available [a] statement dealing with its policy. It is proposed to maintain sufficient mills to treat approximately 8500 tons per fortnight. These mills are the Virginia, Johnson's No. 2, Nelson, Koch's Pioneer, Carlisle, Consols and Garden Gully. It is possible that the Catherine mill may be used to replace one or other of these. The Virginia mill is now equipped with very efficient steam power, and the Koch's mill with suction gas. For the remainder, suction gas plants with good producers have been purchased, and these are being installed together with the replacement of the old-g geared drives by belt drives. The Carlisle mill is now undergoing this reconstruction...¹⁰¹
- 1918, June 21:** New Company Formed - Vigorous Developmental Policy - A definite basis of agreement has been reached by the representatives of the proposed new company that is to work certain leases on the Eaglehawk section of Bendigo mining field and the Bendigo Amalgamated Gold Mining Company. Mr G.E. Dickenson, chairman, and Mr Greening, engineer, representing the new company, and Mr A.H. Merrin, chief inspector in the Mines Department, yesterday interviewed representatives of the Amalgamated company at Bendigo with respect to taking over of the New Moon, Clarence United, New Argus and Suffolk United leases, and the purchase of certain plant. Mr Dickenson stated last night that negotiations had been completed between the new venture and the Amalgamated company. The syndicate he represented, which would be registered next week as the Bendigo A1 company, had arranged to take over the leases mentioned, and the purchase of the plant at the New Moon, Clark and Neangar shafts had been effected. Mr E.C. Dyason, managing director of the Bendigo Amalgamated Co., in the course of an interview, said satisfaction should be felt in the fact that the negotiations for the formation of the new company to operate at the north end of the field were likely to be completed shortly. The area embraced portion of the Bendigo Amalgamated Goldfields holdings on the Garden Gully, Paddy's Gully and Derby lines of reef, and included the Suffolk, New Moon, Clarence and part of the New Argus properties. The Amalgamated Co. was carrying on important prospecting work in the area at the Clark and Neangar shafts...¹⁰²
- 1918, June 21:** The New Company - Gratification is felt in mining circles at the decision of the State Cabinet to subsidise a new company on the northern extremity of the Bendigo field at Eaglehawk to the extent of £10,000, and confident hopes are entertained that the new venture will give a fillip to mining operations generally. No particulars are available as to the terms on which the A1 Company has acquired the various properties mentioned from the Bendigo Amalgamated Goldfields.¹⁰³
- 1918, Aug. 2:** Mining Questions ... The opinion having been expressed that if the Snob's Hill group of mines could be re-opened much gold would be won. Messrs Dyason and ? of the Bendigo Amalgamated goldfields, waited on the Eaglehawk Council last evening in order to make a statement in regard to their activities and policy in that area Regarding the winding plants at the mines, Mr Dyason said the compressor and mill at the Catherine mine would be of use in Eaglehawk. With regard to the mill, the present proposals are to shift it to amore central position somewhat south of the Constellation mine, nut the proposals could not be carried out at present owing to the machine shop going full time. Mr Dyason, explained that the opening of the Koch's Pioneer air station would take place shortly. It was far the largest present air station yet erected in Victoria, and capable of supplying a very large number of drills. It was proposed to shift the Catherine air station to the Virginia air station. They would be prepared to supply air to any purchasers that might come along at the running cost, plus 15% for running charges.¹⁰⁴

101 Bendigo Advertiser, 3 June 1918 [DMID records]

102 Age, 21 June 1918

103 Argus, 21 June 1918

104 Bendigo Advertiser, 2 August 1918,[DMID Records]

1918, Aug.9: Mine Pumping Systems - Economy and Efficiency - The introduction of producer gas power for operating the pumps at the New Red White and Blue has given the most satisfactory results, both in economy of fuel and efficiency in working. The pumps are raising water from a depth of 1900ft. Under the old system of operating with the steam engine fuel costs were in the rate of 90 per 24 hours of working. Early in the year the old steam engine was replaced with a producer gas plant, and fuel costs for running over the 24 hours period is now 21/, a reduction of 69/ for each working term of 24 hours. The power from the gas engine is transmitted by a belt, and the manager, Mr R. O'Brien, states that under the new conditions the pumps work more effectively. With the old-g geared spur wheel of the steam engine plant breakages of the pump rod were fairly frequent, but since the introduction of the new system, overing a period of five months, there had not been any breakage of the rods. This Mr O'Brien stated is an important consideration, and emphasises the efficiency of the new service with the power transmitted by a belt instead of geared wheels. The economy of producer gas power for pumping has also been demonstrated at the Londonderry shaft of the Bendigo Amalgamated Goldfields. The power was first introduced in Bendigo mining for crushing, and its great economy and efficiency were demonstrated in the mines at Diamond Hill, under the direction of Messrs McColl, Rankin, and Stanistreet, which firm was instrumental in getting it introduced on this field. The power is now largely used for air compressing, and its adaptability for the different branches of mining, together with the low fuel costs, are of importance to the industry.¹⁰⁵

1918, Aug 21: Bendigo Amalgamated Goldfields - Year's Work Reviewed - The first annual statement issued by the Bendigo Amalgamated Goldfields Co. Plant Reconstruction - The general policy of the company in regard to plant is based upon an investigation into the working of the area for the past 30 years, and its policy is broadly to maintain sufficient plant, much more efficient than that hitherto employed, to deal with the average production of the whole area for the period mentioned. In particular, the end toward which the reorganisation of the plant is being shaped is as follows: - It is proposed to maintain sufficient mills to treat approximately 8500 tons per fortnight. Two of these mills are already equipped with efficient power; for the remainder suction gas plants, with wood producers, have been purchased, and these are being installed, together with the replacement of the old geared drives by belt drives. The efficient air compressors are being concentrated into three main stations, which are well on the way to completion, and which will provide for from 150 to 180 rock drills. The largest of these stations - the Koch's - has been put into commission since the close of the period, and will result in substantial savings to the company. With regard to winding plant, the policy of the company is to maintain about thirty winding plants, all of good type. It is at present operating twenty. it will, therefore, be seen that the company is carefully planning for its future requirements, and that under any conditions it would be bad policy in the shareholders' interests to retain plants that is not likely to be required by the company, in view of the present high prices ruling for this class of machinery. An up-to-date and extensive machine shop has been purchased at a cost of £7000... This shop has proved of very great value to the company, more especially on account of the present abnormal conditions of the metal trade. Various loose plants, to the value of £6529, has been accumulated at the Johnson's depot...¹⁰⁶

1919, Jan 30: Bendigo A1 Company - ... The New Moon shaft will be deepened 200 ft to intersect the Clarence reef... The plant at the Collmann and Tacchi and the poppet heads at the N. Catherine mines will be removed and re-erected at the Neangar shaft (Derby line), which will be sunk a further 200 ft. The N. Argus shaft will be reopened... The amount of expenditure at the different properties were:- New Moon, £2808/2/; Clark shaft (Paddy's Gully line), £1259/19/4; Neangar shaft (Derby line), £717/17/8; N. Argus, £98/4/6.¹⁰⁷

1920-23: Even so, local prosperity and progress were still assessed in terms of the mining industry and in the post-war period, apart from a brief recovery in 1922-23, it was sick unto death. With a payout of £45,000 in dividends by the Bendigo Amalgamated Goldfields Company, the year 1920 had seemed to promise a striking recovery on the field. ¹⁰⁸

105 Argus, 9 August 1918 [DMID records]

106 Bendigo Advertiser, 21 August 1918 [DMID records]

107 Bendigo Advertiser, 30 January 1919 [DMID records]

108 Cusack, 1973, p.220

1921, Oct 18: Bendigo and its Future - Decline of Mining - Need for Industries - In 1852, a year after the discovery of gold in Bendigo, there was a population of 40,000, compared with 30,412 today. At the outset it was mainly a population of gold diggers, and after the alluvial resources of the field became exhausted quartz mining was the staple industry of the district. While gold mining flourished little attention was given to other industrial enterprises. Many of the pioneers of the gold-digging era afterwards engaged in farming, and settlement extended rapidly in the districts surrounding Bendigo. Great as are the resources of the Bendigo goldfield, the decadence of the industry practically began with the increased costs of production. With the pre-war standard price for gold, the increased burden of costs brought about a curtailment of development work. Companies solely engaged with development work became financially embarrassed, and mines were closed in quick succession. In the gold-producing mines work was concentrated on the developed payable ore reserves, and as they became exhausted the gold yield of the field rapidly declined. This combination of circumstances caused unemployment and a decadence of the mining industry, which was largely due to industrial considerations. The position of the industry would have been infinitely worse had not the premium on the sale of gold abroad been available. Many of the companies which survived the few years preceding the introduction of the gold premium would have been unable to continue had not the higher price for gold been obtainable, and fewer mines would have been working today. With a return to normal condition, and the release of capital absorbed by the war loans, gold mining will, no doubt, again have its attractions for investors, and Bendigo, with its large area of undeveloped resources, should claim attention. For the present the great need is the establishment of more industries which will co-ordinate with mining. A forward movement in this direction is the establishment of the Bendigo Freezing Works, which are being erected at a cost of more than £125,000... Plant is also installed for the treatment of tallow and manures. Later, the opportunities for fellmongery will receive attention. Another new enterprise is the Corona Paint Works. Already the manufacture of red oxide and ochre is claiming attention. The company has the raw material for 12 different shades of calcimines, and it is intended soon to begin the manufacture of paints. The London Christmas Limited is erecting a plant and buildings for manufacturing on a large scale chemical and other preparations from the alumina silicate deposits at Kangaroo Flat... Several knitting mills have been established since the war, and it is hoped that the abundant supply of wool from the districts beyond Bendigo will lead to the erection of woollen mills close to the city... The Bendigo Pottery is fully employed, and its products are being marketed throughout the Commonwealth. The manufacturing works of H.M. Leggos and Company Limited, the Bendigo Fruitgrowers and Jam Company, Messrs Jones, Miller and Company, and the Victorian Producers absorb a large portion of the tomato crops and the vegetable products grown in the district, and give much employment. The Electric Flour Mills, of Messrs Tomkins, Simmie, and Co. provide opportunities for the greater development of manufacturing industries in foodstuffs¹⁰⁹

1921-22: The Bendigo Amalgamated Goldfields Company, of which so much had been expected, decide to cease operations at several of the best known Eaglehawk mines, including the famed Virginia which, over the years, had yielded some 161,333 ounces of gold. The city was stunned. 'Not since the inception of the gold mining industry', wrote the Advertiser, 'had Bendigo experienced such a lean year'. A local syndicate calling itself the Eaglehawk Golden Mile Company hoped to arrest the decline by redeveloping the Snobs Hill group of mines, but the malaise was already deep-seated. The venture failed. Privately owned, the New Red, White and Blue continued as virtually, the only successful operator on the field and in 1922 was again, the only mine paying a dividend.¹¹⁰

109 Bendigo Advertiser, 18 October 1921 [DMID records]

110 Cusack, 1973, p.221

1922, Jan 6: Bendigo Goldfield - Suggestions for Revival - Reversion to Old Methods - Economic considerations contributed largely to the decline in the gold yield last year from the Bendigo goldfield, and made it the lowest on record. Following curtailment of development work, the output of ore decreased, resulting in a diminished gold yield. Ore production last year amounted to 132,753 tons, which is the lowest in the history of the field. The grade averaged over 8-1/2 dwt a ton, which in prewar times would have been considered fairly profitable. Despite that the premium on gold is now lower, it should be practicable, by largely increasing the output, to work profitably ore of that grade. A vigorous policy in developing the ore bodies would perhaps prove more beneficial than anything else in reviving the industry. Working costs are relatively lower when ore is mined and treated in large quantities. Unfortunately for the district, the policy for several years - dominated largely by the Bendigo Amalgamated Goldfields Company - has not achieved the expected results. The merging of companies deprived the industry of advantages that it formerly had. With the grouping of the companies the speculative spirit, which formerly was an outstanding feature in connection with the field, almost disappeared.

For sentimental reasons many investors had a preference for certain mines, and in lean periods paid calls to carry on prospecting in them. Success in one mine often stimulated enterprise and encouraged development in adjoining properties. Frequently a whole group of mines would become regular gold producers mainly because of persistent efforts in reaching certain objectives. Under the old system difficulties of drainage were more easily overcome. There was more systematic prospecting, and development gave scope for a regular and much larger output. Opportunities for tributers were greater, and were largely availed of, and this class of workers was of much assistance to companies. Great Resources - The resources of the field are great, and it is expected that a return to normal conditions will restore the industry much of its former activities. How can this be best obtained is now a question of absorbing interest. The Bendigo Amalgamated Goldfields Company last year returned to shareholders more than £75,000 of its capital, and abandoned some of its interests. There are many claims in which little or no work is now being done. If the burden were too great for the company, opportunity should be given to any new enterprise to acquire properties for the purpose of development before the workings are flooded with water and mines are stripped of machinery plant. It is interesting to recall the success of many mines in the last few years, which proves the wisdom of systematically prospecting the comparatively shallow ground. Instances are the rich reef worked in the Constellation mine at 622ft, the extensive deposits of spurs at 1,235ft and 1,264ft in the Carlisle and Unity mines, and the large deposits of spurs at 1,600 ft at the New Red, White, and Blue. These valuable discoveries were made on returning to the shallow levels, where shoots of stone had escaped attention for many years.¹¹¹

1924--27: The dream of the new golden age was rapidly fading but even the least sanguine were hardly prepared for the blow when in 1924 the Bendigo Amalgamated Goldfields Company, formed to reduce production costs by pooling equipment and facilities, and which controlled most mines on the field, went into liquidation. The Carlisle (operating under tribute), the Hercules and the New Red, White and Blue were the only mines of any promise ... By 1927, with most of the mines, with none paying a dividend and the field almost wholly idle, mining on Bendigo had reached its nadir. The Beehive Mining Exchange ceased to function and only a prospect of promising stone in the Hercules kept alive a faint flicker of hope.¹¹²

111 Bendigo Advertiser, 6 January 1922 [DMID records]

112 Cusack, 1973, p.221

1930 onwards: After being abandoned, many shallow shafts were no longer of value to mining companies as bases for operations since prospecting activities were carried to greater depths. Some fatal accidents occurred when persons fell into abandoned mine shafts, and the State Government in the early 1930s made funds available to commence a programme of protection work which the Mines Department is now striving to complete. The very extensively mined goldfield of Bendigo was the first to receive attention. Under the supervision of Mr J. Rooney (who later lost his life while engaged on this work), a gang of experienced men were employed to protect shafts in the area known as the Central Bendigo and Eaglehawk Goldfield. Shafts were either filled, or covered with reinforced concrete - the method in each case being determined by the depth of the shaft. Deep shafts, and shafts which in the opinion of Mines Department geologists should be retained for future mining purposes, were covered with a 9-inch thick concrete slab.¹¹³

1930: Mining revival - New South New Moon commenced operations on the original South New Moon shaft in 1933, faced with the formidable task of unwatering the flooded workings. At first an air-lift pump lowered the water from the original level of 120 feet to 440 feet. In 12 months some 300,000,000 gallons of water were pumped from the mine. Not only was the water drawn from the Company's own lease, but also for a distance of almost seven miles along the line of reef, extending from the nearby North New Moon to the Great Southern mine just south of Bendigo. Water levels in all the old abandoned shafts along this line were also being lowered. In December 1934, multi-stage electric pumps installed in the main shaft took over from the air-lift pump and were raising water at a rate of 29,000 gallons per hour. Later additional pumps were installed, and some 2,000,000 gallons per day were pumped from the shaft. At the time of the mine's closure in 1941, the water level had been lowered to 820 feet. Most of the water pumped from this mine flowed down Napoleon Gully and Sydney Flat. A number of hydraulic sluices were thus able to operate for some time, and much old alluvial ground was re-worked.¹¹⁴

1930s: Groping for a solution to the economic problems as a depression settled over the country, governments turned hopefully back to the days of gold in search of a panacea. Gold digging provided a ready solution to mounting unemployment, and soon, the tracks to the old and dying fields re-echoed to the tramp of the digger's feet as thousands of unemployed spilled into the country ... The Age of Gold had come again; more importantly, for the tottering Bendigo Industry, the price of gold began to rise. By the mid-thirties, it was fluctuating around £8 an ounce. In an economy otherwise depressed and offering scant investment opportunity, gold-mining was once again more an attractive proposition and capital, mostly of local origin, began flowing into the mines again. By 1934, some 2,271 men were engaged locally in mining, 845 of them in quartz mining. Of the state's annual gold production of 80,723 ounces that year, 31,969 ounces were won from the Bendigo field and of that amount 26,574 ounces came from quartz mining. Mines that a few years before had been abandoned as worked out or unprofitable, were resuscitated. New companies sprang up. Shadow-companies, the inevitable concomitant of mining booms, appeared and as usual, the slicksters and the knowing filled their pockets and a trail of small investors burned their fingers. By the mid-thirties, some forty-odd mines were operating. Perhaps the most spectacular venture of the period was Bendigo Mines Ltd., a new company with strong London and New York backing. Operating four mines on the field - The Napoleon, Nell Gwynne, Carshalton and Derby mines, it made use of not only innovatory equipment but of new concepts of management and large-scale mining based on overseas experience and techniques. Unfortunately, the application of such methods and innovations to local mining conditions had been given less consideration, and investors in the company who paid some £333,000 in calls during the few short years of its operations, shared few dividends.¹¹⁵

113 Vincent, 1952

114 Perry, 1975 pp214-227

115 Cusack, 1973, pp.221-22

1930s: As previously, the strong flow of capital into established or promising mines facilitated explorations and subsequent exploitation. State and Commonwealth assistance in the late thirties served a similar purpose. Some older mines, acquiring a new lease of life, yielded attractively for some years, whilst the influx of capital led to the opening up of the mostly-neglected Sheepshead and Deborah lines in the southern part of the field. However, as had happened so often before, the presence of parasitic ventures that never returned a penny, did much to sap confidence in the Bendigo mines and the local industry as a whole suffered accordingly.¹¹⁶

1930s: Gold production in the thirties was appreciably supplemented by local alluvial mining and cyaniding. A great many hydraulic sluices were working in the Bendigo district by the mid-thirties and some 1,500 men found employment in alluvial mining. The mountains of tailings or battery sand that rose about the valley and filled houses in summer with a gritty dust, were a cyanider's dream, and in the 1930s some thirty plants, employing 300 men, were operating about Bendigo. The largest company, the Adelaide, based Devonshire Sands, paid out £3,700 in dividends in 1935.¹¹⁷

1934, Oct 25: Modern Methods - Application to Bendigo - Bendigo Mines Ltd - ...with the advent of Bendigo Mines Ltd to this field an opportunity of seeing what modern appliances and methods mean to gold mining will be afforded. This great and commendable venture, which is introducing more than £1,000,000 of capital from England, America and Australia, plans operations on a scale never attempted on this field. By Bendigo Mines Ltd's large-scale methods, Bendigo reefs are to be given a great test, and should their enterprise bring the success expected, it should mean a new era for gold mining in Bendigo. The goldfield, with its 500 miles of reefs only partly worked, offers great scope for mining in this manner. Bendigo Mines Ltd, the parent company of the new venture, has so far floated the Napoleon and Nell Gwynne Companies, and the third company, the Carshalton, is now in the course of flotation. ...The Napoleon or Glasgow line is situated 200 yards west of the Nell Gwynn anticline. In the nineties the G.G. Consolidated worked on this line, and a report of that time states that the Glasgow Company, which had worked in this locality in the early days, had obtained as much as 40 oz to the ton. In 1899 it was reported that Mr George Lansell possessed 40,000 out of the 49,000 shares of the G.G. Consolidated Company, which had made calls amounting to £53,287 and paid dividends totalling £16,537.

A real hive of industry at the moment is the new Napoleon shaft, where about 50 men are employed. A feature of the work is the shaft, one the largest ever sunk on this field. Inside the timber the shaft is 17ft 6in by 5ft 2in and provides for four compartments, two for hoisting, one for pipes and ladderways, and the other for ventilation. A machine shop has been erected at the Napoleon Mine, incorporating a carpenter's shop and electrician's shop. All tool sharpening for the group of mines under control of Bendigo Mines Ltd, will be undertaken at this main shop. Adjacent to the machine shop is the mine offices and store, while in close proximity to the shaft is a changing shed capable of accommodating 150 men... The engine house will be an all-steel structure, housing two air compressor units and a large electrical winding engine. The compressors will also be electrically operated, being of 850cfm capacity. In all phases of the operations of the new venture, electric power will be used wherever possible. This is also a new departure for the Bendigo field, where steam power has always remained a firm favourite. A direct line from the Bendigo power station has been connected to the mine, and the company is to be one of the largest consumers in this district.¹¹⁸

116 Cusack, 1973, p.222

117 Cusack, 1973, p.222

118 Bendigo Advertiser, 25 October 1934 [DMID records]

1934:

Main features for the year 1934:

1. A large amount of capital has been attracted to the Bendigo goldfield.
2. There have been exhaustive geological examinations of the areas, and bold comprehensive plans for prospecting the field, particularly the portion west of the New Chum line, by the Bendigo Mines Limited. Shafts have been commenced on the Napoleon, Carshalton, and Nell Gwynne lines of reef. Each shaft will be equipped with electrically driven machinery early in the new year.
3. With the object of prospecting and exploiting formations, 24 main shafts have been deepened, including 13 on which companies are still sinking.
4. The bulk of the gold produced was won from the Sheephead line of reef and regular returns would seem to be assured for some time.
6. The enhanced price of gold has enabled many heaps of old tailings to be re-treated at a profit.
7. Generally the mines are fairly well equipped for present needs. Some in the prospecting stage will need to reorganise their plant when results warrant it, while others are in the position to mine any reef or formation likely to be met with.
8. Several electric motor-driven pumps have been installed for the purpose of raising water from the underground workings.¹¹⁹

1935:

The result of the attack on the Nell Gwynne, Napoleon and Carshalton lines of reef by the Bendigo Mines Limited is awaited with interest. The discovery of a rich formation on one or more of these lines would open up a new era in the field. The Sheephead, the main stay of the field for several years, at one time regarded as a side line, again produced the bulk of the gold during the year. The greatest amount of activity in the district has been in the Bendigo Goldfield. A large portion of the £297,123 paid in calls was expended on plant and equipment; 50 mines were working. Several companies suspended operations, owing to their inability to collect calls made on shares. Plant and electrical equipment has been completed, and is working on the Napoleon, Carshalton, and Nell Gwynne (BML) mines. South New Moon dewatered the Garden Gully line from the Great Southern (at the south end of the field) to beyond the New Moon (at the northern end) to a depth of 580 feet below the surface at the South New Moon shaft. Prospecting and development work has been carried out ... a 10-head battery should be operating by January. A feature of the pumping operations is the low cost of power supplied by the Electricity Commission, when advantage can be taken of the night tariff. For example, the water was kept at a depth of 530 feet in the New Moon shaft for several months with one 85hp seven-stage centrifugal station pump and one 25hp single-stage sinking centrifugal pump. The pumps deliver 152,000 gals per 8 hours, using power from 10pm to 6am, at a cost of 23s daily. Though the gold content of the old battery tailing heaps is very low, a high % of recovery enabled companies and parties to win approx. 10,000ozs. of gold by cyanidation. Sebastian - South Frederick the Great sunk the main shaft 172 feet. Prospecting and development work carried out ... a 5-head battery in the course of erection. Shaft filling - The work of making old abandoned mining shafts safe was commenced in September; 76 shafts have been dealt with, at a cost of £404. Increased inspectorial duties made some assistance necessary. Mr F.J. Trewartha was appointed supervisor of prospectors and Mr J. Rooney supervisor of the work of making abandoned shafts safe.¹²⁰

119 Department of Mines Annual Report, 1934

120 Mining Surveyors' Annual Reports, 1935

- 1935:** Abandoned Mining Shafts - A grant of £2,000 was during 1935 made available to this Department by the Employment Council for the purpose of making a number of dangerous abandoned mining shafts secure. An immediate commencement was made at Bendigo, where seven men are engaged under the supervision of Inspector Wagstaff in this work, and 112 shafts have been protected at a cost of approximately £600. At other places throughout the State the work is being carried out with the valued assistance of the various municipalities. A grant to cover the estimated cost of the work is made to the municipality, and arrangements are made to carry out the work under Unemployment Relief conditions. Each group of shafts on completion of work is inspected by the district Mining Inspector. The number of shafts protected at places other than Bendigo is 103, and the estimated cost of the work £550. The nature of the protection varies according to the depth and condition of each particular shaft, one of the following methods being used:
- (1) A sill or covering of concrete reinforced with old tramway or railway rails, is placed across the shaft on a sound foundation at a little depth from the surface; the top portion is then filled in and the position of the shaft indicated by a post with notice affixed.
 - (2) A number of old tramway or railway rails are spaced across the mouth of the shaft, and in addition a timber and barbed-wire fence is erected. This method is especially suitable for shafts, which are required for ventilation purposes.
 - (3) Four or more posts of concrete, angle iron or wood are used, with several rows of barbed-wire surrounding the shaft.
 - (4) Shallow shafts, which are not likely to be again required for mining purposes, are usually filled in.
- The practice of placing logs across the shaft and covering with earth is not followed or recommended, because of the danger when the logs decay.¹²¹
- 1936:** The outstanding development of the year was by the Central Nell Gwynne Company - richness of a new reef enabled the company to attain fourth place in gold production in the State, with a yield of 4,324ozs for 8 months in 1936.¹²²
- 1936:** The work of making secure dangerous abandoned mining shafts, which was commenced in 1935, was continued during 1936. The original grant of £2,000 allotted by the Government to cover the cost of this work was supplemented by a further grant of £1,500, making a total sum of £3,500 available. At Bendigo the work is being carried out by eight men under the supervision of the District Mining Inspector, and to 31st December, 1936, 520 shafts had been made safe at a cost of £2,230. In other localities, the work is being carried out with the valued assistance of the various municipalities. A grant to cover the estimated cost is made to the municipality, and arrangements are made to carry out the work under Unemployment Relief conditions. The District Inspector of Mines inspects each group of shafts, on completion of the work. The number of shafts protected at places other than Bendigo is 252, at a cost of approximately £612.¹²³
- 1936:** Mining activities in the Bendigo district during 1936 have shown a marked improvement over 1935 ... encouraging results have been obtained in several mines, more particularly the Carshalton, Nell Gwynne, Deborah, and South New Moon. ... The Sheepshead line of reef was the largest contributor to the yield during the 12 months, the main producers being the New Red, White & Blue, Little 180, and the Central red, White & Blue. Good progress is being made with the development of the 3 main subsidiary companies of the B.M.L. group, viz: the Napoleon, Nell Gwynne, and Carshalton. A large 30-head mill has been installed at the Napoleon mine, and this mill will treat all the crushing material obtained by the group. All equipment is electrical. The South Moon Company is operating on a new system of spurs ... The Deborah Company have finished shaft sinking and after crosscutting and successfully working. A crushing mill is in the course of erection, and an efficient plant is now on the mine. The monument Hill Company is operating on large makes of low grade ore. Outside the main Bendigo goldfield, promising mines are being opened up at Sebastian. Cyanide - Approx 23 plants are operating at Bendigo, Eaglehawk, and Huntly, between 200 and 300 men employed. In December 1936, a small rush took place at Eddington, about 28 miles from Bendigo, but so far nothing sensational has been located.^{124]}

121 Department of Mines Annual Report, 1935

122 Department of Mines Annual Report, 1936

123 Department of Mines Annual Report, 1936

124 Department of Mines Annual Report, 1936

1936, Dec. 25: Bendigo's Most Modern Crushing Battery - The latest addition to the field's mining equipment is the modern 30 head mill placed in commission this week at the Napoleon unit of Bendigo Mines Limited. This mill is the most modern crushing unit in Victoria and embodies all the latest methods in crushing, being capable of crushing up to 700 tons per week. Bendigo Mines Limited, which has been the pioneer company in the greater use of electricity in mining practice, has gone a step further in utilising Yallourn power for driving this battery.¹²⁵

1936: (Summary): Cyanide Yield - Further Increase - One of the most valuable adjuncts to the mining industry on this field is the cyaniding treatment plants, which this year produced close on 10,000 oz of gold and gave employment to about 300 men. It is only in the past three years that this industry has boomed, and on present results it is apparent that there remains several years of work for many parties. Little cyaniding treatment of battery tailings was undertaken in years gone by owing to the low price ruling for gold, but at present values the small gold content, which varies on this field from 8 grs to 18grs gives a good profit, but the organisation behind the plant must be most exacting. Only two companies are operating the dumps in a big way, namely Devonshire Sands (Bendigo) Ltd and New Red White and Blue Consolidated Company. The first named company, which is an Adelaide-capitalised venture, paid £3700 in dividends last year, and followed this with the payment of £1826 to shareholders. This company treated 94,286 tons for a return of 2562 oz of gold, while New Blue Consolidated treated 44,950 tons for 825-1/2 oz of gold. The latter company has only been in operation a year and recent returns show a considerable increase. In addition to the two main companies there are about 18 private parties treating sands on various parts of the field. The following table, supplied by the Mines Department, Bendigo, shows the amount of gold won for the year ending December 16, 1936:

	<i>oz</i>	<i>dwt</i> s
Anderson and Party, Abe Lincoln	125	0
W. Bussey, Victoria Heap	420	0
W. Bussey, Ironbark Heap	480	0
Devonshire Sands -		
Devonshire, 10,308 tons	249	0
Johnson No. 3, 16,550 tons	448	12
Johnson's No. 1, 9348 tons	251	0
Kochs, 58,080 tons	1583	9
Slag	30	0
Deeble and Party	245	0
Hamley and Harris, Garden Gully United	325	0
J. Stanley, G.G. Heap	94	0
J. Stanley, Hibernia	189	10
Mr May, New Chum Railway	100	0
*New Red, White and Blue Big Blue Heap	825	11
Mr O'Halloran, Catherine	512	10
Mr O'Halloran, New Moon and Virginia	1000	0
Ruedin and Party, Lansell's 222	305	0
Ruedin and Party, Hustlers' Reef	364	0
Valli and Party, Shenandoah	100	0
Woods and Lawrence, Hustler's Cons	300	0
C. & M. Woods, Great Extended Hustler	430	0
W. Wood and Sons, Great Extended Hustler	540	0
Total	9037	15

* Note New Red White and Blue treated 44,950 tons of tailings¹²⁶

¹²⁵ Bendigo Advertiser, 25 December 1936 [DMID records]

¹²⁶ Bendigo Advertiser, ? 1937 [DMID records]

1936: (summary) Yields from Sluicers. Nearly 20 sluicing plants were erected in gullies on the Bendigo goldfield during the year, but owing to water restrictions these parties were not permitted to commence operations until September 1. On the whole, the yields have been small, but the work has employed a number of men. The Aurum Sluicing Company, operating on the Long Bully main creek obtained the best record. This company is utilising electric power for its operations, and hopes to open out on a bigger scale in the new year. Miller, Knapman and Wingrave, who have been actively engaged in sluicing in Golden Gully for many years, completed their work this year and are transferring to another location.

The following table, supplied by the Mines Department, Bendigo, shows the amount of gold won by jet sluicing plants operating on the Bendigo goldfield for the year:

	<i>oz</i>	<i>dwt</i>
Aurum Sluicing Co.	122	19
Deary and party, Dead Dog Gully	14	0
Edwards and party, Maiden Gully	15	0
Henderson and Party, Maiden Gully	15	10
Kronk and Sandry, Maiden Gully	44	0
Keck and Church		
Longoon and Party, Whitehorse Gully	30	0
Lethlean and party, Sparrowhawk Gully	40	0
Meldrum and Party, Dead Dog Gully	14	0
H.F. Miller, Kangaroo Flat	64	0
T.W. Miller, Kangaroo Flat	64	0
Miller, Knapman and Wingrave, Golden Gully	90	0
Noble and Party, Dead Dog Gully	16	0
Stringer and Party, New Zealand Gully	16	0
Taylor and Party, Crusoe Gully	40	0
Total	537	9127

1936: (summary) Prospectors' Crushings. Improved Returns: the State Batteries at Eaglehawk and Golden Square were kept occupied practically throughout the year, while the Sheepshead and Carlisle batteries also did a fair amount of public crushing.¹²⁸

1937, Feb. 26: Deborah's New Battery - the new 10-head mill of the Deborah Company was to have been given a trial run yesterday, but owing to a slight defect to the rock breaker, this was not possible.¹²⁹

1937, April 21: North Deborah. Share applications. In connection with the formation of the North Deborah Company, NL, the transfer books of the Monument Hill Consolidated and Deborah Mining Companies will close ... The program of development of the new company involves an expenditure sufficient to provide for the installation of an efficient winding plant, air compressor and equipment together with the requisite shaft sinking and cross-cutting necessary to open up and mine a number of reefs which have been proved to exist in the adjoining properties of the Deborah and Monument Hill consolidated mines.¹³⁰

127 Bendigo Advertiser, ? 1936 [DMID records]

128 Bendigo Advertiser, ? 1936 [DMID records]

129 Bendigo Advertiser, 26 Feb 1937, [DMID Records]

130 Bendigo Advertiser, 21 April 1937, [DMID Records]

1937 - 1951: Cyanidation of tailings - operations of the Gold Dumps Company. The ores mined on Bendigo and Eaglehawk goldfields are of a type from which valuable constituents can be liberated from the gangue by a comparatively coarse comminution of the ore. Stamp milling followed by plate amalgamation (a comparatively simple method of treatment), when coupled with gravity concentration of the sulphides which are of paragenetic origin, has given a sufficiently high percentage recovery to permit a continuance of mining operations with outstanding success. This method of treatment, however, has not been 100 per cent. efficacious, and has resulted in the accumulation of millions of tons of low grade residues (or tailings as they are more commonly known), the gold content of which was considered as irrecoverable prior to the discovery that gold was soluble in alkaline cyanide solutions, and that it could be precipitated from these solutions by chemical reaction with zinc. With this discovery as a beginning, methods for the recovery of gold from tailings were evolved, and the cyanidation of tailings eventually grew into the present-day commercial enterprise capable of producing profits on a moderate capital outlay. Most plants with small throughput were erected by parties of cyaniders and the better grade of re-leaching sandy materials treated with success. These parties made use of the leaching vat and rely almost entirely upon natural percolation of solutions through the material being treated, followed by the precipitation of the gold from the pregnant solutions by reaction on zinc shavings. Precipitation by using charcoal was attempted with doubtful success. The treatment of the lower grade tailings was of necessity left to the company or party possessing sufficient capital to install the machinery necessary to ensure a satisfactory throughput. Gold Dumps Pty. Ltd., which was formed in 1937, with a capital of £100,000 divided into 100,000 shares of £1, has operated continuously in Victoria for 14 years, and has pioneered the large-scale treatment of the lower grade tailings. With the experience gained in the treatment of alluvial slum at Rutherglen, Carisbrook, etc, operations at Bendigo were commenced with a specific knowledge of tried and proven flowsheets for the different classes of materials, and of the machinery required to ensure a steady, maximum plant throughput. Three plants were erected by this company in the Bendigo and Eaglehawk districts:

- 1) On the Red, White and Blue dumps at Golden Square;
- 2) On the dumps produced by the Devonshire group of mines at California Gully, Eaglehawk; and
- 3) On the New Moon Mine dumps at Sailor's Gully, Eaglehawk.

The erection of the plant at Golden Square, the plant being centrally placed to allow of the treatment of the Red, White and Blue Mine dumps, the Great Southern Mine dumps, and the current tailings produced by the North Deborah Mine No 1 treatment plant. After operating this plant for a number of years, operations were suspended early in 1949 because of low grade values and low slum content. Prior to the cessation of operations at the Golden Square plant, a similar plant was in the course of erection at the New Moon dumps, and a still larger plant at the dumps of the Devonshire group of mines, the operations of which will be briefly described. As in the case of the Golden Square plant, the additional plants were centrally placed to enable the treatment of other dumps in the locality. Process: breaking down the dumps - dumps sluiced and material collected in a sump, which is then lifted by four class J.M.S 4-inch Thompson pumps and conveyed by pipeline to the hydro-separator. A hydro-separator of the Dorr pattern is used, the material delivered to the unit being subjected to separation into a coarser material consisting chiefly of sandy particles, and a finer material which overflows with the solutions and passes to the pumping circuit for delivery to the mill section of the plant. Settling Areas - With a view to obtaining sufficient room for initial operations the free sand removed by the classifier was stacked to a height of approximately 20 feet on the east side of an elevated area to the north-west of the site of the dumps. The sands, together with all sands classified from the circuit in the future, will be placed on the areas from which the original dump materials have been removed. Treatment Plant - at the mill the pulp is fed into the first of six agitation tanks, each of which is 25 feet in diameter and 12 feet deep, and constructed of 5/8-inch welded mild steel plate. Filtering - The pulp on leaving the last of the agitation tanks is pumped to a Moore-type vacuum filter in which the solid content is separated from the solutions, and the latter allowed to pass to a Merrill-Crow precipitating unit. Precipitation and smelting, not described. Water used in the plant is obtained by pumping from the South Devonshire mine shaft ...

At this plant an average of 33 men are permanently employed on shift work ... The operations at the New Moon plant are similar to those carried out at the Devonshire plant, and differ only in connection with the unit of plant used to classify the pregnant solutions, and the positioning of the classifier for removal of sands. At this plant the whole of the dump materials are transferred to the mill where the sands are classified from the circuit and passed to settling dumps. Separation of the solids from the solutions is obtained by the use of two Oliver drum-type filters, each being 12 feet in diameter and capable of removing an average of 450 tons of solids every 24 hours.¹³¹

July 1937: Bendigo (No 2) District: Hydraulic sluicing has been carried on by about 20 parties, some of which have received Government assistance to enable them to purchase plants, and some repayments should be made when water is available for the continuance of operations. Twenty-five companies are in active operation on the Bendigo goldfield. Of this number only the Central Nell Gwynne (probably the Deborah, Monument Hill and the North Virginia are similar formations) is successfully producing from what appears to possess the structure of a saddle reef.¹³²

1937, Oct. 26: Bendigo's leading mine, fourth dividend today, Central Nell Gwynne - The year has been distinctly one of progress, and today the company ranks as one of the leading mines of the State, having distributed £9050 in dividends during the past nine months ... The success of the Central Nell Gwynne has drawn fresh attention to the possibilities which exist on the side or parallel lines of the Bendigo goldfields, which in previous revivals, have received scant attention. In Bendigo's bright days few lines of reef apart from the New Chum, Garden Gully and Hustler's lines were worked to any extent. To enable greater production the company has now completed the installation of a fine modern plant, which ranks among the best in the field. The new plant comprises a pair of steam winding engines of unique design, being the only plant in Bendigo operated by piston valves. The cylinders are of 11-inch diameter, and 48-inch stroke, with eight-foot drums, carrying two pneumatic brakes and one foot brake ... The engines were formerly installed at the Lady Nelson Mine, St Arnaud, are capable of hauling from a depth of 3000 feet. The Ingersoll Rand air compressing plant is in two units, and is capable of supplying air to 10 drills. Steam is generated by two high pressure boilers, working to 100lb. per square inch, one being a Cornish boiler and the other a multi-tubular, underfired. The whole is housed in a commodious building, the layout being such that the driver has the whole of the plant under supervision from the platform. The steel poppet legs have few equals on the field, and situated on one of the highest points in Bendigo, they now make a splendid landmark, towering 75 feet above the ground. Improvements include a new manager's office, new Blacksmith's forge, and a changing room for the men. The last-named structure gives real comfort to the men after arriving from below. In this large building is provided a wet clothes drying room, shower room (6 showers and 5 basins), a first-aid room, and a boss's room. After depositing their clothes in the drying room, the miners change into their street clothes in a well appointed room, capable of accommodating 80 miners. The whole of the design and layout was carried out by Mr. T.J.Jorgenson, engineer, the work of erection being in the hands of Mr. W. Neilson, contractor.¹³³

1937, Oct: Bendigo Mines. Voluntary Liquidation. New Company to be formed. Bendigo Mines Limited is to be placed in voluntary liquidation and anew company formed under the name of Bendigo Mines No Liability, according to the management today.¹³⁴

1937, Dec. 7: Hercules No 1 Company - New Chum shaft ... Powerful electric pumps have been installed and are working satisfactorily. A dam with a capacity of 600,000 gallons is being constructed at the 550ft level and is nearing completion. When the dam is completed the mine can be unwatered.¹³⁵

131 Mining and Geological Journal, 1951

132 Mining and Geological Journal, July 1937

133 Bendigo Advertiser, 1 Oct 1937,[DMID Records]

134 Bendigo Advertiser, 26 Oct 1937,[DMID Records]

135 Bendigo Advertiser, 7 Dec 1937,[DMID Records]

1937: (summary) [*Bendigo Advertiser* ?/?/1937] Cyaniding production. Returns doubled during the year. Many thousands of tons of battery tailings were treated by cyanide parties during the year, and this important branch of the mining industry has become one of the stable influences for the gold production of the field. For these heaps dotted around Bendigo had been considered worthless, but with the increase in the price of gold they immediately became areas of wealth, and the present activity is the greatest that has ever occurred in cyaniding in Victoria. There are now nearly 30 plants in operation on the field, and even at the present rate of treatment there is ample sand available for a few years more work. Attention has been directed principally to the older dumps raised by batteries which were not so efficient as the stamp mills of a later day. This new industry has been of great assistance in relieving unemployment, as each plant requires a fair staffing. Many of the parties who entered into the treatment of the heaps had little previous experience, but they have profited by their work, and the results being obtained today are satisfactory. Devonshire Sands (Bendigo Ltd) is the only cyaniding company tackling the heap treatment in a big way, and the results during the past year speak for themselves. The company treated 100,498 tons for a return of 3253oz. This company, financed largely by Adelaide investors, has been operating for more than two years, and this was its most successful year. The company has paid two 3d dividends, absorbing £3700. Biggest production was obtained from Koch's Pioneer heap, which treated 58,138 tons for 1927oz. The Johnson's plant treated 23,050 tons for a return of 721oz, while at the Devonshire plant 19,310 tons were treated for 603oz.

The profitable returns being obtained by private parties induced the New Blue Consolidated Company to install a plant on its own dumps, capable of treating 1000 tons per week ... O'Halloran Brothers, who have commenced cyaniding at the New Moon dump about four years ago, were the first to realise the value of the heaps and their returns from the same dump continue to be profitable. The party is now operating the Moon dump and Clarke's dump, and last year recovered 840oz. The Great Extended Hustler's dump is returning splendid returns to the members of the Woods family, who have considerably increased their plant in the last 18 months. ... Following table shows principal heaps - Devonshire Sands Ltd; Deeble and party (Rae's dump); F. Goldsmith (Virginia dump); Hibernia dump; H. May (New Chum Railway); O'Halloran & party (New Moon); O'Halloran and Hicks (Catherine); Ruedin & Timewell (Hustler's and Redan); J. Stanley (G.G. heap); W. Bussey (Victoria Consol); W. Woods (Great Extended Hustler's); C & M Woods: Woods and party (Hustlers Reef); A. Andersen and Kennedy (Abe Lincoln); New Red White and Blue .¹³⁶

1937, Dec. 14: Mushroom Culture in Disused Mine Tunnels in Bendigo - Old mine tunnels on New Blue Hill, which once were the scene of good gold production, are now being used as maturing plots for mushrooms. The promoters of this new industry, Messrs George Burnham and Leonard Rogers, scan their plots carefully each day now... The idea of scientifically growing mushrooms is not a new one, but it is the first time in Australia that old mining workings have been used for the purpose... Mr Burnham has studied mushroom growing for many years, and has had good results with experiments in the open. His present plots are the largest yet undertaken by him, and he intends utilising 1000 feet of the tunnels for his plantation... Should the experiments prove successful, steak and mushrooms will be a delicacy Bendigo people will be able to enjoy all the year round.¹³⁷

136 Bendigo Advertiser, ?/?/1937, [DMID Records]

137 Bendigo Advertiser, 14 December 1937 [DMID records]

1938:

Increase of 6,646oz in year's returns; The best since 1923. The Bendigo goldfield maintained its high place on the gold production list for Victoria in 1937 by producing 45,913oz., which is an increase of 6646 oz. on the previous year. A big feature in the increased production was the fact that gold won by companies increased from 19,390oz. to 25,608oz. Mine such as the Central Nell Gwynne, Deborah, South New Moon, and Carshalton, which were on the verge of steady production at the commencement of the year, showed fine increases. The field's best producer was Central Nell Gwynne, with a return of 5409oz., which enabled it to distribute £7500 in dividends and pay of liabilities for machinery and battery equipment to the extent of £25,000. The company's future looms bright, as it has already declared a dividend for 1938. Companies increased their production to a greater extent with the provision of extra crushing equipment, the field now having the capacity of 220 head of stamps. The companies' tonnage was 138,049 compared with 86,840 for 1936 ... New companies to appear on the dividend list were Deborah and New Blue, but the total showed a slight decrease in comparison with 1936. The Bendigo Mines Limited venture did not meet with the success anticipated, and two of the large units ceased operations recently. The large-scale methods adopted, with expensive surface equipment and thorough exploration of the ground opened up, proved too costly for the low-grade ore obtained in the new areas developed. Central Nell Gwynne - Two years ago the large reef was discovered at 820 feet, and since then extensive development has been given to the ore body down to 920ft With its reef definitely proved, the directors set about installing modern machinery and an efficient crushing mill to enable increased production. This year the whole plan was completed with new winding equipment, new poppet legs, changing sheds, and a fine 20-head crushing mill of the latest design. South New Moon Company ... was formed in 1871, and had a precarious existence for many years, having to seek Government assistance on occasions to keep the wheels turning. Deborah maintained grade of 6.2dwt per ton for year ... Until the additional reserves are proved it is not the attention of the directors to add a further 10-head of stamps to the present crushing unit. The Sheepshead line ... operations been somewhat disappointing .. The mine with the brightest prospects is the North Blue ... New Blue Consolidated was the only dividend payer of the group ... Central Blue after considerable work at 440ft and 480 ft ... found the values were unpayable ... Little 180 ceased work at its higher levels this year, and concentrated attention on the fault reef at 1078ft ... Hercules Company had its most profitable year for many years ... Hercules No 1 ... installation of the electric pumps with Government assistance at the New Chum shaft ... Ironbark South good prospects did not materialise ... Ironbark has been giving attention mostly to testing the cap and legstone of the old reef at 1119ft. Napoleon line - Napoleon (BML) one of the principal units of the powerful Bendigo Mines Limited group, did not come up to expectations ... operations were suspended towards the end of the year. The plant on this unit was one of the most extensive on the field, and provided for operations on a larger scale than had hitherto been attempted in Bendigo. Deborah line - Monument Hill Consolidated is working the Deborah anticline down to depths of 1200 feet ... North Deborah recently commenced operations on the Deborah anticline. Paddy's line - South Virginia was the principal company working on this line for this year ... North Virginia after an extensive period of development on the 450 ft reef south, now concentrating work in the eastern country ... Virginia South Extended ... operations now concentrated on sinking a prospecting shaft. Carshalton line - Operating on the southern extension of the Carshalton line, Carshalton (BML) was the most successful of the Bendigo Milnes Limited group and is still in production. ... New Prince of Wales closed down during the year. Big Hill - not worked continuously through the year. Nell Gwynne Mine - one of the units of the Bendigo Mines Limited, ceased operations recently, and the directors of the Central Nell Gwynne Company have been negotiating for the acquisition of the present equipment and lease with a view to operating the country opened up. Employees in mines - Number to be 703 ... The numbers of men working underground and engaged on the surface are - New Chum Syncline 21; South New Moon 60; Carshalton (BML) 54; Napoleon 40; Nell Gwynne 35; Central Nell Gwynne 80; Deborah 50; North Deborah 11; South Frederick the Great 12; South Red white and Blue 16; Monument Hill 37; Central Napoleon 7; North Virginia 12; Hercules No 1 16; South Ironbark 16; Hercules 16; Ironbark 19; South Virginia 16; Virginia Extended 16; New Red White and Blue 74; North Red White and Blue 41; Central Red White and Blue 20; Little 180 16; North Nell Gwynne 18; Big Hill 6. Cyanide yield - Evidence of the importance of the cyanide industry in Bendigo's gold production was revealed in the fine yield from this source estimated at 10,000oz. The principal producer was Devonshire Sands Pty Ltd, which treated 104,533 tons for a return of 2684oz. The company principally financed by Adelaide capital, operated on the Kochs, Johnson's Reef and Devonshire heaps ... The New Blue Consolidated Company was in active production throughout the year in treating its own dumps, and obtained 692oz from 37,700 tons ... In all, about 30 heaps are being operated on the field, many private parties making good profits ... Several of the dumps from old

workings on the outskirts of the field, such as at Epsom, White Hills and Kangaroo Flat, have proved payable.

Hydraulic sluicers were handicapped during the year owing to the scarcity of water supplies. Several parties operated on old gullies early in the year, but the yields were small. Covering of old shafts - Since the Government made available grants 1935 for the covering of shafts of a dangerous nature at Bendigo, 814 have been completed at a cost of £3493/12/1 and during this year 398 shafts have been completed and made safe ... cost of £1629/8/1. This work is of national importance, and should be continued till every shaft is made secure. Prospectors' crushings - Due to greater activity in the mining industry and the increased employment offering in the cyaniding industry the ranks of the prospectors were further decreased during the year. The State batteries at Golden Square and Eaglehawk did a fair amount of crushing. The Sheepshead and United Crushing Co. were also well occupied in crushing for prospectors ...[also] ...Carlisle battery crushed for public.¹³⁸

1937: Mining operations on the Bendigo field have met with varying results during the past year. Mines such as the Central Nell Gwynne, Deborah, South New Moon, and South Virginia have realised expectations and are now producing with every probability of further successes. Prominent among companies, which have not fared so well is the B.M.L. group, comprising Carshalton, Napoleon, and Nell Gwynne. These mines, in spite of the expenditure of much capital, failed to prove remunerative, and two of the companies concerned have now suspended operations. Other companies which have not survived include the New Prince of Wales, Virginia South Extended, and South Frederick the Great. Approx. 30 cyanide plants, employing about 300 men, have been operating at Bendigo, Eaglehawk, Huntly, Fosterville, and Sebastian. Shaft filling - The work of making secure dangerous abandoned mining shafts, which was commenced in 1935, was continued during 1937. The original grant of £2,000 allotted by the Government to cover the cost of this work was supplemented by a further grant of £3,300, making a total sum of £5,300 available. At Bendigo the work is being carried out by five men under the supervision of the District Mining Inspector, and to 31st December, 1937, 900 shafts had been made safe at a cost of £3,800. In other localities, the work is being carried out with the assistance of the various municipalities. A grant to cover the estimated cost is made to the municipality, and arrangements are made to carry out the work under Unemployment Relief conditions. Each group of shafts is inspected, on completion of the work, by the District Inspector of Mines. The number of shafts protected at places other than Bendigo is 400, at a cost of approximately £1,000.¹³⁹

Jan 1938: Mines such as the Central Nell Gwynne, Deborah, South New Moon, and South Virginia have realised expectations, and are now producing with every probability of further success. A few mines, notably the B.M.L. group, comprising the Carshalton, Napoleon, and Nell Gwynne, after the expenditure of much capital, failed to prove remunerative, and these companies have now practically suspended operations. Other companies that have not survived include the New Prince of Wales, Virginia South Extended, and South Frederick the Great.¹⁴⁰

1938, April 29: Future of New Red White and Blue Probable liquidation. Assets of the Company - There is the likelihood of Bendigo's oldest mine - the New Blue - ceasing operations after more than 75 years of fine productive work on the Sheepshead line. The Big Blue, as it has been familiarly called has paid dividends amounting to £6/3/6 per share for capital of 33/- which has few equals on the Bendigo goldfield throughout its history. With its fine plant and extensive workings, the New Blue has been an excellent producer, and its probable passing as a result of a disastrous fire on April 15 would end a definite link with the old quartz mining days of the field. Few plants on the field were more complete than the New Blue Consolidated, as it possessed its own electric generating plant, unexcelled pumping excellent, a 30-head battery, winding equipment capable of working to nearly 3,000 feet, two compressors, and other detailed equipment In addition is possessed three shafts well equipped for the exploration of the Sheepshead line in its southern extremity for several hundred yards along the line ... The plant was considerably damaged but there are certain portions which could be reconditioned for future use. In addition the poppet legs at the main shaft are intact, and the concentrating tables are also in good order ...¹⁴¹

138 Bendigo Advertiser, ?/?/1938, [DMID Records]

139 Department of Mines Annual Report, 1937

140 Mining and Geological Journal, Jan 1938

141 Bendigo Advertiser, 29 April, 1938, [DMID Records]

- July 1938:** Approx. 30 cyanide treatment plants are operating at Bendigo, Eaglehawk, Epsom, Huntly, Fosterville, and Sebastian. Government assistance provided from joint State and Commonwealth funds has been availed on by many companies, the money allocation being in most cases for dewatering and shaft sinking. Bendigo Goldfield - 25 operating quartz mines have, from 6th Dec 1937 to 4th June 1938, treated 57,857 tons of ore for 12,147oz of gold, as compared with 77,484 tons for 11,912ozs. for the proceeding half-year ... The lines of reef represented in the gold production are - Nell Gwynne, 4333oz; Deborah, 3,2237oz; Sheepshead, 2,416oz; and Garden Gully (South New Moon), 1,276oz ... The outlook for the Bendigo field has not been more reassuring during the previous 25 years than at present.¹⁴²
- 1938:** Bendigo District - Work on abandoned shafts has been continued and while dangerous deep shafts have been sealed with concrete slabs, others are being filled in by sustenance labour through local councils.¹⁴³
- 1939:** Bendigo District - 4 men were constantly employed in filling or concreting dangerous shafts in various parts of the district, and approximately 1,400 have now been made safe.¹⁴⁴
- late 1930s:** Twenty-five mines were operating on the field in 1938 and the District Geologist reported that the outlook had not been 'more reassuring during the previous twenty-five years' [*Mining and Geological Journal*, July 1938], and as 1938 gave way to 1939, the promise continued. That year seven mines paid out £116,105 in dividends. The twenty-odd cyaniding plants were obtaining 'payable returns' and all in all 'the outlook for the future [was] very encouraging'. But as had happened twenty five years before, indirectly the fate of the industry was being sealed by events rapidly reaching a climax half-the-world away¹⁴⁵
- 1939:** Bendigo (No 2) District: The number of mines operating in this district is smaller but ore and gold production has advanced. Bendigo and Eaglehawk Banks during November purchase 4,950oz of gold, which is a record monthly return since the revival of mining in the district some eight years ago. The 22 companies working employ approx. 700 men and disburse £150,000 annually in wages. The Central Nell Gwynne, Deborah, New Chum Syncline, and South Virginia Companies are paying dividends and the New Red, White and Blue is making a return of capital. There are many hydraulic sluicing plants in the district. Cyanide plants at Bendigo, Eaglehawk, Ironbark, Huntly, Sebastian, Fosterville and Marong are giving in most cases payable results. Devonshire Sands (Bendigo) Ltd is mechanising its large cyanide plants with the object of doubling outputs. It is expected that the new pontoon vats, each holding 112 cubic yards of sand, will be emptied by motor-driven scoops in about two hours. The old 60-ton vats are being cleared with the aid of Elevator belts. Bendigo goldfields - 15 companies are actively engaged in quartz mining on the Bendigo Goldfield. Of these 4 appear on the dividend list, five are regularly payable, and 6 are on the call list. The dividend paying mines are situated on the Nell Gwynne, Deborah, and Paddy's Gully anticlines ... the contributing companies being the Central Nell Gwynne, Deborah, New Chum Synclines and South Virginia.¹⁴⁶
- 1939:** Bendigo District - Payable reefs were opened up on the Central Nell Gwynne, Deborah, Ironbark South, New Chum Syncline, North Deborah and South Virginia mines, enabling the companies to make substantial dividend payments, which, together with the amount paid by the Sheepshead Company, totalled £116,105 for the year. Cyanide plants were active throughout the district.¹⁴⁷

142 Mining and Geological Journal, July 1938
 143 Department of Mines Annual Report, 1938
 144 Department of Mines Annual Report, 1939
 145 Cusack, 1973, p.223
 146 Mining and Geological Journal, Jan 1939
 147 Department of Mines Annual Report, 1939

- 1939-45:** The years of the war had wrought deep, if not immediately apparent changes in the local scene. War had a decline in the gold industry during the previous war but eventually, the industry recovered. Once again it had been almost phased out but this time there was to be no recovery. The effects were less obvious at first. During 1940 at least half-a-dozen of the older mines reopened and fourteen initiated shaft-sinking programs aimed at discovering new reefs ... That year £285,049 were paid in dividends and the North Deborah, the Deborah and the Central Nell Gwynne were three of the top half-dozen dividend producers in the state. In March 1941 the Mining Inspector at Bendigo reported some thirty-odd mines operating on the field with local mining 'showing marked improvement during the last six months.' Eight more mines opened, most of them on the new lines of reef - The Nell Gwynne, The Deborah and the Sheepshead. Twenty of the thirty five mines active on the field were on these reefs and a further even on the Carshalton ... However, by 1942 the effects of the war began to be felt. It was the beginning of the end. Nine mines closed that year and they continued to do so in steady procession.¹⁴⁸
- 1940:** The mining industry in this district had a most profitable year during 1940, and the gold yield and dividend distribution was the best for some time. Of the 35 companies operating on the Bendigo field at the end of the year, fifteen were undertaking important work by shaft sinking. The lines of reef receiving particular attention are the Deborah, on which nine miles are situated, and the Carshalton on which there are seven. Seven companies appeared on the 1940 dividend list - North Deborah £92,800; Deborah, £79,300; Central Nell Gwynne, £65,000; Ironbark South, £25,311; South Virginia, £6,000; Ironbark, £4,138; Sheepshead, £2,500. The total for the field was £275,049, or nearly half the total for the whole State. Cyanide plants in all parts of the district have been working continuously. Shaft filling - The work of securing abandoned mine shafts was continued until 21 December, when the total treated on the Bendigo field had reached 1,598.¹⁴⁹
- 1941:** Bendigo District - A reduction in the scale of operations occurred during the year with the closing down of nine mines, which were in a prospecting stage. Of those engaged in shaft sinking at the close of 1940, a number have since completed their programs and six only are now on this work. Seven companies appear on the 1941 dividend list:
 North Deborah - £100,800
 Deborah - £36,600
 Central Nell Gwynne - £32,500
 Ironbark South - £18,708
 Hercules - £4,360
 Ironbark - £3,103
 Sheepshead - £625¹⁵⁰
- 1942:** Bendigo District - The year 1942 showed a marked decline in gold mining in the Bendigo district with the closing down of no fewer than 24 companies owing to the shortage of manpower, scarcity of materials and inability to collect calls. A number of these companies ceased work without developing by cross-cutting after sinking their main shafts. Of the 8 mines now working, five are producing on a reduced scale and 3 are being kept unwatered. Dividends paid during the year amounted to £89,768 and were as follows:
 North Deborah - £81,600
 Deborah - £6,100
 Ironbark - £2,608
 Shaft filling - A number of dangerous mining shafts were made secure by covering with concrete slabs or filled.
 All cyanide plants have ceased operations.¹⁵¹

148 Cusack, 1973, p.224

149 Department of Mines Annual Report, 1940

150 Department of Mines Annual Report, 1941

151 Department of Mines Annual Report, 1942

- 1943:** Marked falling off during 1943 owing to restricted operations due to the shortage of labour, the Deborah and Central Deborah being the only two regular producers. Development work at South Deborah, Central Deborah and Ironbark South was carried on. Shaft filling - The work of making secure dangerous abandoned shafts was continued throughout the year. Thirteen shafts were made safe at Bendigo, making a total of 1,656 shafts protected on the field to date. A number of shafts in other districts received similar attention in the same period.¹⁵²
- 1944:** Mining operations in the Bendigo district for the past year showed a slight decline on the previous year. Gold production was 10,191ozs. from 24,124 tons of ore. North Deborah produced more than half the total, with 6,749ozs from 12,733 tons crushed. Other returns were:
 Deborah - 3,150 oz. from 9,887 tons
 Central Deborah - 302ozs from 768 tons
 South Deborah 77oz. from 476 tons
 Ironbark South 83oz. from 370 tons.
 South Deborah ceased operations in October and at present only four mines are producing. Central Nell Gwynne and Hercules have been kept unwatered, and Ironbark plant has supplied Ironbark South with compressed air, the latter having no air compressor. For the fourth year in succession, a surplus of dividends over calls were disclosed, chiefly as a result of continued profit earning by the North Deborah mine. Total dividends paid £53,100, while calls were £17,638, dividends being paid - North Deborah £38,400; Deborah £12,200, Monument Hill consolidated £2,500. The prospects of a revival of the mining industry appear bright when normal conditions return. 24 mines, which have suspended operations, have plants intact ready to resume. Hydraulic sluicing has ceased in the district. Two cyanide plants operating on the Virginia and South New Moon dumps are working with greatly reduced staffs.¹⁵³
- 1945:** Bendigo District - Five dangerous shafts have been secured during the term, making a total of 1,672 on the Bendigo field.¹⁵⁴
- 1946:** The return to normal conditions on the Bendigo goldfield was retarded seriously by such factors as the shortage of skilled labour, shortage of materials and high cost of production. Despite these difficulties some good results were obtained on the Deborah line of reef and the North Deborah Mining Company NL was third on the 1946 gold production list with a yield of 9,531ozs from 14,644 tons. Sixth on the list was the Central Deborah G M NL with a yield of 5,657oz. from 11,038 tons of stone. Other producing mines on the line were the Deborah and South Deborah, the latter being worked by tributers. For the first time in five years shaft sinking was resumed on the Bendigo field at the North Deborah, Central Deborah, Ironbark, Hercules, and South Virginia mines. Operations were hampered by the shortage of explosives and shaft timber. Nine mines which reopened during the year after closure for a considerable period were - Deborah Consolidated, Deborah Associated, Deborah United, Deborah Extended, Golden Carshalton, Nell Gwynne Reefs, New Chum, South Virginia and East Clarence. Two of these, the Deborah United and Nell Gwynne Reefs later suspended operations and work ceased at the North Nell Gwynne. A winding engine was installed at the South Deborah, but work was then confined to periodical baling. Hydraulic sluicing increased during the year and 10 cyanide plants were at work. The largest of these was operated by Gold Dumps Pty Ltd on the New Red, White and Blue dump. Approx. 400 men are engaged on mining in the district. State cyanide treatment plants - These did not operate during the year. Owing mainly to the lack of use during the war years, the galvanised vats belonging to these plants deteriorated to such an extent as to be unusable. As soon as the necessary materials are available it is proposed to recommission these plants.¹⁵⁵

152 Department of Mines Annual Report, 1943
 153 Department of Mines Annual Report, 1944
 154 Department of Mines Annual Report, 1945
 155 Department of Mines Annual Report, 1946

- post WW2:** When the war ended a return to normal in the industry was retarded, according to Bolitho, the local Mining Inspector, by 'several factors - the high cost of production, shortage of materials and of skilled labour' [March 1941]. The shortage of manpower, particularly of shaftmen and engine drivers, seriously hampered further development and made full production impossible for most of the mines. At £30 a foot for a four-compartment shaft, sinking costs had more than doubled since pre-war days. At the same time, since no shaft-sinking had been undertaken for years, its recommencement was essential if the field were to re-establish itself. The pegged price of gold was, of course, at the heart of the problem but there were other factors militating against a full recover of the field. A general post-war shortage of manpower had sent wages sky-rocketing. In any mining community the pool of skilled labour is a comparatively small one. During the war years recruitment and the drift to more remunerative work in munitions and other wartime employment as the mines closed, led to its drying up.¹⁵⁶
- March 1947:** The return of normal conditions on the Bendigo Goldfield has been retarded by several factors, including the high cost of production, the shortage of material, and the shortage of skilled labour. For the first time in five years shaft sinking was resumed on the Bendigo field at the North Deborah, Central Deborah, Ironbark, Hercules and South Virginia mines. These operations were hampered by a shortage of explosives and shaft timber, and it has been found that sinking costs have more than doubled since pre-war years. Nine mines which re-opened during the year after having been idle for a considerable period were the Deborah Consolidated, Deborah Associated, Deborah United, Deborah Extended, Golden Carshalton, Nell Gwynne Reefs, New Chum Syncline, South Virginia and East Clarence mines. Two of these, the Deborah United and Nell Gwynne Reefs mines have again suspended operations, and work has ceased at the North Nell Gwynne. Ten cyanide plants are operating, the largest being that of Gold Dumps Pty. Ltd., situated on the New Red, White and Blue tailings dump. This company has secured additional dumps estimated to contain over a million tons, and it is proposed to transfer treatment plant to Bendigo from Llanberis and Carisbrook. Approx. 500 men are engaged in mining throughout the district.¹⁵⁷
- Sept 1947:** Bendigo District - During the term six mines have suspended operations, leaving twelve in operation. The North Deborah mine, principal mine on the field, and the third in the State's gold production list for last year, has passed the half-million pound mark in its payment of dividends. Four companies are at present shaft sinking. They are the Nell Gwynne Reef, Central Nell Gwynne, North Virginia and Central Deborah companies. Extensive plant is being erected at Sailor's Gully by Gold Dumps Pty Ltd in order to treat by the cyanide process the various dumps in the locality. Later, a similar plant is to be erected at Devonshire Gully. The cost of the two plants is estimated at £20,000. A party of prospectors is erecting a 5-head battery at Sedwick near the old Great Eastern mine and has obtained favourable prospects.¹⁵⁸
- 1947:** In 1947 sinking was commenced in several mines and during that year nine mines reopened. It was a last deceptive flicker. High hopes were held of a revival with the lifting, at the beginning of the year, of the restrictions imposed on the sale of shares as a wartime measure. However, investors had their sights trained on other objectives. The effect was soon apparent on Bendigo. Six mines closed during 1947, leaving only twelve still operating and a mere three in regular production.¹⁵⁹

156 Cusack, 1973, p.224

157 Mining and Geological Journal, March 1947

158 Mining and Geological Journal, Sept 1947

159 Cusack, 1973, pp. 224-5

- 1947:** At present there are 11 companies engaged in active operations on the field, and many have found it difficult to maintain full operations because of a continued shortage of skilled labour and especially of shaftmen and engine-drivers. Four companies engaged in shaft sinking are the Deborah, Central Nell Gwynne, Nell Gwynne Reef, and North Virginia. The North Deborah, Central Deborah and South Virginia companies have completed their shaft-sinking programs for the present and have commenced exploration to open up new zones. The North Deborah continues to hold pride of place as the principal mine on the Bendigo field and one of the State's leading gold-producers ... A steam driven compound air compressor was installed in the mine together with a first motion winding engine with 24-in cylinders. It is the largest on the field and one of the largest in the State. 14,200 tons/ 8901ozs./£51,200. Considerable attention has been directed to the Nell Gwynne line of reef owing to improved prospects being obtained at the New Chum Syncline Mine. The North Nell Gwynne Company is driving a western crosscut. The North Virginia shaft is being deepened. The Central Deborah company ... is now concentrating on developmental work. The South Deborah mine, attention on the shallow-ground formations. At the Central Nell Gwynne, shaft sinking was continued. Gold Dumps Pty Ltd has operated continuously on the Big Blue dump ... The company has erected extensive plant at Sailor's Gully to treat the large dumps of the old New Moon, South New Moon and Virginia mines¹⁶⁰
- 1948:** Bendigo District - Several dangerous shafts have been secured.¹⁶¹
- March 1948:** Gold Dumps Pty Ltd has operated continuously on the Big Blue Dump, treating 600 tons daily. The Company has erected extensive plant at Sailor's Gully to treat the large dumps of the old New Moon, South New Moon and Virginia mines. This plant is treating 500 tons daily, and a similar plant is soon to be erected at Devonshire Gully. Other cyanide plants have been operating almost continuously, the largest being that of Messrs Nation & Bussey on the old Victoria Consols dump.¹⁶²
- Sept 1948:** Eleven companies are still operating on the Bendigo field ... The North Deborah continues as the major mine, and has maintained regular production ... The Central Deborah and the New Chum Syncline mine, have had intermittent crushings ... Of the four companies shaft sinking, three of them, the Nell Gwynne Reefs, Central Nell Gwynne and North Virginia will shortly complete their present programs and then will be in position to develop the ground through crosscutting. The fourth company - the Deborah - will continue sinking. At the South Deborah, North Nell Gwynne, Hercules and South Virginia mines, prospecting is being carried out with reduced staffs. Gold Dumps Pty Ltd cyanide plants at Golden Square and Sailor's Gully have been treating tailings continuously and a third plant is now being erected at Devonshire Gully. Several other smaller plants are also operating.¹⁶³
- 1948:** Mining activities in the Bendigo district showed a decline ... The North Deborah mine remains the principal producer - 13,935 tons/7960ozs/£38,400 dividends. Calls made by mining companies were again heavy and amounted to £83,241 compared to £80,786 for the previous year. Three companies, the Nell Gwynne Reef, Central Nell Gwynne, and North Virginia, have completed their present programs of shaft sinking ... At the South Deborah mine, prospecting operations have been carried out. The Deborah company is engaged in shaft-sinking ... The Central Deborah Company has almost exhausted its ore resources ... The North Nell Gwynne Company is engaged in cutting down ... The New Chum Syncline Company have carried out developmental work ... Work at the South Virginia Mine has chiefly been confined to prospecting ... Of the twelve operating mines in the Bendigo district, ten are being assisted by Government grants.¹⁶⁴

160 Department of Mines Annual Report, 1947

161 Department of Mines Annual Report, 1948

162 Mining and Geological Journal, March 1948

163 Mining and Geological Journal, Sept 1948

164 Department of Mines Annual Report, 1948

- 1948-9:** Mining costs rose sharply in 1948 and continued doing so, making it almost impossible for call-paying mines to carry out any sustained program of shaft-sinking. In some instances, governmental assistance was secured but it was no more than an ameliorative. Only the North Deborah, destined to be the last in the roll-call of great Bendigo mines, remained a steady producer. By 1949, those left were reeling under the impact of continually rising costs. Financial support froze as they strove frantically, yet vainly to discover payable values. In the desperate attempt to survive, staffs were cut to a minimum and explorative programs curtailed. Even the increased price of gold arising from the devaluation of the pound sterling in 1949 did little to alleviate their plight. By the early fifties the three Deborahs were the only mines left working.¹⁶⁵
- March 1949:** The cyanidation of low-valued stamp battery residues, hitherto thought to be of little commercial value, has been accelerated by the installation of three large-scale, continuous process agitation cyanidation plants by the Gold Dumps Pty Ltd. Two of these plants were working steadily throughout the period, and the third will commence operations shortly.¹⁶⁶
- Sept 1949:** Cyanidation plants have been in active operation, including the large plant of Gold Dumps Pty Ltd ... The South Deborah and North Virginia mines have now closed down.¹⁶⁷
- 1949:** The Nell Gwynne Reefs, Central Nell Gwynne and North Virginia Companies, all of which completed shaft-sinking programs at their mines during 1948, failed to locate payable reefs ... and operations were suspended. The South Deborah and New Chum Syncline Companies suspended operations after persevering with a lengthy policy of development of known reefs. The large scale agitation cyanidation plant erected by the Gold Dumps Co. at Devonshire Gully commenced operations and is working satisfactorily. Shaft filling - Disused mining shafts in several localities within the inspectorate were made safe, one contractor losing his life whilst engaged on this work.¹⁶⁸
- 1950:** The period of comparative inactivity through which the gold mining industry has been passing during the past few years continued during 1950. Of the companies, which were assisted by the State Government in 1949, and embarked on shaft-sinking and development programs at new or existing levels, not one company has located an appreciable quantity of payable ore. This fact, when coupled with the decrease in the amount of financial support given to some of these companies, brought about the cessation of operations at the Hercules, Deborah and South Virginia mines. This leaves only four companies operating at Bendigo ... The North Deborah was the only company able to maintain a regular production of payable ore - 17,651 tons/8,565ozs/£45,600 dividends. Other production figures were:
 Central Deborah mine - 1537 tons/578ozs.
 Deborah mine - 308 tons/148ozs.
 South Virginia mine - 2059 tons/403ozs.
 The Central Deborah Company, which is developing the North Deborah formations, has not been able to locate any quantity of payable ore. The Deborah mine ceased operations on 7th April, 1950, and the mine and the machinery was purchased by the North Deborah Company, as a base for handling of underground water and development of unprospected reef formations. New brickmaking companies are erecting plants at Bendigo and Inglewood. Shaft filling - The filling, covering and otherwise protecting of old abandoned mine shafts continued, and long-range plans have been put in operation to deal with several thousand shafts in certain areas.¹⁶⁹

165 Cusack, 1973, p.225

166 Mining and Geological Journal, March 1949

167 Mining and Geological Journal, Sept 1949

168 Department of Mines Annual Report, 1949

169 Department of Mines Annual Report, 1950

1950s: By the 1950s the days when local prosperity was assessed in terms of the mining industry, were past. Diminishing yields, spiralling costs and declining dividends spelled out the inevitable. The industry was in its death throes. Great mountains of battery sand still rose impressively above the twisting streets of Eaglehawk, and skeletal poppet-legs still dominated the city skyline but now they were an obituary. Youngsters played unchecked about the rusting equipment; frogs croaked in the shrinking slum-dams; swallows skimmed and dipped about abandoned shafts and deserted engine-rooms. Once the pride of local foundries and mine-managements, boilers and engines were sold to be dismantled and carted away, or broken up for scrap or left rusting where they stood. The batteries were silent, the stamps were still. Only the North Deborah, the Deborah and the Central Deborah mines remained in production. Across the vast plateaux of sand stretching northward to Eaglehawk for miles, not a single mine-whistle wailed. decay soon began to trace itself along the hilly streets of Ironbark and California Gully and Long Gully that once had throbbled to the roar of the richest mines in the land. The Hustlers, the New Chum, the Great Southern, the Garden Gully, the Virginia and the Victoria Quartz - the great and shining names in the story of local gold - were already being forgotten. Miners' jargon began to disappear from the bar of the Rose of Australia and the British and American. In the ward of the local Hospital especially reserved for them, men still lay spitting the grey quartz-dust from their lungs but gradually, the number of ashen-faces phthisis-victims shuffling the streets grew fewer. Claiming the lives of a thousand miners over the decades, 'the white death' had, however, reaped a rich harvest..¹⁷⁰

March 1950: The increased price of gold rising from the devaluation of the pound sterling has been heavily offset as a stimulus to the industry by the sharp rise in the costs of materials and the steady upward trend in the costs of labour. The Nell Gwynne Reefs, Central Nell Gwynne and North Virginia companies, all of which completed shaft-sinking programs at their mines during 1948, failed to locate payable reefs at the new levels, and operations were suspended. Work was also suspended at the South Deborah and New Chum Syncline mines after a lengthy policy of development. There are now only seven companies operating in this Inspectorate. The North Deborah mine, an outstanding gold producer in recent years, continued to treat approx. 750 tons of ore fortnightly for an average of 9dwt. per ton. 16,541 tons were treated for a yield of 8,140ozs. of gold and dividends amounting to £25,600 were paid. At the South Virginia mine development drives were extended ... The Central Deborah Company extended west crosscuts at 3 new levels ... The shaft at the North Nell Gwynne mine ... was deepened. The large scale agitation cyanidation plant erected by Gold Dumps Pty Ltd at Devonshire Gully commenced operations and is working satisfactorily..¹⁷¹

Sept 1950: Making Old Mine Shafts Safe - Recently an interesting experiment was carried out in the Stawell district in the mass filling of old mine shafts. On the area adjacent to what is known as "Big Hill" near the township of Stawell are a large number of old mine shafts ranging in depth from a few feet to over 1200ft ... in most cases open to water level. A preliminary survey ... disclosed that there were 58 of these shafts, in an area of approx. 34 acres. Mr Phillips, in his report, estimated that the cost entailed in using a bulldozer to fill these shafts would be about £1,035. It was decided that 6 of the shafts, which were over 1,000ft in depth, and which the Gold Mines of Australia and the Mines Departments' geologists considered may be required in any future mining schemes should be protected with concrete covers and the other 52 shafts filled ... work was commenced on the project on 23rd June, and was completed on 6th July, when a total of 53 shafts had been filled. In order to guard to some extent against future subsidence, the debris was piled about 6 feet above the site of each shaft. Note - Since the report was written an unfortunate accident occurred in which a young boy received a fractured spine and other injuries. Investigation showed that the filling in one of the shafts had subsided approx. 70 feet, leaving a raised embankment around the collar of the shaft. It appears that the boy had run up this embankment and had fallen into the shaft where he remained for some hours before his plight was known..¹⁷²

170 Cusack, 1973, pp.226-7

171 Mining and Geological Journal, March 1950

172 Mining and Geological Journal, Sept 1950

1951: The profits earned by some Bendigo mining companies declined sharply, even though regular production of ore of average value was maintained. The decrease in profits was due to the fact that the officially pegged gold price remained static while costs of material, equipment and labour were rising steeply and continuously. Thus, capital investment was not encouraged, and the immediate future of the mining industry in the Bendigo district does not appear bright. Four companies operated throughout the year on the development of known reefs, while the North Deborah and Central Deborah were the only companies maintaining regular production of payable ores, the average grade being 11dwt and 9dwt per ton respectively. Cyanidation of low-grade stamp-battery residues by the Gold Dumps Company at Eaglehawk was continuous. The Throughput was increased towards the close of the year by the installation of new plant. Some difficulties were experienced because of the varying % of sand and slime. A limited amount of ground was sluiced, with payable results, by Messrs Rigby and Sons at Eaglehawk.¹⁷³

Sept 1952: Shaft-Filling Campaign Shows Results - Forever mindful of the dangers to the general public inherent in unprotected mine shafts, the Mines Department, by intensification of its efforts and adaptation of modern earth-moving equipment to this essential work, can now report that definite progress is being made towards the ultimate elimination of this source of danger. Mining of gold-bearing quartz in Victoria began in the early 1850s, and the effects of the unparalleled growth of the industry in the ensuing years, when little or no effective control could be exercised over operations, has for many decades been clearly manifest in the large number of comparatively shallow unprotected shafts which are still found in the different mining districts. Following upon the formation of the Department of Mines, in 1863, the mining industry came under Government control, and this control has resulted in a set of regulations which to-day eliminate the possibility of adding to the number of unprotected mine shafts. Regulations for Protection of Shafts - The Mines Act of 1890, and all Mining Acts subsequent to this, provide that all abandoned shafts must be securely covered, and require that any person or company sinking a shaft or working in an existing shaft must deposit a sum of money with the Mines Department as an interest-bearing guarantee that the shaft would be adequately protected in case mining operations should be suspended. If the depositor carries out his obligations satisfactorily, the guarantee-money is refunded, otherwise it is forfeited and used to cover the costs of protecting the shaft. To ensure that deposits are sufficient to pay for the expenses of protection work, a scale of charges, based on the surface area of the shafts, has been drawn up, with allowance being made for variations of material and labour costs. Whilst these regulations effectively control current mining operations, thousands of comparatively shallow shafts near residential sections of towns which owe their existence to the discovery of gold, remain a potential danger. Program for Shaft-Protection - After being abandoned, many shallow shafts were no longer of value to mining companies as bases for operations since prospecting activities were carried to greater depths. Some fatal accidents occurred when persons fell into abandoned mine shafts, and the State Government in the early 1930s made funds available to commence a program of protection work which the Mines Department is now striving to complete. The very extensively mined goldfield of Bendigo was the first to receive attention. Under the supervision of Mr J. Rooney (who later lost his life while engaged on this work), a gang of experienced men were employed to protect shafts in the area known as the Central Bendigo and Eaglehawk Goldfield. Shafts were either filled, or covered with reinforced concrete - the method in each case being determined by the depth of the shaft. Deep shafts, and shafts which in the opinion of Mines Department geologists should be retained for future mining purposes, were covered with a 9-inch thick concrete slab. These methods proved costly, and after completion of the work in the Central Area, lack of funds forced the Mines Department to dispense with the regular services of the shaft-filling team. Subsequently only those shafts which were reported as unsafe by the public, and those considered to be dangerous by the Mines Department, were filled or covered or fenced in. The work was done by contract labour, but it was difficult to find contractors for this dangerous work, and progress was very slow. A successful experiment was, however, carried out in June and July, 1950, in the Stawell district where a contractor, using a large bulldozer, filled 52 shafts within a fortnight, at the moderate cost of £1,035. Mines Department Bullgrader at Work - To complete, in the interests of public safety, the important tasks of protecting abandoned mine shafts, the Minister of Mines approved the purchase of a bulldozer as a shaft-filling unit through the Mines Department, and an order was placed in November, 1950. The unit, consisting of a crawler-tractor and a bullgrader, was delivered in September, 1951.

The 'International' tractor, Model TD 14 A, has a four-cylinder motor that can be fuelled either by petrol or diesel-oil, which ensures an easy start in all weather conditions. The tractor is fitted with a bullgrader, Type Armstrong-Holland, 14 WG, its 12 feet long, hydraulically operated blade making it possible to dig material for filling where dump material is not available. Trial operations began in the Stawell district, and after service at Ararat, Maldon, Castlemaine and Chewton, the unit reached Bendigo in December, 1951. The Bendigo and Eaglehawk Goldfield has an area of 25 square miles and contains several parallel lines of reef most of which have been worked to shallow depths in selected areas over the full length of the field. The shaft-protecting work in the Central Area has been completed, but much of the remaining area awaits treatment. Most of the area is overgrown by scrub and timber; it is therefore necessary to zone the area so that a comprehensive search can be conducted to ensure that no shaft is missed. Results of initial operations at Bendigo and other centres have exceeded expectations, particularly from the economic point of view. Over a typical period of three months, the grader operated at 72% of its potential working time; only 13% was lost on repairs and maintenance. During this time 717 shafts were filled, that is, nearly 14 shafts per working day. Work at Bendigo will continue until all shafts within a reasonable radius of the Central Area have been treated. The unit will then be transferred to other centres where shafts must be filled.¹⁷⁴

1952: At the beginning of the year five companies and two syndicates were actively engaged in mining, but at the end of the year only three companies were operating. The North Nell Gwynne Company suspended operations because of unfavourable prospects, and the Gold Dumps Company, which was engaged in the cyanidation of stamp-battery residues, had to close down because of falling off in slum content and gold values. Of the two companies producing ore at the end of the year, the Central Deborah Company had a small measure of success owing to a gradual increase in tonnages milled as stoping bases became available. The North Deborah Company, However, had difficulty in maintaining ore production of an average grade, and was forced to reduce the number of employees by about 60%, leaving only a skeleton staff. Shaft filling - The crawler-tractor and bullgrader, acquired for the purpose of filling-in dangerous abandoned mine shafts, continued its work and good progress is being made. For the year, the bullgrader filled in approximately 2,300 shafts.¹⁷⁵

1953: Suspension of operations by the Central Deborah and North Deborah gold mining companies towards the close of the year. By agreement with miners the properties of the two companies were let on tribute. Shaft filling - Bendigo Inspectorate - throughout the year the Mines Department bulldozer was operated continuously in a number of mining districts throughout Victoria, and 4,267 shafts were filled. Since December 1951, when the bulldozer reached the Bendigo Inspectorate, 6931 shafts have been filled.¹⁷⁶

1953-4: The Deborah mines struggled on, vainly trying to balance rising costs and falling yields against a fixed gold price, until towards the end of 1953, when the Central Deborah ceased operations, and both it and the North Deborah Mine were handed over to tributers. In its comparatively brief span of seventeen years as a producing mine, the North Deborah had yielded 128,091 ounces of gold and paid £686,200 in dividends. Tributers continued working the two mines until mid-November 1954. On 16 November the North Deborah ceased working and the following day at the Central Deborah the last cage was wound up, the last shift ambled away and 103 years of continuous mining in the Bendigo Valley came to an end. Some 22,500,000 ounces of gold had been won and £12,000,000 had been paid in dividends. A week later Prime Minister Menzies announced that Royal Assent had been given the Gold Mining Industry Assistance Act. For Bendigo it came too late.¹⁷⁷

174 Vincent, 1952

175 Department of Mines Annual Report, 1952

176 Department of Mines Annual Report, 1953

177 Cusack, 1973, pp.226-7

- 1954:** After 103 years of continuous production, gold mining at Bendigo ceased altogether late in the year when the North Deborah and Central Deborah companies suspended operations. During the year mines were worked by tributers who received 40% of the gross proceeds of gold won. But, whilst the return to the tributers was above miners' wages, the companies were unable to meet overhead expenses and the costs of operating the mining and treatment plants. The inability to meet expenses can be attributed to lack of equipment with which to pump underground water, lack of finance with which to carry out development work, particularly shaft sinking, and the rising costs of materials and labour which were not offset by increases in returns from gold won. Shaft filling - during the year the Mines Department's bulldozer was engaged on the work of filling in abandoned mine shafts in several districts. The number of shafts attended to was 2,979, bringing the total filled in to 9,910.¹⁷⁸
- 1955:** Shaft filling and covering - This work is under the direct control of the Senior Inspector of Mines, Mr F. Vincent, and approximately 1832 shafts were filled in while a number which were considered to be of potential value for future mining, on the advice of the Geological Branch were protected with reinforced concrete covers.¹⁷⁹
- 1956-7:** During 1956, shaft filling continued... Castlemaine and Maldon areas. Towards the close of the year the old unit was replaced with a new dozer of similar type and size. At the end of 1957 approximately 19,000 shafts had been filled with these two units and a considerable number of the deeper and more difficult shafts have been secured by means of reinforced-concrete covers.¹⁸⁰
- 1959:** Shaft Filling Program - The total filled by the two units was...3,860 for the year. In addition to shaft filling, the units have also been used for preparing sites for the big drilling rig and for cleaning up after holes have been completed.¹⁸¹
- 1960-61:** Reclamation at Bendigo - G.J. Medwell replaced the late F.C. Chambers on the Reclamation Committee and work has been commenced on a reclamation scheme for the Deborah sand dump in Breen Street. Another reclamation scheme is in progress on the Garibaldi-North Old Chum dumps and the Unity dump in Bennett Street. Bendigo Telecasters BCV8 have occupied the levelled off dump in Lily Street, formerly occupied by the Lazarus shaft. Steady progress is being made in the filling in of abandoned mining shafts - approximately 43,364 were filled in by the end of 1961. The operating costs of this work are inevitably rising because the remaining shafts are more widely scattered. In recent years the two bulldozers employed on the project require to be moved more frequently by means of low-loader.¹⁸²
- 1962-3:** Shaft filling program continued and during the year (1963) 7,820 shafts were filled in. Since 1951 when the first shaft filling unit was acquired 51,660 shafts have been filled in.¹⁸³

178 Department of Mines Annual Report, 1954
 179 Department of Mines Annual Report, 1955
 180 Department of Mines Annual Report, 1956-7
 181 Department of Mines Annual Report, 1959
 182 Department of Mines Annual Report, 1960-61
 183 Department of Mines Annual Report, 1962-3

1964: Two bulldozers were employed during the year on filling abandoned mining shafts and excavations existing on other than private land. Four thousand, seven hundred and thirty-seven shafts were filled during the year, bringing the total of shafts filled to 55,903 since the first bulldozer was purchased in 1951. In addition, concrete covers were placed on thirteen shafts considered to have further utility should a mining revival occur, bringing the total of shafts so covered to 639. Shaft filling was interrupted by the employment of bulldozers on moving the Department's large Emsco GD 250 water boring rig and on levelling a play ground site at the Golden Square High School. At the present rate of progress, completion of filling of known shafts will require a further three years, and will be extended by other abandoned mining areas which are being progressively reported. With the expansion of country towns, pressure by municipal councils to rehabilitate surface mining excavations and disposal dumps on Crown land is being experienced and appears to be a responsibility appropriate to the Mines Department. The speed of filling dangerous abandoned shafts is not entirely reassuring and justifies the employment of an additional bulldozer and the allocation of additional funds for its operation. State Batteries - ...Crushings at Bendigo, Bright, Maldon and Rutherglen yielded 109 ounces of gold and 18-1/2 cwt of tin concentrates from 132 tons crushed. The number of battery establishments is being reduced to conform to the longer distances over which ore may be transported by motor truck on modern highways.¹⁸⁴

1965: Two bulldozers continued to be used on filling abandoned mining shafts and excavations existing on other than private land. In all, 7,460 shafts were filled bringing the total to 63,363 ... In addition one concrete cover was placed on a shaft considered to be a future potential utility. State Batteries - The number of batteries has been progressively reduced, it being decided to maintain seven batteries in first class running order ... These batteries will be located at Bendigo, Bright, Egerton, Maldon, Rutherglen, Creswick and Wedderburn. Painting of the battery buildings is in progress.¹⁸⁵

1966: One of the Department's two D6 Caterpillar bulldozers was continuously employed in filling abandoned mine shafts on Crown land and also on private land at the owner's expense ... The statistical proportion is:

	<i>During 1966</i>	<i>Total to date</i>
Shafts filled	7,531	70,894
Concrete covers placed	2	642

At the present rate of progress, the filling of all dangerous abandoned shafts on Crown land will be completed within four years. Consideration is now being given to extending work to the reclamation of Crown land spoiled by past mining, where such land exists in the vicinity of the State's main mining towns and is potentially of acceptable rateable value, or is of utility to the municipality concerned. State Batteries: Battery treatment service to prospectors was continuing. The decision to reduce the number of batteries to plant located at Bendigo, Bright, Egerton, Maldon, Rutherglen, Creswick, and Wedderburn was progressed by dismantling batteries at other centres and returning useable parts to stores at Bendigo and Chewton for future servicing of retained plants.¹⁸⁶

1967: Number of shafts filled for the year was 9,621 bringing the total to 80,515, since the first bulldozer was purchased in 1951. In addition, concrete covers were placed over two shafts in the Bendigo District, and raised the total of shafts to be so protected to 644. Many shafts on Crown lands, in the more isolated areas of the State, remain to be filled. The responsibility for the protection and filling of shafts on private land rests with the landowner. The Department is prepared to fill such shafts at a charge of £12 per hour for the use of the bulldozer. Local municipal authorities have power, under the Local Government Act (Section 602), to compel private landowners to fence or make secure dangerous places on their land.¹⁸⁷

184 Department of Mines Annual Report, 1964

185 Department of Mines Annual Report, 1965

186 Department of Mines Annual Report, 1966

187 Department of Mines Annual Report, 1967

1968: Work continued during the year on filling of abandoned mine shafts on Crown Land. One of the Department's two D6 bulldozers is used exclusively on this work and the other is likewise except when it is required for the drilling branch ... Chain mesh fencing and concrete covering were used to protect a few shafts. A further 8,943 were filled, to bring the total so far dealt with to 89,458. The table shows the areas in which most of the activity was concentrated.

District	No of shafts filled
Steiglitz	676
Stanley-Beechworth	7,588
Benalla	41
Talbot-Mt Glasgow	141
Bright-Wandiligong	407
Whroo	46

Reclamation: Scattered throughout the State are many areas of land which are covered with unsightly dumps as a result of past mining activities. The material in some of these dumps is valuable for roadmaking and similar purposes and removal is permitted under tailing licenses. Most mullock, however is valueless except as filling. Into this category fall a number of dumps located within the built-up areas in some country towns that prevent the use of what could otherwise be valuable land. For the last dozen years or so, considerable areas of such land have been reclaimed by the municipal councils in Ballarat, Bendigo and Eaglehawk. During 1868 the Government decided that in future it would allocate funds for land reclamation in those cases where action was recommended by the Mines Department. As a result of discussions between officers of the Lands Department and the Mines Department, the existing Reclamation committees in Ballarat, Bendigo and Eaglehawk were enlarged. New Committees were constituted in Sebastopol, Daylesford, Maryborough, Castlemaine and Stawell. In general, Reclamation Committees in each district consisted of the District Inspector of Mines, District Surveyor, District Lands Officer and the Shire Engineer. The Mining Branch prepared a scheme, which detailed the procedure to be followed by municipalities, which desire to reclaim spoiled land. The scheme requires that the Council forward a comprehensive report to the Reclamation Committee. After studying the report, the Reclamation Committee then forwards a copy with its own recommendations to the Mines Department. The Mines Department decides what work is to be done, obtains Treasury's approval and authorises the Council to call public tenders. The Committee considers the tenders and authorises the Council to proceed if a tender is considered acceptable. The work is supervised jointly by the Committee and the State Mining Engineer, and the reclaimed land is disposed of by the Department of Lands under the provision of the Lands Act. As at the end of 1868, two councils have elected to reclaim land under the scheme. These are the city of Bendigo and the Borough of Sebastopol. The City of Bendigo prepared plans and specifications for reclamation of 21.5 acres in the Long Gully area, involving the shifting, levelling and compaction of approximately 68,000 cu. yards of material within the site ... The Bendigo area will ultimately be used for industrial development and the Sebastopol area will be sub-divided for residential use.¹⁸⁸

1969: Shaft filling: a further 9,311 abandoned shafts were filled during the year, bringing the total now filled by the Department to 98,769. One bulldozer was employed almost full time on this work, in the Beechworth and Stanley areas. Another bulldozer was used for similar work in other parts of the State, mostly Gippsland. Reclamation: Further progress has been made with the scheme for reclaiming areas affected by mining. The Kent Street, Sebastopol area has been substantially completed. Work continued on another section of the Long Gully area in Bendigo. Approval was given for reclaiming the Wray Reserve in Ballarat. It will be used as a site to build flats for elderly people. The California Gully area near Eaglehawk will also be reclaimed and the land sold for establishment of a new factory by Stafford-Ellinson.¹⁸⁹

188 Department of Mines Annual Report, 1968

189 Department of Mines Annual Report, 1969

- 1970:** The work of filling abandoned shafts continued during the year. One bulldozer was employed full time and another at odd times when not needed for drilling work. Most shaft filling was done in the Beechworth and Stanely area, at Murrumgee and Gapstead and in the valley of the Buckland River. The Total of shafts filled since the project was commenced is 107,449. In the Eaglehawk district, 25 acres of land was reclaimed and sold to a Melbourne clothing manufacturer to establish a new industry ... Work continued at Long Gully in Bendigo. In addition to the Bendigo, Ballart and Eaglehawk reclamation Committees, new committees have been formed in the shires of Strathfieldsaye, Marong, Castlemaine and Stawell ... Other committees will be formed as the need arises. Total funds spent on restoration to date is about \$50,000. Application for alienation of Crown Land in the former mining towns was examined. In most cases no mining interests were affected, however in a few cases compromise solutions were agreed upon.¹⁹⁰
- 1972:** Shaft filling and reclamation - One of the Department's bulldozers was employed in filling dangerous shafts in the Daylesford area during the whole of 1972. The other machine partly for the Drilling Branch and partly on shaft filling in the Bendigo, Maryborough and Beechworth areas. It was also used to make several of the sand dumps in Bendigo safe. Work continued at Long Gully under the sponsorship of the Bendigo Reclamation Committee and the whole of the area will have been reclaimed by the end of 1973.¹⁹¹
- 1973:** Shaft filling and reclamation - The shaft filling program continued during the year but was hampered by machinery breakdowns and inclement weather. A total of 1728 shafts were filled in the Bendigo inspectorate. Reclamation of the Virginia and Hicks Street areas in the Borough of Eaglehawk was completed in 1973. The third stage of the Havilah Road-Wood Street project at Bendigo was almost completed. Work commenced on the Birds Reef area in the Shire of Strathfieldsaye and only drainage and levelling work remains to be done.¹⁹²
- 1974:** Shaft filling and reclamation - Three thousand five hundred and twenty-eight shafts were filled during 1974. Many were in isolated locations. The purchase of a new D5 caterpillar dozer will improve effectiveness next year. One concrete cap was poured, two permanent fences erected and many subsidences visited and reported on. The Department was involved in the following reclamation schemes during the year. Reclamation of sand dumps is being carried out as removals take place. 1. Borough of Eaglehawk; reclamation program on the Virginia and Hicks Street area. A grant for \$80,000 has been made by the State Government to this project. 2. Bendigo City Council; reclamation commenced on the 1st and 2nd stages of the Bennett Street Project. 3. Shire of Strathfieldsaye; Birds Reef area. Work was completed.¹⁹³
- 1975:** The shaft filling program continued during the year, but was hampered by mechanical troubles with the prime mover. A total of four shafts were capped in the Bendigo district and a further 11 shafts filled. Borough of Eaglehawk; reclamation meeting was held during the year. Emphasis was placed on the Virginia Area and Hicks Street Area. A special grant of \$80,000 was granted for Virginia Area and Hicks Street, the tender of J.W.Brook for drainage, kerb and channel, footpaths, pavement etc. was recommended for acceptance. Truscott Reserve reclamation was discussed, also Tariff and Farnsworth Street Area. These projects are to be considered. Bendigo City Council: reclamation is nearing completion on Stage 1 of Bennett Street program was tendered to W.K.West at \$34865. Stage 2 was almost completed, the sand being sold for royalties. Sowing of rye grass over this area was carried out in conjunction with Soil Conservation Authority. Maryborough City; the committee awaits details from the City Engineer on a number of matters. Marong Shire; a reclamation meeting was held to discuss a site in Kangaroo Flat. It is proposed to push this matter in 1976 so that re-levelling of the area can be carried out. A vast amount of reclamation carried out by Departmental bulldozers in the Chum and Thistle Street sand heaps. This area is a very large despoiled section, which will require considerable attention.¹⁹⁴

190 Department of Mines Annual Report, 1970
 191 Department of Mines Annual Report, 1972
 192 Department of Mines Annual Report, 1973
 193 Department of Mines Annual Report, 1974
 194 Department of Mines Annual Report, 1975

1976: Very little shaft filling and reclamation work was carried out during the year largely due to the lack of funds and the termination of the bulldozer drivers services.¹⁹⁵

KORONG HISTORICAL NOTES

History: Kingower - The 'Blanche Barkly', which is the third largest nugget to be found in Victoria, weighing 1,743 ounces, was dug up seven miles from Inglewood at Kingower ... the discovery of the massive 60lb. nugget 'Hand of Faith' which was found at the rear of the old Kingower schoolhouse.¹

History: Rheola goldfield is famous for the discovery of many finds. The 'Precious', the Viscount Canterbury' and the 'Kum Tow' to name three, came from the diggings at Rheola. The 'Precious' was Victoria' fourth largest nugget, weighted at 1,717 ounces.²

1851: Stuart Mill – Rostrons. The first record of gold discovery in this area was contained in a report in a local paper during the rushes of 1861, which said that gold was found at the head of the Carapooee Creek in 1851, at what was correctly called Withersdean, and was reported at the time to the authorities by James Campbell of Stathfillan. After this there was no record of gold discovery in the area until 1856, when gold was found at Stuart Mill and there was a rush four miles from Rostron's Tottington station. There were two applications for rewards for the discovery of gold at Rostron's, for the diggings situated at the head of Reedy Creek and Sandy Creek. A party of Italians were the original discoverers of gold in the alluvial hills at Stuart Mill, and worked there in 1859-1860. Sequence of discoveries as follows:

- 1851 Gold discovered at Withersdean, head of Carapooee Creek
- 1856 Gold discovered at Stuart Mill and rush four miles from Rostron's Tottington station
- 1859 Gold discovered by a party of Italians in the alluvial hills at Stuart Mill
- 1861 In April 1861 Matthew Gabriel and Michael Higgins registered the first alluvial claim in the alluvial hills at Stuart Mill (near Sanderson's Teddington Station) ... in May Samuel Fyffe opened the Greenock Reef, the first of many to be discovered ... Andrew Stranger, in June 1861, got the first gold on the site of Stuart Mill, and caused a rush in July, at which 4000 diggers opened up seven alluvial gullies. The original town after the rush was called Albert Town, and was re-named Stuart Mill in about April 1863. After the opening of the alluvial at Stuart Mill, a number of new reefs were opened and the town became a reefing one.
- 1863 Sandy Creek was rushed
- 1864 In May 1864 there was a rush to a place called (after the Governor) Darling Flat, on Reedy Creek, near Rostron's, about four miles north of Navarre. This was soon deserted, but good gold was struck in August
- 1867 In April 1867 two diggers named Galbraith and Edgar prospected what was known as 'Avon Diggings', near Rostrons Station. ... The Queen Mary Diggings, near Avon, were opened in 1867.
- 1870 There began a new series of rushes, following discoveries of new ground on Sandy Creek in April and Middle Creek in October. Gold was also discovered in John Bull Creek
- 1871 In 1871 a new goldfield called Fowler's Lead started south of the old one at Sandy Creek, and a small village that started was called Canterbury.
- 1873 About the last rush ... (in Stuart Mill-Rostrons area) ... was to Wattle Flat near Rostron's in 1873.³

1852: Wedderburn (Korong). This goldfield, bordering the Mallee, was apparently discovered by a shepherd named Brady, at David Peters' Torpichen station, it was said on 10 May 1852 ... The first discovery was at Welshman's Point ... The first official report from the Bendigo Commissioners Camp of the Korong discovery was on 12 July 1852, and Asst. Commissioner Gilbert was sent there with a party on 18 July. He went with Squatter Lockart Morton to Mount Korong, to Peter's Station and then to the site of Wedderburn, where twelve holes had been dug and the place called 'Disappointment Gully'. He went to the Avoca Forest near Fenton's and then returned to Bookey's station near Sunday Morning Hill, at 'Koi Yoor'. Near here six holes had been dug and gold found at what was later called Garibaldi Goldfield, but was then known as Buggins Flat. A large number of diggers from Bendigo were prospecting the area about Korong. The opening of Golden Gully by Brady and the South Australian party in May 1852 was followed by the discovery of nuggets in Queen's Gully, about three miles up the Main Flat, by Joseph Norris and party; Steele's Gully gold was discovered, Brady opened the upper Main Flat and had a hand in the discovery of Nursery Gully ... These nuggets, mostly from Queen's Gully, where a seven pound piece was dug out, caused a rush of about 6000 to Korong in October 1852.⁴

1 Alan M Nixon, 1982, Inglewood Gold, p19-20
 2 Alan M Nixon, 1982, Inglewood Gold, p19-20
 3 James Flett, 1979, The History Of Gold Discovery in Victoria, pp448-451
 4 James Flett, 1979, The History Of Gold Discovery in Victoria, pp282-286

1852: Wedderburn Goldfields - It may be safely asserted that gold was first obtained on what was then the Korong Goldfield in 1852. The exact date of the discovery of payable gold cannot now be ascertained but it was in the latter part of August, or the beginning of September 1852 (As Flett points this is not correct. The discovery was known at the Bendigo Camp in July 1852. Cullen, Adams, Higgs and White who received the reward for discovering the field gave the date of the discovery as May 1852) It is said that ... (a shepherd) ... Brady picked up gold near his hut but there is no proof of the fact. But whilst looking after his sheep, Brady found gold in the 'cement' at Welshman's Point, and also at Queen's Gully. Brady had little time to prospect whilst shepherding, so having met with a party of four South Australians who were looking for 'likely country' to prospect, he advised them to try in or near the places where he had found gold. The South Australians went to work at Golden Gully, one mile south of Wedderburn Police Camp, and soon got payable gold. ... Some two or three weeks after the discovery of payable gold at Golden Gully, three other South Australians joined the party ... The second party did not remain long as they were on their way to Adelaide. They, however, obtained some nice nuggets, which they showed to a party from Adelaide whom they met near Mt. William. The third party of South Australians consisted of nine men known to all the old residents of the district. Some of them remained and never left the district from 1852 to the present time. The party contained three brothers - T.W. Cosh, J.G. Cosh, and W W Cosh, Peter Frazer, Z.W Perryman, W White and V.T. Eldridge ... [Before this party arrived, the fame of Korong had reached other goldfields and a rush had fairly set in. There were probably four hundred people on the field and many more were arriving daily, although a goodly number were also leaving. Brady ... was the first to get gold on the Main Flat ... and ... in Nursery Gully, in December 1852. The first person to get payable gold in Queen's Gully was said to be Joseph Norris.⁵

1852 to 1855: The population of the Korong Goldfield continued to increase from the middle of September 1852 to the middle of December when the population was between six and seven thousand. It then decreased until June 1853 when there were no more than a hundred men on the field. From June 1853 to Jan 1855 there was very little rain and consequently, very little water for trying the wash-dirt. The population varied from a hundred to three hundred during this time and work was mostly confined to the four principal gullies, viz. Golden Gully, Queen's Gully, Nursery Gully and Steel's Gully, and the upper portions of the Main Flat.⁶

1852/53 to 1880s: Specimen Hill Reef. The first reef opened or prospected on Korong was the Specimen Hill Reef. This reef is situated about one mile north of the Post Office, Wedderburn. Specimens of quartz and gold were often picked up on the surface on this hill as early as 1852 and '53 but no one attempted to try the reef until:

June 1853	John Kerr and his mate sunk a round shaft to a depth of 30 feet. They struck the reef at that depth and got golden quartz from which they obtained a few ounces of gold by breaking the quartz with the poll-ends of the picks ... they abandoned the ground to try their luck elsewhere.
Late 1853	John McClelland and Hector Hetherington - abandoned before striking the reef.
Early 1854	Messrs Thomas and William Tatchell - got payable gold near surface.
May 1854	Taken up by Benjamin Jones who rigged a kind of primitive mill worked by horse-power - averaged six ounces to the ton.
1856	Adjoining ground to Jones taken up by William Jones, William Kirkhouse and Bodicum. About 16 feet from the surface William Jones and party struck very good golden stone, some of which gave as much as fifty ounces per ton, and a great rush set in on the reef and claims were taken up for fully half-a-mile along the course of the reef. The run of gold struck by Jones and party dipped to the south, and each succeeding party along the line had to sink deeper to catch the run of gold. It got poorer the further south it was followed; but several claims succeeded in getting payable gold ... run of gold was passed through at 70 feet in Jones and party claim.
1856 to 1859	The reef was vacant ... then it was taken up by a party principally composed of Germans. This party got fair prospects in the reef but as they had no means with which to erect machinery, they amalgamated with Messrs Tenny and Clarke who were erecting machinery on the Campbell's Reef. In 1860 the machinery on Campbell's Reef was finished and some stone crushed from Specimen Hill, but it fell far short of what was expected and soon after, the claim and the plant on Campbell's Reef were sold to the Lane's Reef Company.
1860	Lane's Reef Co. erected whim and worked reef for some 8 months.
Late 1861	Lane's Reef Co. was wound up and all their leases, including Specimen Hill were sold with their plant, the purchasers being Messrs J R Gray and Simon Walter - were unsuccessful.

⁵ J.R Gray, 1888 (edited by Frank Cusack in 1981), pp15-16

⁶ J.R Gray, 1888 (edited by Frank Cusack in 1981), p.17

1861-1870s Reef tried unsuccessfully by various parties, culminating with the claim being acquired by a syndicate of Melbourne men who floated it into a public company ... Crushing, pumping and winding plants were erected ... and a shaft continued to a depth of 171 feet ... After 12 months the company was wound up and plant sold off and removed.⁷ [Specimen Hill Company in early 1870s].

1853: Wehla-Jordans Goldfield. Gold was first discovered at Wehla Goldfield sometime in 1853, but the first record of gold digging in the area was 'Jordan's Rush' in April 1857, sequence of gold discoveries as follows:

April 1857 Jordans Rush and almost immediately the area over the hill further north, at what the diggers called Jericho, was rushed. It was a small field, but in parts very rich, and there was a wild rush of about 5000 diggers.

1858 Quartz reefs were discovered at the end of 1858.

1860 307 ounce nugget found in Skippers Gully.

1864 By 1864 Jericho was 'a Cousin Jack town of respectable dimensions'. It was surveyed and sold in 1866 and became known as Wehla. Some large nuggets were found there.

1872 Wilton and Party discovered the 'Spondulix' nugget, 155 oz. at Eureka Gully, between Berlin and Wehla.

1878 Rush when Chinese found gold near Collins' paddock between Berlin and Wehla.

1890s Another rush when a deep lead was discovered on the east side of the town.⁸

April 1853: McIntyre's Diggings. These goldfields (McIntyre's-Rheola-Orville) spread out along the north-south road between Kingower and Mt. Moliagul ... originally opened by diggers from Korong soon after the discovery of gold at Moliagul at the end of 1852. Kingower Diggings began in the spring of 1853, but what became known as McIntyre's Wet Diggings, about seven miles south of Kingower, was almost certainly opened before this, and a newspaper note in April 1853 read - 'A large number of diggers at McIntyre's, and said to be doing tolerably well.' A notice in the *Herald* in 22 July 1854 said 'Parties' are doing well at McIntyre's Two-Mile Hut, about seven miles from here (Kingower), on Moliagul Road. These are the 'Old McIntyre Diggings', very wet, with a granite bottom and requiring chain pumps.' The 'Old McIntyre Diggings' suggest, as a number of vague, early reports do also, that the place has been worked since 1853, if not earlier. A note in June 1855 said that 800 ounces of gold had been found in a chain of nuggets in shallow sinkings at McIntyre's, but otherwise the field, which Fraser's survey, Jan 1856, shows as about a mile of workings along the Orville Creek at what was later St. John's Patch, received little attention until some large nuggets were found in 1857 - sequence of discovery as follows:

Feb 1857 288 ounces.

March 1857 801 ounces found in a small neck of gully leading from the Granite Hill to the old Wet Sinkings (almost certainly No. 2 gully, one of three or four coming down from the high hills on the west side of the road).

May 1857 large gold specimen weighing 1848 ounce, and another of 1284 ounces, on top of the main hill at McIntyre's, in what was later called the Matrix Reef ... also large nugget found in No. 3 Gully.

1858 - Rheola - latter site of Berlin Field

These discoveries brought a large population to McIntyre's, other places were opened in the vicinity, and the area about two miles north of the station, then as later called Rheola was prospected. Bonnar and party in 1858 sank holes without result in what was later called Clelland's Gully, and in the following year Paper Gully, an eastern tributary of Rheola Flat, was opened. The first and only gold workings on Berlin Flat was the Man-o-War Rush in 1861, and it was seven years before this field was opened.

1868: Berlin Diggings

The original discovery of what the discoverer called Byr Lyn, but which the diggers immediately called Berlin, was the opening of Clelland's Gully by Alexander Clelland on 21 August 1868, from which he received an official reward of £100. Mr Know Orme, the warden, wrote to the Secretary of Mines about the opening of the Berlin field - 'The Berlin diggings are distant about twelve miles westward of Inglewood, and four from Kingower, and are on Kingdaraa Creek, which flows into the Loddon after a course of about twenty miles. The population of the 15th instant about 400. The sinking is from two to four feet, and the gold is found most irregularly and at most uncertain depths, viz., from an inch or two to about four feet. Clelland's Gully runs east and west and gold has been obtained here for about three-eighths of a mile in length, and, on the average about fifty or sixty feet in width at present.

⁷ J.R Gray, 1888 (edited by Frank Cusack in 1981), pp24-30

⁸ James Flett, 1979, *The History Of Gold Discovery in Victoria*, pp299

- Fortunate Gully runs nearly north and south, and gold has been found there for about a quarter of a mile in length by a breadth of about forty feet at present. Clelland found a 60-oz. nugget in his first shaft at Berlin, and John Catto, with Dennis Courtney, opened Fortunate Gully, which was rushed on about 19 September. These events were followed by the opening of:
- October 1868 Powers Gully (SSW of Berlin), Gilmour's Gully (north of Clellands). Large nuggets were found in each and there were soon 2000 men on the field.
- Dec 1868 Christmas Flat, near McIntyre's station, was opened, Langham's Flat soon after, and the rush spread to the main flats in Catto's and John's paddocks, between Clelland's Gully and Langham Flat. Between Clelland's discovery and the end of December 1868, 340 nuggets from 440 oz. down to one oz. were unearthed.
- March 1869 The rush spread to the area north of Christmas Flat known as Tyler's, where William Tyler, an old Warwickshire man, had kept a hotel since 1853, and Berlin rush thereafter was often referred to as **Tyler's Rush**. In 1869 or thereabouts there were rushes to Humbug Hills, south of the station, and near Orville Creek.
- 1868-73 Reports from Berlin Rush were mostly in the nature of long lists of large nuggets. (eg. 'Viscount Canterbury' 1114 oz. 'Viscountess of Canterbury' 912 oz. - both in John's Paddock)
- Jan 1871 Ah Chang and party discovered the largest piece of gold found at Berlin the Precious Nugget - 1717 oz gross weight. After 1871 the nuggets became scarcer, and the rush slowly declined to 400 diggers in 1874. The first of a series of gold discoveries began east of the McIntyre's-Berlin road in December 1874. They are as follows:
- Dec 1874 Rush about a half-mile south of Christmas Flat ... This was known as the **Hard Hill Rush** and declined in June 1875.
- Sept 1875 Moonlight Hill rushed (South-east of Guy's Rush), and later in the month '2nd Hill', further removed from Moonlight was discovered. Soon after this Possum Hill, that became the main centre of the rushes, was opened ... The discovery took place less than a mile north-east of McIntyre's, good gold was found, and the rush, known as **Orville Rush** attracted thousands, spreading from the old Hard Hills at McIntyre's (worked 1859-61) east through Possum Hill, Moonlight Hill to Billy the Mailman's Hill, and was pegged nearly to Irishtown. By May 1876 there was 'an immense spread of calico', many stores, and twenty-eight licensed hotels on the rush.
- 1876 Morgan's and Harrop's Hills, Long Gully, One Speck Hill, Gibraltar Hill, and McGee's. By the end of 1876 the 5000-odd population had shrunk to 200.
- 1878 Another rush to the Berlin Hard Hills
- 1879 Opening of lead known as Wait & Hope, but was then called **Lamont's Rush**. There was also a rush at this time to Potter's Gully, near John Goss' land.
- 1884 Guy's Rush was prospected by Kish Guy.⁹
- Sept 1853:** Kingower Goldfield. Kingower goldfield, one of the richest nugget fields in the State, was discovered by Captain John G. Mechoski (called Mechoski) in August or September 1853, after his discovery of Tarrangower goldfield in June that year. He had a party of eleven hired men ... The diggings at Mt Moliagul and Korong had been open nearly a year when Kingower field, on the road between the two places, was discovered. Commissioner Bull ... on 19 December 1853, wrote in an official report ... I expect the population of Moliagul will resort here in the summer. On the day following I learn that twenty or thirty drays had passed McIntyre's, all travelling in one direction. Mr Rede received my instructions to take the diggings under his charge, and the name I have assigned to them is that of the run on which they are, viz., Kingower'. The original discovery took place on the main flat, and almost immediately there began the finding of large nuggets that made Kingower a celebrated place. A Commissioners' Camp was erected in 1854 and about 4000 diggers rushed there - sequence of discoveries as follows:
- Feb 1854: new rich leads were discovered at Lever's Gully, Long Gully, Timm's Gully, Evan's Gully, Poverty, Red Clay Gully, Scatterbrain, Frenchman's and Pickard's Gullies, but despite the nuggets the lack of water drove the diggers away, and by August Kingower was almost deserted.
- Early 1855 Rich Union Reef discovered
- June 1855 Nugget bed was gains yielding prodigiously - 912 ounces of nuggets together in Long Gully and two others weighing 357 oz.
- 1855 Potters and Black Jack gullies opened.
- 1856 Stockyard Gully and Scrubby Gully; also Smith's Gully, about two miles towards McIntyre's; and McKenzie's Gully south of the town where three Aberdeen men unearthed 893 ounces of gold in three large pieces. Billy Goat and Porcupine were also occupied in 1856.
- 1857 Another large rush to Kingower ... and gold was found in Hard Gully and Ironbark. Tumbler's Hill was a favourite spot, Slaughteryard Hill was rushed, a town was being built, and on 27 August a nugget weighing 1743 ounces was dug up by Robert and James Ambrose of Gravesend and Samuel and Charles Napier of New Brunswick. It was named the Blanche Barkly after the Governor's daughter.
- 1858 There was a rush at Kingower to Evan's Gully in July; Ironbark Gully was rushed in September, and McKenzie's Gully was also rushed.
- 1859 Pipeclay, Sawpit Gully and Paper Gully rushed.

9

James Flett, 1979, The History Of Gold Discovery in Victoria, pp292-296

- 1860 June 1860; a great host of diggers from the newly opened Inglewood field discovered new leads in Rev. William Hall's Glenalbyn P.R. Paddock, nuggets were unearthed, and "Hall's Rush" that continued for over a year became known as the 'Potato Diggings'.
- 1861 Wisebeaches Hill, near Rheola, was discovered and in Feb ... Evan's Gully produced a sensational patch of nuggets - about thirty found together, ranging from four to 782 oz.
- 1871 Uncle Tom's Gully opened.¹⁰
- 1854:** Peters' Diggings (Carapooee). The First report of gold discovery at Peters' Diggings, a place named after David Peters the licensee of Stathfillan Station, was late in 1854, when Higgs and party, the discoverers of gold at St Arnaud, got gold there, near Strathfillan Station. The first record of actual workings there was contained in a warden's report by William Templeton, who said, in March 1856, that there were 200 diggers there. Sequence of discoveries as follows:
- 1855 First report of gold discovered at Peters' Diggings
- 1856 The First record of actual workings there was contained in a warden's report by William Templeton, who said, in March 1856, that there were 200 diggers there.
- 1856-1858 Peters' Diggings opened and often rushed in the period 1856-58, was not sufficiently large place to warrant a reward, but there were a large number of isolated hill diggings worked in the vicinity. The chief of these were:
- 1859 Sheoak Rises, worked in 1859
- 1861 Dogberry or Major's Line Rush in 1861, Banshee Hill, Edelston's Hill and others that year. Edelston the prospector, had a crusher at Carapooee.¹¹
- 1854:** St Arnaud Diggings. The first record of gold discovery in the St Arnaud area was in a Commissioner's report in October 1854, which said that a 'vein of gold' had been discovered on squatter Davies' (Strathfillan) run on the 'northern extremity of the Pyrenees'. It is likely that the original discovery party at St Arnaud, which found gold on Strathfillan Run about this time, were responsible for this report. This party, consisting of Richard Higgs, Thoam Wembridge, Samuel Scott (or Cairns), Frederick Steward, Frederick C. Dutton, Robert Griffin and David Pilchard (alias Fultcher, but also known as 'Old Davy Cook'), received the reward for the discovery ... The four first members of the party came from Avoca in an old spring cart, late in 1854, spent several weeks prospecting about Strathfillan, and eventually camped on Orr's (St Arnaud) Creek near the site of St Arnaud, which was then a no-man's land between runs - flat, timbered with large box and gum trees, enclosed by hills covered with dense scrub and mallee. They found a little gold and sent for the rest of the party, who arrived in 1854 before the year was out. The first payable gold was found by Pilchard about four miles north-west of the camp, near Bakery Hill, on 10 January 1855. The field got its original name - New Bendigo - when Wembridge went to his mate's hole and said, 'We're struck a new Bendigo'. The site of the discovery was near the sandy knoll called Bakery Hill, and near here Wembridge opened the first reef, the Gap Reef, on the watershed between New Bendigo Gully and St Arnaud. By February 1855 the rush had started on the field, with 400 there in March and 3000 in April, and the diggings were mainly confined to New Bendigo Gully, a narrow ravine running west. Some of the main quartz reefs were discovered at the period of the rush in the first half of 1855. The discovery party opened Steward's Reef, near the Gap. Wilson's Reef, later re-discovered by Charles Wilson, was known first by Wembridge, who covered it up. One of the first reefs opened was Nelson's, on the line of Sebastopol Reef, a long granulated mass of quartz that ran over Sebastopol Hill and was known as 'the old quartz reef' in August 1855. Shewrings' Reef was opened by Charles Shewring, west of the gap at this time. Sequence of discoveries as follows:
- 1854 First record of gold discovered was at Commissioners Flat in October 1854
- 1855 First payable gold discovered in Feb 1855, at Bakery Hill ... By Feb the rush had started on the field and diggings concentrated on New Bendigo Gully. Reef's discovered during this time included Stewards Reef at the Gap, Nelsons Reef and Shewrings Reef ... Armenian Gully also being worked in 1855, and the Hard Hills and Forty-Foot Gully apparently opened soon after. Ironbark Gully was also opened at this time, the Gap Gully and possibly Sawpit Gully.
- 1856 The Silvermine Reef at St Arnaud first came known in 1856, and in 1857 it was being worked by G.D. Edwards and party, who applied for a reward to the gold rewards board in 1864.
- 1858/1860 Diggers burned the mallee and worked reefs and alluvial areas north-east of St Arnaud. Another report in September that year of the discovery of a chain of gravel 'made hills' suggests the discovery of the Erivan Hills, an east-west small range about four miles E.N E of the town, first mentioned by name and rushed in 1860. The Erivan Lead in a nearby gully was also worked in 1860
- 1862/1864 Jardine's Lead was opened and rushed, west of St Arnaud in 1862, and in August Peevor's Flat, about a mile ahead of the workings at New Bendigo Gully, was opened and rushed, at what was known as Mogg's Rush, after the squatter. The diggers called it Peevor's after the prospector. Wagner's and Cochrane's Hills near Peevor's Flat were also worked at this time. Other places then worked were Salter's Hill, Bell's Hill, and a place called Scrub Rush, five miles east of St Arnaud. Geyer's Hill was also worked at the time of Scrub Rush, in December 1864.

10 James Flett, 1979, The History Of Gold Discovery in Victoria, pp287-291

11 James Flett, 1979, The History Of Gold Discovery in Victoria, p451

- 1870 Gold was discovered in some tributaries of Armenian Gully and there was a large rush to Strathalbyn Gully, one of these.¹²
- July 1854:** Potters Hill Reef.
 1854 Potter's Hill Reef was discovered in July 1854 ... rich specimens were found. eg. James Bagerie obtained 150 oz., including one piece of 96 oz.
- Jan 1855 Taken up by a party who came from Maryborough for the purpose ... This party took up six claims, each 24 feet in length along the reef, a wall of four to five feet between the claims. They sunk open cuttings the full length of each claim to a depth of fifteen to twenty feet, and although gold was occasionally seen, nothing payable was obtained at the time. There was no crushing plant nearer than Maryborough where there was a Berdan machine worked by horse-power. The stone required breaking as small as marbles before being placed in the machine and when the tailings came out there were about the size of peas, and for that style of crushing they charges £8 per ton. Getting nothing payable in the cuttings, the party sunk a shaft 80 feet ... nothing payable was found and the reef was abandoned for a considerable length of time ... During this time a number of large specimens were found on the surface or just below the ground.
- 1861 Taken up by Joseph Allen and J.R Gray. On this occasion a nice prospect was obtained on the northern fall of the hill, about 400 feet from where Potter obtained his gold. The prospect was got about 4 feet below the surface and an open cutting was made about 25 feet long and 10 feet deep, but the prospects were not sufficiently good to follow and two shafts were sunk, one 80 feet and the other, 140 feet ... unsuccessful and was abandoned.
- 1872 Taken up by Mr J R Gray
 1888 Claim again taken up by Gray and it is still held by him. Much costeaning has been done and several shallow shaft have been sunk of the reef during the last two years
- Martins Claim
 1862/63 About 800 feet north of where Potter got his gold, and apparently on the same line of reef, William Martin obtained a nice patch of about 120 ounces.
- 1883 Edmond King picked up a specimen containing about 2 ounces of gold about 200 feet still farther north from where Martin got his patch of gold. King sank two or three holes to a depth of 7 to 8 feet but never succeeded in getting any gold.
- 1884 Messrs Gray and M'Kibbon took up the claim abandoned by King and within one foot of King's shafts they got a bucket full of quartz which gave over two ounces of gold.
- 1889 Taken up by Korong Prospecting Association. A shaft was sunk opposite to where Martin obtained his gold (shaft 140 feet)¹³
- 1855:** When the first rains set in 1855, a considerable increase in the population of the field occurred ... but as no new ground of any great value was opened, the population again left ... and in November 1855 the population had again fallen to about four hundred. In November 1855 Messrs D. Leighton, W. Gilfillan and I Steel opened what is generally known as Smith's Patch ... Smith's Patch covers an area of about twenty acres and is situated within 200 yards of the Police Camp. It was very rich and tolerably regular, and in December every working man on the field was getting payable gold ... The news of the success of those digging at Smith's Patch caused a considerable increase to the population, and after the ground was either worked out or fully occupied, some genuine prospecting was commenced. One gully after another was opened almost every month for the next twelve months or more, and the field continued to expand and has never fallen back to what it was in '53 and '54. The field is now fully eleven miles in length and about four miles in breadth, and over this vast area almost every gully, flay and 'cement hill' has yielded gold, ore or less, and some of them have been remarkably rich both in nuggets and fine gold.¹⁴

12 James Flett, 1979, The History Of Gold Discovery in Victoria, p452-453

13 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp30-35

14 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp19-20

- 1852 to 1883:** Gullies and hills were opened nearly in the following order:
 1852 Golden Gully, Queen's Gully, Upper end Main Flat, Nursery Gully, Steel's Gully
 1853 Poverty Gully, Schisser Gully
 1854 Cement Hill, south of Queen's Gully, Welshman's Point
 1855 Smith's Patch
 1856 Bocca Flat, Potter's Hill Gully, Bagerie's Hill, Bagerie's Gully, Ironbark Gully, Tambourine Gully, Main Flat (middle portion)
 1857 Glasgow Hill, Attwood's Gully, Farmers Gully, Jerusalem Gully, Italian Point
 1858 Magpie Gully, Peep O'Day Gully
 1859 Virgin Gully
 1860 Silverdale Gully, Yorkshire Flat
 1862 Barnes's Gully
 1864 Snake Gully
 1866 Long Gully
 1883 Maryborough Gully, Tinpot Gully. ¹⁵
- 1855:** Campbell's Reef. Campbell's reef was the third reef opened in the district. The reef was found in working the alluvial ground at a depth of about 12 feet from the surface on 24 Feb 1855. The reef was found by Mr Alexander Campbell and named after him, but has been generally known as the Main Flat Reef. It is situated about 150 yards east of the main street of the township. About a thousand feet of this reef was taken up in claims of 24 feet in length, and in the greater portion gold was obtained in the reef but as there was no crushing machinery in the district, only the best part was prospected to any great depth.
 1857 The reef taken up by William Jones and others. A shaft sunk to 46 feet ... water was very troublesome so shaft abandoned
 1859 Taken up by Messrs Tenny and Clarke ... erected pumping and crushing machinery and sunk a shaft ... at a depth of 65 feet they got the reef ... but it was not so rich as they expected. Sold the claim to the Lane's Reef Company ... who occupied the ground until 1861 when the plant and leases were sold to Messrs Grey and Waltere.
 1861 Messrs Grey and Waltere sunk a shaft and at fifty feet struck a reef 3 feet thick which gave nearly 2 ounces per ton ... found water troublesome
 1868 Wedderburn Gold Mining Co. was formed to work the reef ... shaft sunk to 154 feet and mine opened up ... again found water troublesome and mine let on tribute.
 1870 Claim and plant fell into the hands of Mr Gray, he arranged with a Ballarat syndicate, amongst whom were the late Peter Lalor, Joseph Jones and Leck [sic] (all members of the Legislative Assembly) ... The mine was pumped dry ... no payable stone found.
 1888 Mine and plant purchased by a Melbourne syndicate, among whom was Mr Thomas Langdon, MLA. This syndicate spent £2,000 principally in overhauling the machinery and erecting new, but failed to get on anything payable.¹⁶
- 1850s to 1880s:** Cement Hills: the 'cement hills' commence north of the Corella reef, five miles north of Wedderburn, running nearly parallel with the present watercourse to Sugar Loaf Hill where there is a junction with a second run which starts five miles south of the township and runs nearly east past the Wedderburn Junction. There have been thousands of tons of 'cement' taken from the various hills and crushed at batteries in the locality, and for the amount of work done it has paid equally as well as any other branch of mining in the district ... The greatest amount of work done on any one 'cement hill' is at Glasgow Hill, three miles from the township, where a run of 'cement' has been followed for nearly half-a-mile. Pieces of gold varying from one to sixty ounces have been obtained the whole length of the run ... There has also been a considerable quantity of 'cement' crushed from Welshman's point and Williams's Gully ... Men have been making a living taking out 'cement' and crushing it with hammers and crowbars for the last ten years or more, and still find 'cement' which pays for this mode of treatment.¹⁷

15 J.R Gray, 1888 (edited by Frank Cusack in 1981), p.21

16 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp35-39

17 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp22-23

- 1856:** Stuart Mill – Rostrons. The first record of gold discovery in this area was contained in a report in a local paper during the rushes of 1861, which said that gold was found at the head of the Carapooee Creek in 1851, at what was correctly called Withersdean, and was reported at the time to the authorities by James Campbell of Stathfillan. After this there was no record of gold discovery in the area until 1856, when gold was found at Stuart Mill and there was a rush four miles from Rostron’s Tottington station There were two applications for rewards for the discovery of gold at Rostron’s, for the diggings situated at the head of Reedy Creek and Sandy Creek. A party of Italians was the original discoverers of gold in the alluvial hills at Stuart Mill, and worked there in 1859-1860.¹⁸
- 1856:** Canadian Reef. The Canadian Reef is about half-a-mile north of Specimen Hill and in the same belt, and may possibly be the same line of reef. It was opened in 1856 by Jas. Pagan, Blake and McKay. The reef was worked out by the prospectors to a depth of 20 to 30 feet and most of the stone went about 8 ounces per ton Gold was also got both north and south of the prospectors but not equally as rich as the prospecting claim. In all about 300 feet of the reef has been taken out, to a depth of 20 feet or more. Very little prospecting has been done on the reef since 1857.¹⁹
- c.1856:** Lane’s Reef - The reef is about 1/2 mile east of Specimen Hill and about one mile from the township . Discovered by Mr Z Lane ... initially he took out only about one ton of stone, but from that he obtained 73 ounces of gold. Lane did little prospecting and soon abandoned the reef.
- c.1857 Taken up by Thompson, Martin, Charles Faye, C. Fernandez and Frank Handson. These men continued to prospect for some time before getting payable gold, but finally they got it and a large rush set in, the reef being taken up for fully 1/2 mile. A crushing plant had been erected at Kingower and quartz could be carted and crushed at a cost of £10 per ton, which was considered a great boon in those days. The reef was now worked and prospected energetically for about 12 months and a considerable amount of gold was obtained. Many of the claims yield remarkably well for their size, no claim at that time exceeding 48 feet in length, and many only 24 feet. Amongst the most fortunate were Donaldson and Son but the richest quartz was perhaps some obtained by Mr T. W. Cosh and mate, which gave as high as 90 oz. per ton. But payable gold was not traced more than 300 feet along the reef, and like Specimen Hill, the best stone was confined to the eastern side of the reef ... None of the claims paid at a greater depth than 50 to 60 feet and soon as the yield fell off to 3 or 4 oz. per ton, the claims were abandoned.
- 1859 Mr Archibald Milne and party erected a small crushing plant near the foot of Steel’s Gully, and they prospected Lane’s Reef for some time but, although they saw considerable gold in the stone, the crushing plant did not seem to save it and the party soon broke up.
- 1861 Lane’s Reef Company ... poor crushings ... reef and plant sold to Messrs Gray and Waltere ... they only took out one small crushing
- post 1861 Reef worked in the following years by small parties: Sutton Bros.; Cox, Cosh and others; Ingels Bros.; then taken on by a Ballarat syndicate.²⁰
- Oct 1858:** Many left Synotts for the rush following the discovery of gold at **Burke’s Flat** in October 1858. This locality, a few miles east of Synott’s, was opened by Burke, O’Connor and Malony, at a ‘made hill’ on a plain ‘of singular appearance’, and there were 2000 there in November. It was rather a poor diggings, but there were further discoveries and rushes to Italian Gully and elsewhere between 1868 and 1873.
- c.1859:** Quartz reefs were discovered soon after the rush, and the rush, and the place assumed the appearance of a township by 1868, with a post office, church, schools and stores.²¹
- Late 1858:** **Fenton’s Rush** - Another diggings opened in late 1858 in this area was Fenton’s Creek, that began with a rush to a cemented hill about two miles south of John Fenton’s Spring Hill P.R. in December. There were about 700 men at this rush ... 1859: New Year ‘s Hill was opened in Jan 1859, and Biddy’s Hill and other places near the junction of the Avoca and Fenton’s Creek were worked.²²
- 1858/1860:** Diggers burned the mallee and worked reefs and alluvial areas north-east of St Arnaud. Another report in September that year of the discovery of a chain of gravel ‘made hills’ suggests the discovery of the Erivan Hills, an east-west small range about four miles E.N E of the town, first mentioned by name and rushed in 1860. The Erivan Lead in a nearby gully was also worked in 1860.²³

18 James Flett, 1979, The History Of Gold Discovery in Victoria, pp448-451
 19 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp39-40
 20 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp41-44
 21 James Flett, 1979, The History Of Gold Discovery in Victoria,pp299-301
 22 James Flett, 1979, The History Of Gold Discovery in Victoria,pp299-301
 23 James Flett, 1979, The History Of Gold Discovery in Victoria, p452-453

- May 1859:** Synotts' Gold Diggings. Soon after the rushes to Bealiba and Wehla a number of new discoveries were made north of Bealiba, on the east side of the Avoca River. Gold was first found in May 1859 by Joseph Norris and Joe Seaton on a hill just south of Avoca Forest station, which was then owned by the Synotts. Sequence of gold discoveries as follows:
- May 1859: Discovery of gold - the prospecting claim was then called 'Barracks Diggings', but the rush became known as **Synotts**. The main hill here was Canadian Hill, but the rush, where about 2000 congregated at its peak in October 1858, with a street of stores on the banks of the Avoca, soon dwindled to a few Chinese in 1859.
- Oct 1858 Many left Synotts for the rush following the discovery of gold at **Burke's Flat** in October 1858. This locality, a few miles east of Synott's, was opened by Burke, O'Connor and Malony, at a 'made hill' on a plain 'of singular appearance', and there were 2000 there in November. It was rather a poor diggings, but there were further discoveries and rushes to Italian Gully and elsewhere between 1868 and 1873.
- c.1859 Quartz reefs were discovered soon after the rush, and the rush, and the place assumed the appearance of a township by 1868, with a post office, church, schools and stores.
- Dec 1858 A great number of diggers left Synott's and Burke's Flat rushes in December 1858 for Four Mile Flat, known then and today as Emu, which place, like Burke's Flat, in 1867 became a reefing centre, around the activity on the Isabelle Reef.
- Late 1858: Another diggings opened in late 1858 in this area was Fenton's Creek, that began with a rush to a cemented hill about two miles south of John Fenton's Spring Hill P.R. in December. There were about 700 men at this rush
- 1859 New Year 's Hill was opened in Jan 1859, and Bidy's Hill and other places near the junction of the Avoca and Fenton's Creek were worked.
- 1869 A mining plant was erected at Dodd's Hill, Fenton's, in 1869 after a deep lead was discovered there.
- 1872 There was a large rush to the Fenton's Creek area, about half-way between Fenton's and the Avoca River in the winter of 1872, to **Avoca Forest Rush**, about three miles north-west of Cameron's Avoca Forest station. The original discovery of gold here was made by Joseph Norris and party in May 1872, in a north and south gully called Berwick Flat and two tributary gullies on the east side. By November 1872 there were 1200 people collected on the rush, with a street of shops along the main lead, but the ground was rather poor.
- May 1873 gold was found east of the range towards Fenton's Creek, and the cement hills south of the rush, opened at the time of Fenton's Creek Rush, were worked again. ²⁴
- July 1859/1860:** The Discovery of Old Inglewood. In the month of July 1859 ... (Joseph Thompson, Alexander Thompson, Thomas Thompson, and Joseph Honey or Hanny) ... prospecting the area ... They found payable gold in small quantities in many places. Payable gold was first found in October 1858 at Thompson's Gully (Rose Hill) and afterwards at Psalm Singer's Gully, which had originally been called by the prospectors, Old Joe's Gully ... In the latter stages of October the diggers on the Kingower goldfield were told of the party's findings; but it was not until the party had made it known to Graham Webster, the Warden of Korong, and Joseph Thompson had taken out a 200 square foot prospecting claim on 24 November 1859, that the Old Inglewood Goldrush began. In consequence of the resulting rush ... there were in Jan 1860, some three to five thousand miners on the field. This soon built up to sixteen thousand miners. By the middle of December 1859, four other gullies in the vicinity of Thompson's and Psalm Singer's were opened: those being, Queen's, Bulldog, Gropers and Wellington Gullies. ²⁵
- Aug 1859:** Korong Division: The population is as follows:
- | | <i>Europeans</i> | <i>Chinese</i> |
|-----------------|------------------|----------------|
| Alluvial miners | 3000 | 360 |
| Quartz miners | 250 - | 3250 |
| | 360 | |
- The machinery is as follows:
 Alluvial mining-horse puddling-machines, 57.
 Quartz mining-steam-engines: 6 -55 horse power.
 The approximate value of all mining plant within the division is £8,640.

²⁴ James Flett, 1979, The History Of Gold Discovery in Victoria,pp299-301
²⁵ Alan M Nixon, 1982, Inglewood Gold, p16

During the month very little mining was done in this division, owing to the Inglewood rush. Almost all the miners from the several gold-fields within this division have been induced to visit the new rush. Many of the miners holding quartz claims with fair prospects of remuneration have had their shares registered, to enable them to try their fortunes at Inglewood, where the prospects are in general satisfactory notwithstanding the total absence of water. There are now eight gullies and six quartz reefs or veins being worked. All these are not to be considered distinct reefs- I expect several will be found to be continuations of others. Adjoining each fresh discovery or prospecting claim, from eight to ten others are generally marked out, and shepherded for a time. The first crushing of quartz from this field took place during the month at Kingower. About two and three-quarters tons of quartz were crushed, and yielded 13oz. 14dwt. 11gr. This was taken from the surface of the Inglewood Reef, and, as many of the richest specimens were not crushed, the yield may be considered very satisfactory. The quantity of quartz yet raised from all the reefs at Inglewood is very small, owing to some of the best claims being disputed. In alluvial mining several rich deposits have been found. There are several claims from which wash-dirt yielding from 10oz. to 20oz. per load has been obtained, but these instances are far above the average yield.²⁶

1857: Jordan's Rush. Gold was first discovered at Wehla Goldfield sometime in 1853, but the first record of gold digging in the area was 'Jordan's Rush' in April 1857 ... Jordans Rush and almost immediately the area over the hill further north, at what the diggers called Jericho, was rushed. It was a small field, but in parts very rich, and there was a wild rush of about 5000 diggers.²⁷

Nov 1859: Inglewood Reef. This was the first quartz claim taken up in Inglewood. It was pegged out on 27 November 1859 and the first crushing took place on 13 December at R. Paterson and Company's mill, when 3 tons gave 13 ounces and 13 dwts of gold ... The claim has not been worked to any great depth, and for some time it has ceased to be productive ... At Present (1863) all mining operations are stayed, and the mine and plant have changed hands ... The Old Inglewood crushing machine is about the most extensive plant in the locality. It comprises sixteen head of stamps driven by an engine-cylinder sixteen inch, with a stroke of thirty feet; boiler, twenty-seven feet by six feet six inches. It is employed entirely on public crushing, passing through about 220 tons per week, at a charge of 9s. per load for crushing and 2s. for carting. One of the Laidlaw's ten-inch pumps is used for raising the tailings to a height of twenty-five feet, carrying them off in wooden shoots; the comparatively flat nature of the ground about the machine rendering such an appliance a most desirable acquisition.²⁸

November 1859: Inglewood. Inglewood goldfield, although but a few miles from Kingower, was not discovered until six year later. The field was originally prospected by a party consisting of Alexander Thompson, Joseph Thompson, Thomas Thompson and Joseph Honey, who were rewarded £200 each by the Select Committee for gold rewards in 1863. Sequence of gold discoveries as follows:

1859 The first discovery took place on the northern end of the goldfield, known as 'Old Inglewood' by a party consisting of Alexander Thompson, Joseph Thompson, Thomas Thompson and Joseph Honey

Nov 1859 The Old Inglewood Reef, Maxwell's and the Columbian were the original quartz prospect claims taken up in November. The first of these reefs were discovered by Catto and Wheeler.

Nov/Dec 1859 Thomas Potter, Henry Irvine and Samuel McKean discovered New Inglewood, at Potter's Hill. The first report of the Inglewood discovery was in a local paper on 21 November 1859, three days before the Thompson's' registered their claim. The report said that Re, Hall's nephews had piled 2000 loads of wash on the quite, that yielded one-two dwts. of gold per tub. With regards to Potter's discovery of Potter's Hill in Jan 1860, the newspapers in December reported New Inglewood a township, and by the 24th of that month gullies had been opened up there for six miles.

Dec 1859 After the discovery at Thompson's and Psalm-Singing gullies, Queen's Gully and three others in the vicinity, possibly Bulldog, Gropers and Wellington, were opened at Inglewood by the beginning of December 1859. There were then 3000 on the rush, which soon after built up to 16,000. The rush was about seven miles due north-east of Kingower, in a series of low, sandy gullies in the mallee scrub.

Jan 1860 The first Hard (cemented) Hill was reported open, and the place soon became the main rush at Inglewood.

Feb 1860 Two other similar hills were opened and leads traced north and south into what became known as Daly's Lead.

March 1860 Pegs on the flat (Daly's Lead) extended to Bullabul Creek, where there was a diggers camp called Kingarra. Thompson's' Gully was rushed in March 1860.

April/May Three new gullies were discovered early in April, Menzies Flat was rushed in May.

June 1860 A large flat about two miles south-west of the surveyed town, Sandy Creek Road, that was called Caledonia, was opened, and rushed by 5000 diggers in June.

1860 German Gully was opened, Jersey Gully in mid-July, and Slaughteryard Gully in August.

²⁶ Mining Surveyors Reports, August 1859

²⁷ James Flett, 1979, The History Of Gold Discovery in Victoria, pp299

²⁸ Alan M Nixon, 1982, Inglewood Gold, pp106-107

- 1860/61 A great number of quartz reefs were discovered around Inglewood, including Buchanan's, Godwin, Inglewood in fact became in 1861 an important reefing town, 4500 men so employed
- 1861 One of the last discoveries was Scorer's Lead, about four miles south of the town, where there was a large rush in Sept 1861.²⁹
- Nov 1859:** Inglewood - Jersey Reef. On the 27th November 1859, G. Carter, J. Stewart, J. Edel and W. Thompson lodged the necessary notice that they had marked out 180 feet on a reef to be called the 'Old Inglewood' ... but it was not until March the following year (1860) that the stone was struck which has caused this claim to be rank among the noted ones of the district ... So promising did the prospects appear, that the proprietors were induced to erect steam crushing, pumping and winding machinery at a cost of £3,400, the plant consisting of a 25hp horizontal engine; two batteries of stamps (four heads each), lift pump with 300 feet of seven inch piping, and all necessary winding gear. The shaft was sunk and splendidly timbered to a depth of 260 feet, but nothing could be found to compensate this enormous outlay.³⁰
- Nov 1859:** Inglewood - The Columbian Line. The Columbian line, which includes the famous Morning Star, March and other reefs ... was first discovered ... in November 1859 ... From the Columbian some of the richest gold returns ever chronicled have been made, 13,103 ounces from 1471 tons of stone being the figures given for one claim. From the Columbian group of five claims 4435 tons of stone were crushed, yielding 26,127 ounces ... This work was all done in a little over two years from the discovery of the reef, when the inevitable water caused the cessation of operations. Subsequently expensive machinery was erected and a new shaft put down, but owing to the selection of a site too far to the east, the lode was not discovered. Further south on the same line is the March reef, opened in 1862 ... In the adjoining claim, is the far-famed Unity ... A few yards from the Unity are the Morning Star and Poverty Reef groups, also belonging to the Columbian line. Other claims along this line, such as the Godwin, the Independent and the Reality (both the latter now being included in the Unity) yielded largely in the past.³¹
- Dec 1858:** **Emu Diggings** - A great number of diggers left Synott's and Burke's Flat rushes in December 1858 for Four Mile Flat, known then and today as Emu, which place, like Burke's Flat, in 1867 became a reefing centre, around the activity on the Isabelle Reef.³²
- Dec 1859:** Korong Division
The population is as follows:
- | Location | Alluvial | Quartz | Trade | European | Chinese |
|----------------------|----------|--------|-------|----------|---------|
| Korong | 1650 | 50 | 160 | 1560 | 300 |
| Kingower | 258 | 66 | 46 | 370 | - |
| Jordan's and Jericho | 66 | 100 | 26 | 180 | 12 |
| Synnotts | 86 | - | 3 | 25 | - |
| Fenton's | 22 | - | 3 | 25 | - |
| M'Intyre's | 222 | 4 | 4 | 50 | 180 |
| Totals | 2304 | 220 | 243 | 2215 | 55 |
- The following table shows the machines at work (W) and idle (I)
- | Location | Puddling (W)(I) | Steam engine (W)(I) | Crushing (W)(I) |
|------------|-----------------|---------------------|-----------------|
| Korong | 30 12 | 1 2 | 1 2 |
| Kingower | 8 1 | 2 1 | |
| Jericho | - 1 | 1 | 1 |
| Synott's | 1 | | |
| M'Intyre's | 2 2 | | |

²⁹ James Flett, 1979, The History Of Gold Discovery in Victoria, pp302-309

³⁰ Alan M Nixon, 1982, Inglewood Gold, p135-136

³¹ Alan M Nixon, 1982, Extracts from the Mining Record - July 1863, pp106-111

³² James Flett, 1979, The History Of Gold Discovery in Victoria, pp299-301

Korong: although these diggings during the month have been considered very dull, a good quantity of gold has been obtained from several places in old and new ground-one nugget weighed 5lb., and another 16lb. Gold has been found lately at considerable distances in the Mallee Scrub. One gully, situated N. 28.deg. E., one mile and a half distant from Peep-o'-day Gully (indicated as Scrub Rush on the general plan of the district), is being worked by about 30 men, with very favourable results. The depth of sinking is from 2 to 5 feet, and nuggets weighing from 1/2oz. to 8oz. have been obtained; but the difficulty of procuring water &c., in that locality will prevent its resources being properly developed. A sum of money(say £6,000) carefully expended in constructing a few dams, with necessary surface-races to collect the storm-water, would enable the miners to reside near their work, and be the means of opening a large gold-field--already discovered...I would beg to allude to the large amount of labour continuously lost here--and on similar gold-fields, where the ground is shallow and the gold patchy--in consequence of the oft-repeated digging and removing of headings, soil, &c., by the individual miner, in hopes of obtaining a pillar, or block, where the ground has been rich, or reported as such. This mode of reworking so much old ground can only be prevented by the ground being properly worked by large companies, after which a stranger, or any one, might see at once that the gold has been extracted. Companies are objected to in places where miners may obtain a few pennyweights of gold when his means are exhausted; but if he were excluded from ground very much dug, ultimately a considerable saving of time and labour would be the result. Quartz-mining appears to be shamefully neglected here at present. Only five claims of small extent are at work, and the amount of quartz being raised is very small.

Kingower: Digging has assumed a better aspect here during the month, in consequence of payable ground having been discovered adjoining the old workings of Hard Hill Gully and Tumbler's Hill. . . A rush has also taken place at Sawpit Gully, and the prospectors obtained a specimen, containing over 40oz. of gold, previous to bottoming their shaft, which is only 8 feet deep. This gully is parallel to McKenzie's Gully, on the west side, and shows indications of being highly auriferous. Quartz-mining is attracting far more attention here just now than it has done during the last four years, and several prospecting parties are sinking shafts in search of auriferous quartz. About 500 yards have been marked off along the courses of the Union Reef. The sinking is supposed from 300 to 400 feet: the great thickness and solidity of the payable reef now being worked by the Amalgamated Company's claim, adjoining, is sufficient inducement to warrant an outlay to a considerable amount on the ground marked off. The Amalgamated Company on this reef continues to procure good stone along the ground, which had been previously worked. They employ at present about 20 men in raising quartz. Their blacksmith's has been employed underground during the month without causing the least inconvenience too the working, and it save time formerly lost in sending tools to the surface for repairs.

Jordan's and Jericho: These diggings are still in a very dull state, owing to most of the payable quartz leaders have been worked out. Considerable expense will have to be incurred in sinking to test the value of the underlying reefs. On Milkman's Reef the prospectors have attained a depth of 70 feet, and are now on third body of quartz, which contains payable gold. Other five claims are in full work, at depths varying from 50 to 80 feet, without obtaining anything payable.

On Patterson's Reef only the prospectors' claim is being worked. Phillip's Reef is being abandoned for the present, the prospectors having registered their claim. It is the only claim on that reef which paid anything--2oz. to 3 1/2 oz. per ton, and that from the surface leader. On Black Reef six claims are at work, but I do not think they are turning out payable quartz at the present. Two claims are amalgamated, for the purpose of sinking a deep shaft. Several claims, whose terms of registration will expire soon, are likely to be re-worked. On Petticoat Reef no quartz is being raised, only one claim being unregistered, or abandoned. The prospectors, after working the first vein, have commenced a new shaft to the eastward, in strong hopes of striking a main reef, but, as they require to blast the rock from the surface, it will take months to make much progress. I do not think many shareholders along this line of reef will resume working their claims until such times as the prospectors get the reef.

The Staffordshire Reef is being tried by two parties. The vein is very narrow, and considerable time is required to procure a ton.

German and Bruce's Reefs are rather improving. Good payable quartz has been obtained in a shaft lately bottomed on the latter but, like other good patches found here, is only of small extent ... During the month 50 tons of quartz have been crushed. Although the machine embraces the latest improvements, as used at Bendigo, etc., it does not meet approval from all the Jericho miners, and other amalgamators are now being added.

Fentons - These diggings are gradually declining. Only a few parties and the original prospectors remain.

Synnott's - These diggings are in a very dull state, but will likely receive a larger population in the summer months, owing to the good supply of water, which they command, in comparison to other field.

M'Intyre's - Here a good deal of excitement was lately caused, owing to one party having obtained about 20lb. weight of gold (including a nugget weighing 10lb) in a shallow hole in No 3 Gully. The old ground is being well worked by Chinese. The Amalgamated Company on Marshall's Reef is now down 100 feet, but has not yet struck the reef.

It is generally very difficult to trace the gold at such places as Korong and Kingower diggings, and consequently it is almost an impossibility to work them out. The miners require to be possessed of great perseverance and hope here, in comparison to those at almost any other gold field of half the richness.³³

- 1860:** Lane's Reef Co. erected whim and worked reef for some 8 months ... Late 1861 Lane's Reef Co. was wound up and all their leases, including Specimen Hill. were sold with their plant, the purchasers being Messrs J R Gray and Simon Waltere - were unsuccessful.³⁴
- 1860:** New Inglewood Gold Diggings. 'New Inglewood' goldfield was discovered in Jan 1860, by Thomas Potter, Henry Irvine, and Samuel McKean, who worked the area named Potter's Hill. The 2 Jan 1860 was a big day for the Potter Party when they found a payable alluvial goldfield for which they too received a reward from the Select Committee ... And it was Potter's Hill where a great community of Chinese miners were digging after the first find.³⁵
- 1860:** Korella Reef. This reef was opened on 10 October 1860 by Mr Reuben Gatward ... and was so named from a white parrot (much resembling a cockatoo) seen near the reef. The reef is about 5-1/2 miles north of Wedderburn ... Some five or six claims got payable gold. The quartz was mostly carted to Inglewood for crushing and varied from 2 to 4 ounces of gold per ton.
- 1870:** Reef taken up by Smith Bros. ... and about 200 tons of stone were taken out and crushed at Wedderburn, but the expense of carting and crushing being about £1 per ton, and the part of the reef they were working being poor, the reef was abandoned.
- About 1880:** Reef taken up by C. Armstrong and he, having been joined by Henry Charles, purchased and erected a crushing plant 1/2 mile from reef. They also sank a new shaft about 80 feet deep, but did not get anything payable.
- 1888:** Reef taken up by John Smith and another new shaft of 90 feet sunk - again nothing payable.³⁶
- Nov 1860:** Moonambel. In this area, originally known as McKinnon's or Mountain Creek Rush., gold was found first in November 1860 by John and James Thomas, at what is now the village of Moonambel (means Hole-in-Mountain). Sequence of discoveries as follows:
- Nov 1860 McKinnon's of Mountain Creek Rush
- 1861 Early in Jan 1861 Edward Jopliss and William Darby opened Slaughteryard Gully, just east of the rush, which was confined to an area about two miles in length, a few minor gullies to the east ... In April 1861 gold was discovered four miles west of the rush near the Adelaide Road and Four Mile Lead was opened. In May ... Forest Hut was prospected, about two miles north-west of Four Mile Rush. Wild Dog Gully, south-west was worked in various tributaries at this rush, and later, but the main workings occurred at a rush in 1890.
- 1890 Wild Dog Rush, Moonambel - main workings occurred at a rush in 1890.³⁷
- May 1860:** Inglewood - Messrs Orford Brothers, the owners of the prospecting claim on the Caledonian Reef, obtained last week, from half a bucket of quartz, twenty-one ounces of gold. The line of reef is taken up for a considerable distance...³⁸
- May 1860:** Inglewood - Jersey Reef. It was on 3 May, 1860 that the first claim was registered on this famous reef by the prospector ... four days after he discovered gold. At first it was not payable, but the prospector was not deterred, and worked intermittently, until in July of the following year he was able to announce that his claim was profitable. From that date until October 1863, the crushings spoke for themselves, for the net result was a profit of upwards of £30,000 from a claim a few yards in length, worked by its owners.³⁹
- Early 1860s:** Jewell's Reward. The Jewell Brothers discovered this reef in early 1860s. Their blue mullock heap still exists directly behind the Commission Houses on the west side of Market Street, between the Unity Mine and the gravel pit.⁴⁰

33 Mining Surveyors Reports, December 1859

34 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp24-30

35 Alan M Nixon, 1982, Inglewood Gold, p24

36 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp44-45

37 James Flett, 1979, The History Of Gold Discovery in Victoria, pp445-446

38 Alan M Nixon, 1982, Inglewood Gold, p26

39 Alan M Nixon, 1982, Inglewood Gold, p125

40 Alan M Nixon, 1982, Inglewood Gold, p45

January 1860: (Korong Division)
The mining population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
At Inglewood	6,500	
At other portions of the Division	1,500	500
Total	8,000	500

The machinery is as follows:

	At work	Idle
Alluvial mining:		
Horse puddling machines	6	36
Quartz mining:		
Steam engines	2	4
Crushing machines ¹	4	

Throughout the whole division digging operations have been much retarded owing to the great scarcity of water, and very little alluvial mining can be carried on, unless by those who can afford to stack their washing stuff until rain sets in, or where the gold is nuggetty. Nearly all the puddling machines are idle, owing to the same cause, and great difficulties are experienced in getting sufficient for domestic use on all the old fields. Nothing worthy of note has taken place in quartz mining at Korong. The Specimen Hill Company's crushing machinery is nearly completed, and will soon commence operations.

At Kingower the Union Reef is still yielding good returns, owing to the large body of quartz. New veins are occasionally discovered where nothing payable was supposed to exist, but until such time as more powerful machinery is employed, and the whole mass of quartz extracted and crushed, it will not be worked to the advantage it is capable of yielding.

At Jericho only the German Reef is being worked, which is yielding some very good stone, but as none has been crushed, owing to the scarcity of water for a considerable time, its value is unknown.

The Inglewood diggings notwithstanding, the over abundant supply of dust, the great scarcity of water, with excessive heat increased by the nature of the soil, and thick scrub, are still attracting a large population.

The principal spot of attraction lately has been the same small cement hills about one mile and three quarters south-east of the original township. The sinking varies from one to two feet. The best finds I know of have been obtained at about eight or ten feet. Several new gullies have been opened during the month with fair prospects. The old, or deep lead still maintains a fair number of miners who are tracing it slowly downwards. Some parties are doing well, but as there are few washing at present, owing to the high price of cartage, the yield from few claims can be ascertained.

Since this field as been opened it has cost more money to drive washing stuff to the Loddon, and water to the diggings, than would have been sufficient to have brought a supply of water on the spot, and as the field is now, and will be an extensive one, I would suggest the propriety of Government immediately doing something towards supplying the want so severely felt.

The quartz veins are still looking well, although no main reef has been properly defined. The following are results of trial crushings during the month: [mentions] Inglewood Reef, Prussian Reef, Welcome Reef, Maxwell's Reef, Nelson Reef.⁴¹

February 1860: (Korong Division)
The population is as follows:

	Chinese
Europeans	
Inglewood	16,000
Other portions of the Division	2,600 500
Total	18,600 500

There are 2 steam engines at work and 4 idle, there is 1 crushing machine at work and 4 idle, there are 7 puddling machines at work and 49 idle, and there are 2 steam engines in the course of erection. The great scarcity of water throughout the whole district is severely felt by the entire population, and a general dullness prevails in all the old diggings. There has been no rain during the last five and a half months, and water for domestic use, &c., has to be carted a distance of six or seven miles to Korong, Jericho, Inglewood, &c. Inglewood continues the chief spot of attraction in the district, owing to the quantity of auriferous ground being discovered in places miles apart. The population now may be estimated at 16,000, which number is being daily augmented, as departures and complaints are seldom heard of, it may be considered that the prospects of the majority are good. On the eastern side of the 'Mallee Scrub' the population is about 13,000. A street about 2,000 yards long, chiefly occupied by business people is the principle centre.

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Owing to the Mining Bye-laws of the district, no protection is afforded to those holding business sites fronting on unsurveyed road, so that great confusion and a many disputes are of daily occurrence with the miners through their digging up the main road and frontages. The hard sinking adjoining is now being worked to a depth of about seventy feet, and is extending towards the Loddon with payable results...The deep, or old lead at the original township is reviving gradually, and will yet be found to contain a deal of payable if not of rich ground... On the Inglewood Reef several of the claimholders registered their shares owing to the great excitement at the alluvial workings, others amalgamated their interests and are busily engaged in sinking. The deepest shaft yet on Inglewood is on this reef, viz.: about 140 feet, at which depth it is perfectly dry and hard. Good quartz is being taken from several of the other reefs, the positions of which I expect soon to be able to lay before you. There is yet no crushing machine erected for this field which prevents many of the quartz miners from proving the value of their quartz. The great scarcity of water in this large auriferous district is attracting the attention of capitalists and several propose to introduce a supply by machinery from the Loddon, an investment were to prove remunerative and is unworthy of the delay which has already occurred. The district has never contained so large a population as at present, and should the ensuing winter be an ordinary wet one, the yield of gold from this district will be equal to any in the colony. There is nothing new in any other portion of the district, all the fields are suffering from the great scarcity of water as at Inglewood.⁴²

March 1860: (Korong Division)

The population is as follows:

	Europeans	Chinese
Alluvial miners	3,000	50
Quartz miners	3,300	
Total	6,300	50

Total number of persons of all classes resident within the Korong division, 15,500.

The machinery is as follows:

	No.	Horse-power
Alluvial mining:		
Steam engines employed in pumping	2	22
Puddling machines worked by		
Horse-power (at work 50, idle 58)	108	
Quartz mining:		
Steam crushing machines (at work 12; Idle 1)	13	170
In course of erection	2	35
The number of quartz reef proved to be auriferous,	129.	
The number of square miles of auriferous ground worked on,	25.	
Aggregate value of mining plant, £27,000....		

I have this month registered three prospect claims for alluvial workings. The first situate in Farmer's Gully, Korong, the declared prospect of which was 12 dwt of gold from 35 American buckets of dirt. The second was situate in Mosquito Gully, Korong: the prospect declared was 1 Dwt of gold per tub. The third situate in Scrubby Gully, Old Kingower: the prospect declared was nugget 4 oz 11-1/2 dwt and fine gold. The mining population of this division has increased since my last report; the increase is owing mainly to the return of those who had left this division for the Mountain Creek rush, and who are now returning to the claims which had been registered by them. The alluvial diggings, which, in the Old Inglewood Lead, I mentioned in my last, now assumes the appearance of deep sinking, has also attracted a good many of those who are now returning. The depth of sinking on this lead is now over 120 feet, and the yield obtained from several of the shafts which have bottomed is reported to me to be remunerative. The cement out of this lead, which has been crushed, has yielded 2 oz to the load on an average, a return sufficient to have induced a great many miners marking off claims, and who are now sinking. This lead is situate about four miles west from Inglewood, on the road to Korong, and the sinking perfectly dry and tolerably easy. There are at present more than 400 miners at work in this locality. During the month the owners of puddling machines have almost ceased working, in consequence of the want of water, and I think there will be very little change in this class of mining until rain sets in. Daly's Frontage Lead has had even more water to contend with than was anticipated, and the shareholders of the claims ahead of those who have erected machinery have registered their claims, for the purpose of obtaining steam machinery to aid in overcoming the water. The alluvial sinking at Glenalbyn (Kingower) has been steadily progressing and increasing since my last report. Evans' Gully has this month again produced a good many nuggets, the largest I have seen being 152 oz. Many of the parties are now erecting dams in anticipation of rain, for the purpose of washing the dirt already obtained, a great quantity of which is now lying ready to be puddled.

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Two days' rain last week enabled the alluvial miners in Old Kingower to set to work, and although only for a short time, several nuggets have been discovered, varying from 1 to 17 oz, and mostly in shallow ground from 3 to 10 feet sinking. The Woolshed alluvial diggings at Korong are much in the same state as on my last report. Although we have not had during this month any of the extraordinary yields from the quartz reefs that I reported some months ago I consider that the mines are in a much healthier and prosperous state than they appeared to be last month; the great exodus to Mountain Creek conveyed an impression that the quartz mines were failing. The last month has however proved their stability, inasmuch as many of the claims which had worked the whole of what is termed a floating reef, and which led to the impression that the stone had run out, have at depths varying from 10 to 50 feet below struck other reefs more permanent as they increase in depth. In Jericho the prospects in quartz mining has improved so much as to induce two parties to erect steam crushing machines on their claims. Several claims in this place are however at a stand still until they shall have completed the erection of machinery for the purpose of water baling, the old style of the windlass being found utterly useless. At Kingower the reefs have not made much progress since my last report, and the machines there are principally engaged in crushing cement, &c., obtained in Glenalbyn. From McIntyre Diggings I have received several notifications of ground having been taken up that was abandoned more than twelve months previous, and which is supposed to have been very superficially worked in the first instance. The intimation I received of a rich reef having been struck four miles north of the township of Wedderburn, and which I mentioned in my last report, has not as yet been confirmed, not have I heard the result of their crushing.⁴³

March 1860: (St Arnaud Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	11,000	100
Quartz miners	600	
Total	11,600	100

The machinery is as follows:

	No.	Horse-power	Estimated value
Steam engines employed at Quartz crushing only	2	20	£6,000
Steam engine employed at quartz crushing and saw mill	1	6	£1,200
Steam engine nearly complete for crushing and pumping from shaft 1	10		£1,200
Steam engine in course of erection for crushing purposes, with crushing plant, &c.		1	60 £6,000
Horse whims (idle 3)	6		
Puddling machines (at work being erected, and idle 27)	19, 46		

Price of crushing by stamps from 15s to £1. Price of crushing by mill £1 10s.

In the southern portion of this division, the population is daily increasing more especially in the neighbourhood of Hind's and Navarre. The alluvial in this portion of my division is of a very poor and patchy kind; in some cases pieces weighing from 1 oz to 9 oz being found where the wash-dirt from which they are taken does not exceed in yield 10 dwt. per load and rarely average this. The quartz from the Liverpool, Somerset and Cambrian Reefs, as far as I have seen, do not appear to me very good, the best I should think would yield about 1-1/2 ton. On the Somerset Reef, situated close to and north of Hind's Station, about 20 claims are at work, the reef on the surface in the Prospecting claim is about 10 feet thick - prospect very poor. On the Cambrian Reef they are greatly hindered from prospecting by the quantity of water obtained at the depth of 40 feet; most of the claimholders on this reef have grants for dams on their claims, to retain the water baled, for washing purposes. In the alluvial at Hine's Proper, but few obtain payable claims; in some instances, and those claims few and far between, 1 and 2 oz to the load have been obtained, and the average of the best claims cannot be estimated at over 10 dwt, and the majority do not yield more than 5 dwt to the load; when this is considered and the price of cartage, and use of toms for washing, it cannot be wondered at their seeking better results from quartz... About 14 miles SW of St Arnaud, and near to where the Italians for two years past have been working, a party has taken up a prospecting claim. Yield 10 dwt to the load; sinking 20 feet; gold coarse. North of the prospecting claim on the Bristol Reef, situated on the eastern side of the Alluvial Gully, New Bendigo. No. 4 has been raising quartz said to yield 8 oz per ton. The leaders on Chrysolite Hill, being worked by Doveton, Munch and Company, are still looking well, and by report will yield over 10 oz per ton, this crushing. At the St Arnaud United Company, the works are being vigorously proceeded with, the dam being finished and partially filled, a great portion

of their machinery on the ground, and the shaft being rapidly and efficiently put down. I wish I could report the same of the Sebastopol Company, who with all these works already finished and a prospect of 12 dwt to the ton, from quartz on the surface averaging 6 feet thick, are still in the same embryo state they were months back.⁴⁴

April 1860:

(Korong Division)

The mining population is as follows:

	Europeans	Chinese
Alluvial miners	22,500	500
Quartz miners	200	
Total	22,700	500

The machinery is as follows:

	At work	Idle
Horse puddling machines	50	30
Steam engines	4	3
Crushing machines	2	3

Note: there is also one crushing machine in course of erection.

The price charged for crushing quartz at Jericho and Kingower (the only places where crushing is being done at present within the division), is from 20s to 25s per ton.

Korong - Mining operations have improved here during the month owing to the late rains. Several parties are out, and small rushes have taken place in consequence; but only to a small extent of new ground has been opened. Almost all the puddling mills have been pretty steadily engaged, and are likely to be constantly employed while water is to be had. Quartz mining has remained very dull. The large and powerful machinery lately erected in the Main Flat, has stopped working, owing to some disagreement of the shareholders. One of the other crushing machines has been removed for re-erection on the Loddon adjacent to Inglewood. Fenton's and Synnot's diggings are extremely dull, the few miners remaining being chiefly employed in the old workings. A quartz vein has been discovered between the latter place and Jordan's, but has not yet been tested to any depth sufficient to prove its being remunerative. At Jordan's and Jericho a few of the abandoned claims have been reoccupied. The German Reef has yielded a large amount of quartz during the month, and some good returns are expected. At Skipper's Gully (Jordan's) one party obtained about 26 lbs weight of gold in nuggets, which will most likely lead to the discovery of more auriferous ground in the neighbourhood. At Kingower, the Union Reef is yielding payable quartz, and preparations are going on for the purpose of testing its value to a greater depth; but the great influx of water, combined with the hardness of the rock, renders it a very slow process. From the Bonaccord Reef, Long Gully, a lot of 20 tons was crushed, which yielded about 1 oz per ton. I expect a great depth will have to be attained previous to the discovery of any main reef. The few alluvial miners are mostly engaged in surfacing new ground adjoining Tumbler's Hill and McKenzie's Gully. At the latter place several good finds have taken place. The largest nugget I know of weighed 96 oz, others of far greater weight are reported as having been got. Inglewood has been somewhat duller for several weeks, although rushes have taken place weekly. An extension rush took place about the middle of the month, to a large flat situated about one mile from New Inglewood, at which place I marked off a street, and allotments for business sites, by order of the Warden. It has, however, resulted in a complete failure for the present, only a few claims having yielded payable gold. The deep leads at Old and New Inglewood is steadily progressing, and in many instances splendid results are being obtained. Several new reefs or veins have also been discovered. From the Inglewood and Welcome Reefs good crushings have taken place. At Kingower water has been found on the former reef, at a depth of about 186 feet, and the owners of the claim have registered it, being unable at present to contend with the hard sinking and water. The steam pumping engine lately erected on the Loddon is supplying about 20 puddling machines and 100 toms situated on the Sandy or Bulla Bulla Creek, where the greater portion of the auriferous stuff obtained near New Inglewood is washed. A large population has congregated around the washing place. A small crushing machine is being erected near the washing place; to be worked by horse-power. Extensive crushing machinery is already required on this field, situated in the neighbourhood of the reef...⁴⁵

⁴⁴ Mining Surveyors' Reports, March 1860

⁴⁵ Mining Surveyors' Reports, April 1860

May 1860: Korong Division

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	16,400	260
Quartz miners	650	
Employed at machines	50	
Total	17,100	260.

The machinery is as follows:

	At work	Idle
Puddling mills	66	20
Steam engines	5	3
Crushing machines	3	3
One crushing machine in course of erection.		

Quartz crushed at Jericho - average yield about 1-1/4 oz per ton; price per ton crushing 20s. Loddon, cement about 40 tons - yields 3 oz per ton; charge for crushing 30s per ton. Quartz tailings and quartz - Kingower 160 tons - average yield per ton 1/2 oz; price per ton for crushing 20s. Korong - Mining operations have not attained so lively an appearance since the late rains. A few of the miners here are prospecting in the scrub, and meet at times with payable ground, but the majority remain working in the old ground, so that those prospecting are quite insufficient (in number) for the development of gold, where it is so irregularly distributed. The crushing machines, and quartz mining are temporarily stopped, pending the settlement of disputes in the Court of Mines. The puddling machines are actively employed and generally yielding favourable results. Kingower - The majority of the alluvial miners have been more fortunate than usual, several small patches of remunerative surfacing, and shallow ground having been opened adjoining the old workings, but nothing causing a rush has been discovered. Quartz mining is still receiving a fair amount of labour and capital from the few inhabitants. On the Union Reef, very little quartz has been raised for some time, the claimholders being with few exceptions engaged in sinking for a second lode. The Amalgamated Company on this reef sold their interest therein, and the new owners have made application for a lease of the ground. The depth attained in the claim is 216 feet. The prospectors of the Bonaccord Reef are still obtaining gold, but not in paying quantities. A prospecting party are engaged on a reef, from which gold was obtained several years ago, situate about half a mile south from the Union Reef. Fenton and Synnot's - These diggings remain almost deserted, there being no new discoveries in the neighbourhood. Jericho - Here several of the quartz claims formerly abandoned, are being prospected again. The German Reef is the only one from which payable quartz is being obtained, and nothing rich has ever been obtained on it, but the quartz is easily got out, and averages about 1 oz per ton. Nothing is done at alluvial mining, except by three or four men. The Milkman's Reef, at Jordan's, is re-occupied, after being registered for a period of six months. McIntyre's - The Eclipse and Marshall's Reefs are both being prospected. The latter yielded stone about seventeen months ago, seldom equalled in richness; since which time it has been regularly prospected, without the shareholders meeting with any encouragement. In alluvial mining nothing of note has been discovered for a considerable period. Inglewood - This is still the chief centre of population within the district. The number of miners has decreased gradually during the month; the majority of claims on the deep ground being nearly worked out. The deep lead at New Inglewood is progressing, and has now exceeded 100 feet, with water, and if followed much farther, the water may be expected to prove troublesome. The lead lately has been very narrow, and getting considerably poorer, so that very little encouragement is in view for the individual miner to follow it much farther. The deep lead at Old Inglewood is progressing with very favourable results; it has now attained a great length and depth, but the sinking is easier than formerly, and there is every indication of it continuing payable for a considerable distance. The shallow portions of the diggings opened lately have soon been worked out or temporarily abandoned by the majority. Several parcels of cement from the deep lead, New Inglewood, have been crushed at Sandy Creek (Tarnagulla) during the month, yielding from 3 to 10 oz per ton; some few lots have also been crushed at the machine lately erected on the Loddon. Some claims at the Surface Hill are expected to yield at the rate of 2 oz per ton to the depth of 3 or 4 feet. The cement in the deep ground is found overlying the bed rock, averaging from 2 to 8 inches in thickness, at depths varying from 25 to 80 feet. Quartz mining has attracted a great many speculators and others, and prospecting is carried on largely, in many localities to an unreasonable extent, although in many places here, results seldom excelled in the colony, have been obtained. Except in a few instances, the main reefs or lodes cannot be found without working or following veins from the point of discovery, which occupies a considerable time. Quartz mining here will be an extensive and permanent business on this field, and is progressing as fast as can be expected. Great caution and apathy have been shown previous to the introduction of machinery by capitalists.⁴⁶

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July 1860:

Avoca and St Arnaud Divisions:
The population is as follows

	Europeans	Chinese
Alluvial miners	9,250	700
Quartz miners	325	
Total	9,575	700

At St Arnaud new quartz veins of a payable character are frequently being discovered, but the thickness (in most cases) being only a few inches, my impression is, that in order to find a main thick payable reef, a considerable depth will have to be sunk, which can only be attained by having efficient steam machinery for that purpose. At Four-mile Flat the miners are all doing remarkably well. Several rich claims are being worked; and I am surprised this gold field (which indicates an extensive one) does not command more attention from the miners. Within the last few days several nuggets, varying from seventy-four to five ounces each, have been taken out. This lead, unlike mots of the alluvial workings in this district, as it progresses down the flat into deeper ground, instead of becoming poorer, has, on the contrary with the distance, increased considerably in value; and most unquestionably several pile claims are now being worked. ⁴⁷

August 1860:

St Arnaud Division
The population is as follows

Alluvial miners	470
Quartz miners	350
Total	820
Europeans	570
Chinese	250

The machinery is as follows:

Alluvial mining - Whims (2 at work, 2 idle)	Puddling machines (9 at work, 3 idle)
Quartz mining	Steam engines employed in winding, pumping and crushing (3 - 30h.p.)

Reef	Yield
El Dorado	from 2 to 4oz.
Ballaarat	from 1-1/2 to 4-1/2oz.
Chrysolite	10dwt. to 1oz.
Trinidad	8dwt to 1-1/2oz.
Walker's	1-1/2 to 24oz.
Stuart's Hill	1 to 10oz.
Wheal Semiramis	2oz.
Sawpit Reef	from 10dwt to 5oz.
Clarke's	2oz.
Gap, west side	from 2dwt to 1oz.
Gap, north end	10dwt. to 3oz.

The population, in general, is settled, the greatest proof of which being the survey and sale of nearly two thousand acres of town and suburban allotments, the whole of which have been purchased by the residents, the majority of whom are miners at present engaged in mining, and in some instances cultivating their ground, and in every case improving it; another proof of their permanent settlement being no inclination to leave for any rush that has occurred, even Inglewood of the Snowy River, although many, both from Adelaide and elsewhere, have passed through St. Arnaud on their way. Some have returned, and in many instances have remained in preference to leaving. The gold workings in my district consist principally of quartz reefs ... The El Dorado and Gap Reefs were the first two discovered, and have been the most prolific in their yields, having been principally worked some years ago, and the returns from which, when crushed by such crude machinery as then existed, yielded as much as 40oz to the ton on the former, and 35oz on the latter, the general average being 2oz per ton, and this taken 15 or 16 feet thick. The El Dorado on Wilson's Hill is now nearly abandoned, Messrs Lewis and Company being the only claimholders who have done any real amount of work; their claim is situate on the southern slope of the hill, the northern slope being held by three other claims, who are working some small leaders ... The Gap, like Wilson's, is being worked by three parties, two of whom are working leaders on the west side, the third working the continuation of the Gap on the northern strike. The Trinidad Reef, for some time past, has had only one party of work.

⁴⁷ Mining Surveyors Reports, July 1860

Stuart's Hill - The hill is situate about one mile and a quarter to the N.N.W. of St. Arnaud, and in a line with Wilson's Hill, the main reef from which extends to this hill, rising and dipping with every undulation of the surface, and, in one or two places, appearing above the surface for many yards, and at one (called Sebastopol) rising for a height of 30 feet, and still keeping its width of above 15 feet - (a company have leased 25 acres of this); again, dipping and crossing Armenian Gully, it shows on Stuart's Hill... On Wilson's, Sebastopol, and Stuart's Hills this mass is found to have numerous leaders on either side and, with the exception of Sebastopol, these leaders are being worked instead of the main reef; those on Stuart's Hill are the richest, 24oz per ton being obtained from unpicked stone, this being Messrs Walker and Company's claim. Messrs Cunningham and Company are also working another leader to the east of this reef ... at Sebastopol, it shows along the surface ... about 200 feet long; the St. Arnaud Gold Mining Company, having a lease of the same, have employed men to sink a shaft to cut the reef on its underlay ... they have also had men at work on the surface ... The company's dam in Armenian Gully has just been completed, the excavated reservoir being nearly 100 feet square and 10 feet deep at base, the embankment 7 feet above this; the site being most advantageously chosen, both for the convenience of machinery and the delivery of the spoil from the mine. Immediately below the dam the Chinamen are working the alluvial, depth of sinking from 18 to 22 feet, and averaging 1/2 dwt to the tub. There is no defined gutter in this gully, the gold lying at the side of little hollows in the rock, and generally about 3 inches from the bottom, in fine red gravel, the bed rock being composed of micaceous schist. The gold found in the auriferous deposits in this district, is not in the gutter or deepest ground, but about half-way up the side of the low reef, or even on the top, the gutter in nearly every instance being filled with sand. Near the Bald Hill at the Erivan Hill, situate about 4 miles to the E.S.E. of St Arnaud township, some parties are sinking on the cement hills, sinking from 13 to 20 feet deep, yield from 1/2 oz to 1 oz per load, gold fine, and the population daily increasing. At the Erivan Lead, about 2 miles NW of this, some parties are also prospecting, the yield and quality of gold being the same. At Peter's Diggings, on the same line of made hills, but distant about 5 miles, the same sinking prevails, the gold being heavier in character. In the main gully, situate 2 miles N of St Arnaud, there are a number of Europeans and Chinamen at work, mostly engaged in puddling; this gully, as before observed, having been very good, has been repeatedly sunk on, and many of the old holes filled up, the depth varying from 10 to 20 feet deep, consequently the puddlers have to take it from the surface, generally throwing the first 10 feet away, and in some instances puddling the rest, but mostly about 3 feet from the bottom, the yield from which does not average more than 1 dwt. The ranges on each side of this and the other main gully abound in reefs but little prospected. Particulars and Descriptions of Claims in Plans - El Dorado Reef, Lewis and Company. This claim has been one of the best on St Arnaud, being abandoned with the rest of the hill, after the first working, as unpayable, crushing then being five or six times its present rate. Messrs. Lewis and Company commenced to re-work it in 1858, and from their first crushing, at the depth of 70 feet, realised 2 oz per ton, and to the depth of 250 feet it has averaged 2 oz. The claim is worked by six men and one horse machine, consisting of two bevelled wheels and shaft on which is affixed the drum for rope. The whole of this claim where shown as worked, from the surface down, is timbered every three feet, even between the sheds on which mullock is stowed. [Key to General Sketch] A. El Dorado Reef. The surface a mass of quartz. No. 1 Lewis and Company claim. B. Ballaarat and Chiropolite Reefs...Plan II. a1. Walker and Company's claim, situate on the eastern slope of Stuart's Hill. This claim being one of the richest on St Arnaud. a4. Cunningham and Company's claim. This claim situate in a line nearly N and S with Walker's...⁴⁸

November 1860: (Korong Division)

The population is as follows:

Inglewood		
	Alluvial	1,500
	Quartz	4,500
Korong		
	Alluvial and Quartz	400
Kingower		
	Alluvial	1,500
Jericho		
	Quartz	250
The machinery is as follows:		
	Horse puddling machines	30
	Steam crushing machines	7
Of the aggregate of 101 horse-power and 80 stampers.		

Approximate value of entire mining plant in the district for puddling and quartz crushing, £10,500.

Inglewood. The alluvial miners in this locality bear but a small proportion to the mining population, as will be seen by the above statement, and are chiefly engaged in shallow sinking (from thirty for forty feet) and surfacing, the Daly lead, which has been laid off under the frontage system, being the only alluvial sinking which exceeds 100 feet in depth. Quartz Reefs - the quartz reefs in this district are undoubtedly the main feature in gold mining, and as far as the present depth of sinking is, is not exceeded, if indeed equalled, by any mining district in Victoria... At the head of the list for richness stands the Columbian, from which 22 tons of quartz yielded over 2300 oz of gold...A number of other reefs, viz., Buchanan's, Welcome, Daly's Inglewood, Athens, Curlew, Prussian, Dartmouth, are yielding very good returns indeed, the first four named, in particular, being remarkable for their steady yield and large body of stone. Kogong - The miners here are principally employed in puddling with horse machines, of which are there are present about 40 at work in the different gullies. There are five (5) quartz reefs at work here, and three quartz crushing machines, but not with any very great success. Jericho - The Miners here are altogether engaged in quartz crushing and reefing. The reefs, which are now taken up, having been abandoned previously as not being remunerative, are found now, at a greater depth, to be profitable. There is only one crushing machine in this place.⁴⁹

November 1860: (St Arnaud Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	500	200
Quartz miners	150	
Total	650	200

The machinery is as follows:

	No.	Horse-power
Quartz mining:		
Steam engines employed at quartz crushing	3	30
Alluvial mining:		
Puddling machines (at work 9, idle 4)	13	
Horse whims (at work 2, idle 2)	4	

[In August]...I remarked on the peculiarity of the reefs in Messrs Edwards and Company's claim on Stuart's Hill, as also the quality of gold contained therein. By this mail I beg to forward sample of unburned quartz, showing the nature of quartz and containing the silver spoken of. At the St Arnaud Gold Mining Company's lease no great improvement has taken place since my last. They have succeeded in breaking through the western reef about eight feet thick, and are continuing their present level (at 100 feet) to strike the eastern reef. The western reef has but little prospect of gold in it, the shaft, in my opinion, being too far south; the same rule holding good on this and nearly every other reef on St Arnaud and that which I explained in my September report of the Chripolite and Ballaarat Reefs, viz., the dip of gold continuing with the strike of reef. On the northern end of this reef (Sebastopol) I washed from five buckets of debris about 1/1-2 dwt of gold. Wilson's Hill has been purchased from the original claimholders by a company styled the St Arnaud United Quartz Mining Company. The yield of gold from the claims hitherto worked, and the quantity of stone yet unworked, if properly wrought, would almost guarantee this company rivalling any other as yet in existence. Messrs Walker and Company, on Stuart's Hill, are still raising quartz averaging 8-1/2 oz per ton, the vein being from two to three feet thick. During this month £2500 was offered for one share in this claim. I am credibly informed £3000 has been paid for a 2/6 share in claim and 1/3 in machine. Clarke's Reef - The yield from this reef, as yet only being prospected, is between 1 and 2 oz. Bald Hill - The alluvial miners are gradually leaving this locality, owing to the extreme fineness of gold and small yield, some of whom are prospecting other hills about two miles to the south-west. When I last visited this place there was not more than forty at work. The small engine intended to be erected at the Twenty-mile Hut, to wash surface, has been removed to Ballaarat, the ground not being deemed payable.⁵⁰

Nov 1860: Moonambel - In this area, originally known as McKinnon's or Mountain Creek Rush., gold was found first in November 1860 by John and James Thomas, at what is now the village of Moonambel (means Hole-in-Mountain).⁵¹

⁴⁹ Mining Surveyors' Reports, November 1860

⁵⁰ Mining Surveyors' Reports, November 1860

⁵¹ James Flett, 1979, The History Of Gold Discovery in Victoria, pp445-446

Nov 1860: Redbank - Hines Diggings. Redbank Rush, about three miles north of Moonambel, occurred at the same time as the rush to Mountain Creek ... (Nov 1860) ... and the major reward for the discovery was granted to John Parker, W. Hall and others, for the discovery of 'Redbank, etc.', which was stated otherwise as 'Redbank Hines etc.' There was a further reward paid by the Prospecting Board also, to J. Dunleary, T. Smith and Joseph Henderson, for the discovery of 'Redbank' in January 1861. A local paper mentions a J. White as a member of this party, and Henderson later told of this discovery, which was no doubt on the lower Grumblers Lead, near the town. In the first week in January 1861 there were 4000 diggers at Redbank, and a diggings had started close to Hine's Station, about two miles north of Redbank. Sequence of discoveries as follows:

Nov 1860/Jan 1861:

Redbank; lower Grumblers Lead, and diggings near Hine's Station, about two miles north of Redbank Also opened in January 1861 were New Year's Flat, a little to the west; and Pyrenees reef.

Feb 1861 Hines Diggings - main areas at Hines, which became known as Wattle Flat and German Gully, were opened in February.

1861 Another lead was opened by Germans halfway between Grumblers and New Years Flat ... Soon after the opening of Redbank and Hines diggings, fresh discoveries were made on the west side of Peter's Road, near the Cherry Tree Creek. Sing Song Gully here was opened by Hunter and Party, and Union Flat by a German party.

Sept 1861 Victoria Gully and Hard Hill were also opened, and Fighting Flat, southeast of Redbank, in September 1861.

End of 1861 Later that year the Crescent or Pinchgut Lead was opened

July 1862 Emerald Flat, about three miles on the Dunolly Road, east of Redbank, was opened by Alexander and Solomon Lowry.⁵²

1861: Stuart Mill - In April 1861 Matthew Gabriel and Michael Higgins registered the first alluvial claim in the alluvial hills at Stuart Mill (near Sanderson's Teddington Station) ... in May Samuel Fyffe opened the Greenock Reef, the first of many to be discovered ... Andrew Stranger, in June 1861, got the first gold on the site of Stuart Mill, and caused a rush in July, at which 4000 diggers opened up seven alluvial gullies. The original town after the rush was called Albert Town, and was re-named Stuart Mill in about April 1863. After the opening of the alluvial at Stuart Mill, a number of new reefs were opened and the town became a reefing one.⁵³

1861: Moonambel - Early in Jan 1861 Edward Jopliss and William Darby opened Slaughteryard Gully, just east of the rush, which was confined to an area about two miles in length, a few minor gullies to the east ... In April 1861 gold was discovered four miles west of the rush near the Adelaide Road and Four Mile Lead was opened. In May ... Forest Hut was prospected, about two miles north-west of Four Mile Rush. Wild Dog Gully, south-west was worked in various tributaries at this rush, and later, but the main workings occurred at a rush in 1890.⁵⁴

January 1861: (Korong Division)

Locality	Entire Popn	Alluvial Miners	Quartz Miners	Sq miles occupied mining	Puddling machines	Steam crushing machines	Horse power	Chinese miners
Inglewood	10,500	1,000	3,000	11-1/2	32	9	128	-
Glenalbyn	1,700	900	100	1	16 wkng/ 5 idle	-	-	{In all {about
Kingower	400	120	100	2	-	1 crshng/ 1 pumpng	17	{50 but {very
Korong	1,500	400	100	6 scattered	26 wkng/ 24 idle	2 wkng/ 1 idle	32	{much {scattered
Fenton's & Sinnot's	50	20	-	1/2	1	-	-	{
McIntyre's	200	28	10	3	3	-	-	{
Jericho & Jordan's	150	80	40	1-1/2	1 wkng	-	-	{
Total	14,500	2,548	3,500	25-1/2	108	14	177	50

Aggregate value of mining plant - Steam machinery, £17,500; puddling whims, &c., by horse and hand, £4000. Total, £21,500.

⁵² James Flett, 1979, The History Of Gold Discovery in Victoria, pp446-447

⁵³ James Flett, 1979, The History Of Gold Discovery in Victoria, pp448-451

⁵⁴ James Flett, 1979, The History Of Gold Discovery in Victoria, pp445-446

The population of the Korong division has still further decreased during this month, arising principally from the reports brought from Mountain Creek. A great many of the miners who have left this place have registered their claims to remain unworked for a period of three months, in order that they may return at the end of that period and retake possession. The reason given for registration being in almost every instance, having worked over three months without obtaining payable gold. Inglewood - In alluvial the copious rains have enabled the surfacers and puddlers to continue their operations much longer than was expected, although at this season of the year this class of mining is always dependent on a very precarious supply of water, viz., rain-fall. On Daly's Frontage Lead the shareholders have not as yet erected machinery, although from a sample of the gold taken from one of the claims, which bottomed on the reef, these men are very sanguine and are stirring themselves actively in the matter. Quartz Reefs - The number of prospecting claims granted by the wardens is six for the present months, but the applications for claims have in many instances been withheld, in consequence of the new mining bye-laws, gazetted 15th January, coming into operation very soon, which will enable the parties to obtain a large area of ground. Claims on the following reefs are yielding very steady returns, varying from 2 to 10 oz. to the ton of stone:- Colombian, Inglewood, Vulcan, Curlew, Odin, Rose Hill, Maxwell's, Buchanan's Exhibition, Sunday Morning, Kentish, Dartmouth, Welcome, &c., - These yields in most cases are confined to the immediate vicinity of the prospect claims, although in some cases they extend some distance either north or south of the prospect party. Old Inglewood - A new lead, about half a mile from Old Inglewood, was struck about the middle of the month. The prospect obtained was out of three loads of stuff, 4-1/2 oz of gold; the gold was found in a layer of cement, on sandstone. There is every probability that this discovery will be the means of recovering the old deep lead, which was lost, about six weeks ago. The depth of sinking is from 100 to 125 feet and quite dry at present. Kingower - In Old Kingower a lucky miner has caused a sensation by turning up a nugget of 18 oz amongst a quantity of fine gold; the sinking is only 3 feet; there are not above 100 miners at this place; on account of the known patchy nature of the ground the chances are few. Quartz reefs here are progressing very slowly only one or two claims being at work on these on the summit of the hill. The Engine Company, with several claims to the north, is contemplating forming themselves into a company. These claims have an enormous quantity of water, and it is found too expensive to work the claims individually. Hall's rush has been very much depopulated during the last month, as will be seen by annexed returns; the gold found here is extracted by the crushing machine at Old Kingower, being mostly found in a hard cement. Korong - The quartz reefs here do not wear any more encouraging aspect than they did at the time of my last report. I have heard that Lane's Reef Company intend giving their claim another trial on a more improved method of working than has hitherto been carried on. The alluvial miners working at the Woolshed Flat have considerably decreased, and now number only between 200 and 300. The sinking varies from 25 to 45 feet in depth, and gives the miners very fair wages, averaging from 6 to 7 dwt to 2, and in some instances as much as 3 oz to the load. There are several prospecting parties out in this locality searching for quartz reefs. McIntyre's. The registration of the reefs at this place has not expired. I have therefore nothing new to report on this part of the division. Jericho and Jordan's - I have nothing new to report in this locality to what I said last month, with the exception that one or two claims are producing stone slightly better than formerly.⁵⁵

January 1861: (St Arnaud Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	900	150
Quartz miners	150	
Total	1,050	150

The machinery is as follows:

	No.	Horsepower	Estimated value £
Steam engines employed at quartz crushing only, having one Chilean mill and battery of 9 stampers with shaking tables	2	20	6,000
Steam engine employed at quartz crushing, with battery of 10 stamps and shaking tables; drives also saw mill and fan for foundry	1	8	1,200
Steam engine being erected for winding, pumping, and crushing	1	10	1,200
Horse whims (at work 0, idle 4)	4		300
Puddling machines (at work 12, idle 6)	18		900
Total		38	9,600

Price of crushing from 15s to £1 10s per ton.

At Messrs Wright and Company's machine they have adopted an easy contrivance for getting rid of the tailings. It consists of a long vertical pipe in which moves an endless chain with pistons of round sheet iron fixed about 18 inches apart; being worked from the engine, it continually raises the tailings and water to a sufficient elevation to allow of its flowing clear of everything. A slight increase in the number of miners has taken place during the last month in this division; owing to the large rush at McKinnon's, Mountain Creek, New Year's Flat, &c., having brought hundreds of alluvial miners close on the edge of this division, numbers of whom not finding profitable employment at the rushes, have scattered themselves in and about the surrounding gullies at and near Mr Hines's station, where I think with a little energy they cannot fail to discover some other payable locality. I last week visited the rush at New Year's Flat, Mountain Creek, &c., and also that close to Mr Hines's paddock, and from the similar appearance of the country, imagined the latter to be equally as auriferous; the alluvial at Mr Hines's is not very rich, 1/2 oz to the load being the best, but when taken into consideration that to obtain a load of wash-dirt nearly two loads has to be raised, two-thirds of it consisting of quartz boulders, it cannot pay very good wages. In one claim I visited the washdirt was 18 inches thick and the gold jet black. On the shallower ground in claims adjoining the gold was quite bright. From what I saw of the alluvial and the time I spent in the ranges I do not think the country between Hines's and Sanderson's would support any number of alluvial miners. Among the ranges there are many fine sweeping gullies running in some instances five or six miles, and every probability of their being auriferous. Near to Sanderson's some Italians have been steadily at work for two years, and I am informed have lately washed a prospect from new ground of 2 oz to the load. At St Arnaud I have scarcely anything new to report except steady and energetic progress, especially among the quartz mining community, although to judge from the sluggish dullness of the crushing machines one would almost imagine both crushers and miners were asleep. It is only on visiting the reefs themselves one can see the prospect looming ahead. Several new reefs have this month been opened and all with a very fair show, although not grand, yet payable. On the older reefs things are still dull, except at Wilson's Hill, Chrysolite Hill, and Sebastopol, where either machinery is being erected or preparations made for the erection thereof. On Wilson's Hill the St Arnaud United Company are having a large dam erected and reservoir excavated, the cutting and filling in of puddled wall being completed 275 feet in length and 18 inches in the bed rock, and at the deepest point 13 feet in height. Tenders are out for sinking the main shaft, and the timber for same is on the ground, making this portion of the place look like business. Messrs Grierson and Company is also erecting machinery on the Chrysolite Hill and has applied for a lease of the same. At the Sebastopol lease Messrs Cameron and Company are sinking their main shaft about 200 feet to the north of their 100 feet shaft... At the Erwan's, Bald Hill, &c., a few alluvial miners are still at work, the ground being in general poor and patchy. Harvest time being now over, the majority of the quartz mining farmers are turning their attention to their old work until such time as their little farms may again need their attention for the next year's produce. This is the best sign of this population being settled, nearly all the old quartz miners being able to enjoy a quiet and happy Sunday among their fellow labourers, and their crops of fruit or stacks of hay.⁵⁶

February 1861: (Korong Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	2,540	50
Quartz miners	3,350	
Total	5,890	50

The machinery is as follows:

	<i>No.</i>	<i>Horsepower</i>
Alluvial mining:		
Steam engines employed in pumping	2	22
Puddling machines worked by horse-power (at work 66, idle 42)	108	
Horse whims (at work)	4	
Quartz mining:		
Steam crushing machines (at work 12, idle 1)	13	170

Aggregate value of mining plant in this division, £22,500.

⁵⁶ Mining Surveyors' Reports, January 1861

I have this month registered a prospect grant to a party on a reef, named the Permanent Reef, situate to the west of the Inglewood Reef, the yield upon which the grant was made is - One ton crushed - yield 4 oz 16 dwt 6 gr. I have also registered for prospect, Quartz Reef, situated to the south of the American Reef. Prospect - 4 tons crushed, yielded 12 oz, 14 dwt. On Daly's Frontage Lead, the United Miners' Company have nearly completed the erection of their pumping engine; in which case, I shall be able to report definitely upon the deep wet alluvial sinking by this district, a class of mining which has by no means been tested here as yet. The whole of the quartz crushing machines are now in working order, and fully employed. Old Inglewood - The shareholders on the Deep Lead, Old Inglewood (mentioned in my last report), have made an application to have the same declared under the frontage system. With the exception of the miners engaged in the above lead, and its immediate vicinity, there are very few miners employed in alluvial sinking in Old Inglewood. Kingower - Old Kingower remains very much in the same state as it did on my last report. At Evan's Gully, Glenalbyn, however, the report of the nuggets found has attracted a good many. I annex a list of the nuggets found at Evan's Gully, that I am personally aware of, although, I am of opinion that many more have been discovered that have not been reported. I have, at the request of the Warden, selected and marked off a plan for business sites, so as not to allow the erection of stores, &c., to interfere with mining operations. The continuation of Evan's Gully, inside the boundary of the Rev. W. Hall's pre-emptive right, has not proved remunerative, and is consequently abandoned. Korong - The number of alluvial miners sinking at the Woolshed Diggings is now reduced to less than 150; most of them appear to be satisfied with returns. The quartz reefs in this neighbourhood are still doing very little; in fact, they remain in exactly the same state that they did last month. I have, however, received notice that a rich quartz reef had been struck about four miles north of the township of Wedderburn, but as the trial stone, 4 tons, has not been crushed, I can give no authentic account of it. The gully in which the Government Prospecting Party (Wick's and party), reported to have discovered payable gold, is entirely deserted, not having proved remunerative; it is situated about three-quarters of a mile from Fenton's Nine-mile Hut, and nine miles S 80°W from the township of Wedderburn. Jericho - Some of the claim-holders of quartz reefs in this neighbourhood are joining together for the purpose of applying for leases, in order that they may be enabled to obtain efficient machinery, without which it is almost impossible to work the reefs in this locality. McIntyre and Jordans - In these two places no alteration has taken place. List of nuggets found at Evan's Gully, Glenalbyn:- 782 oz, 493 oz, 224 oz, 198 oz, 77 oz, 57 oz, 54 oz, several small ones various weights, from 4 to 10 oz (totalling 200 oz).⁵⁷

February 1861: (St Arnaud Division)

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	8,900	140
Quartz miners	300	
Total	9,200	140

The machinery is as follows:

	<i>No.</i>	<i>Horsepower</i>	<i>Estimated value £</i>
Steam engines employed at quartz crushing only, having one Chilian mill and battery of 9 stampers with shaking tables	2	20	6,000
Steam engine employed at quartz crushing, with battery of 10 stamps and shaking tables; drives also saw mill and fan for foundry	1	8	1,200
Steam engine being erected for winding, pumping, and crushing	1	10	1,200
Horse whims (at work 2, idle 2)	4		300
Puddling machines (at work 14, idle 6)	20		900
Total		38	9,600

Price of crushing from 15s to £1 10s per ton.

Since... my last report a great improvement has taken place in the southern portion of this division, more especially near Mr Hind's station, in the neighbourhood of which there is a population between 8000 and 9000 working miners; and yet this number could not be taken as belonging distinctly to this division, as numbers live at New Year's Flat, and walk here one and a half mile daily, consequently these would probably be enumerated as belong to the Avoca division. When I visited this place previous to my last report, I felt sure it would be the scene of an extensive rush - it has now proved payable likewise, reaching from Mr Hind's north about four miles. As the lead progresses towards the foot of the ranges, the quality of gold seems improving and loses its blackness; the average yield cannot be estimated at more than half an ounce to the load, with the boulders formerly mentioned being taken out, but the quantity of wash-dirt in many places increases, some taking two or three feet. A great and serious drawback to the development of this portion of the district is the great scarcity of water during these summer months, although with a slight outlay of capital more than enough could easily be stored for the years. From the station north three miles and half a party of Germans have opened a new lead on the Union Flat; from seven tubs they washed 12-1/2 dwt of coarse gold; the formation being a gutter about thirteen feet wide, the high reef on the east being steep and hard, the auriferous drift composed of red gravel and hard sandstone boulders, with a little quartz, the most and largest boulders lying in immediate contact with the low reef. On the northern side of the ranges, and about four miles from Messrs Sanderson's, a number of prospecting parties are busily at work, in some instances gold being found, but not as yet in payable quantities. About two miles north-west of Mr Hind's another party has secured a prospecting claim; depth of sinking 18 feet; prospect, 10-1/2 dwt per load - gold coarse. About one mile south-west of Hind's a reef has been opened, but with what result I cannot report, but hope to do so more fully in my next, as also of the leads at and near Hind's, as by that time they will be more fully developed. At St Arnaud the reefing community is quite settled, not more than half a dozen having left for the new rushes. Several new reefs have lately been opened, with very good prospects. Messrs Youngson, Munch, and Company crushed three tons from the Musical Reef, which gave 6-1/2 oz per ton... On the eastern side of the old alluvial gully, New Bendigo, Messrs Miller, McMahon, and Company have struck at the depth of 70 feet the cap of a reef they have called the Bristol. AT the Sebastopol lease (C.T. Cameron) the work is going on in the same sleepy style as hitherto. At the St Arnaud United (C.F. Harvey) the main shaft is being rapidly sunk, and when finished, if completed in the same style, will be a credit to the contractors. At the northern end of this lease another of four acres has been applied for, by the shaft-contracting parties in the former lease. Messrs Wright, Walker and Company's claim still continues to yield well; the mining dispute in this claim has not yet been decided.⁵⁸

April 1861:

(Korong Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	3,800	75
Quartz miners	3,200	
Total	7,000	75

The machinery is as follows:

	<i>No.</i>	<i>Horsepower</i>
Alluvial mining:		
Steam engines employed in pumping	2	22
Puddling machines worked by horse-power (at work 80, idle 33)	113	
Quartz mining:		
Steam crushing machines (at work 15, horse-power 213, idle 1, horse-power 8)	16	221

Aggregate value of mining plant in this division £29,000.

I have during the month registered the following prospect claims: One alluvial, situate in Dalmatia Gully, about quarter of a mile west of Wedderburn township; shallow sinking, prospect produced 12 dwt to fifteen American buckets. One alluvial, situated Gulf Road Gully, Korong, about four miles west of Wedderburn township; prospect 8 dwt to three tubs. One quartz reef, situated St John's Reef, Jordan's diggings, near Jericho; prospect produced 52 oz 18 dwt from 19 tons 13 cwt 2 qr of quartz. The mining population has still further increased since my last report, the principal attraction being the Deep Lead, Old Inglewood, mentioned in my last, and which appears to have fully realised the hopes entertained of its proving a good rush. The population at this place, which last month did not exceed 500 persons, now numbers considerably over 2000, and is daily increasing. The sinking in this lead is now over 130 feet, but as yet quite dry. The prospects obtained from the last holes bottomed show an evident improvement on the previous ones. The average yield of several claims bottomed within the last week would be from 4 to 6 oz to the load. The lead, which at first starting was only payable one claim wide, has now considerably opened out. I have marked out sites for places of business, &c., nearly all of which have been readily occupied. Between the old deep lead and the new lead a claim has been bottomed and a very good prospect obtained, and from this circumstance I am led to believe that the supposition that the new lead was a continuation of the old one to be perfectly correct. The deep lead at New Inglewood or Daly's frontage lead, as it is called, has not been able to overcome the water, although they have steam-power to assist them; I have, therefore, nothing new to report on since my last returns. The alluvial sinkings at Old Kingower and Glenalbyn have, this month, obtained several more nuggets, although not so large as reported previously; many of the miners have taken up claims on Old Inglewood rush. A small rush took place in Scrubby Gully at the commencement of the month, in consequence of some good heavy gold having been found in a prospecting claim, but since that time many of the parties have left disappointed. At Korong, a good deal more activity has been displayed in shallow sinking, on account of several claims in various gullies giving very satisfactory returns... The puddling machines in this district are now getting ready for work in earnest, as most of the dams are full, owing to the copious supply of rain we have had lately. In Inglewood, the quartz reefs have this month proved very satisfactory. Raising the quartz, however, is at present a much more expensive operation than it should be, on account of every claim (with very few exceptions) employing men and the windlass to hoist with. One claim on the Columbian Reef which, from a depth of between 80 and 90 feet, obtained over 100 tons of quartz, calculated the cost of raising to be 23s per ton. The Old Inglewood prospectors have, since my last report, erected a powerful engine and a battery of stampers on their claim; their claim having all the appearance of lasting for years.

<i>Name of Reef</i>	<i>Depth from Surface</i>
Maxwell's Reef	25 ft
Maxwell's Reef	80 & 100 ft
Inglewood Reef	80 ft
Kentish Reef	105 ft
Morning Star Reef	50 ft
Daly Reef	10 ft
Potter's Hill Reef	90 ft
Odin's Reef	120 ft
Dartmouth Reef	6 ft
Columbian Reef	80 ft
Welcome Reef	75 ft
Hope Reef, Kingower	-

At Korong, the quartz reefs have been very inactive, and have made no further progress than reported by me last month. In Old Kingower, the Hope Reef, it is rumoured, has struck gold, very rich indeed; but no authentic information has, as yet, reached me. At McIntyre's, some of the quartz reefs which had been previously abandoned, and which are now held as extended claims, give very fair promise of proving remunerative, although they have not, as yet, had time to have the stone properly tested. In Jericho, the quartz reefs are now yielding steady profitable returns; during the last month the average yield of gold on the several reefs has been from 2 to 3 oz per ton, and the thickness of the reefs themselves average 9 to 10 feet. Johnston and party, who have applied for a lease of part of an abandoned reef are about putting up an effective crushing machine and machinery for raising quartz. In Jordan's, a very good yield has been obtained from an abandoned reef.⁵⁹

⁵⁹ Mining Surveyors' Reports, April 1861

April 1861: (St Arnaud Division)

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	10,000	120
Quartz miners	600	
Total	10,600	120

The machinery is as follows:

	No.	HP	Est value £
Steam engines employed at quartz crushing only	2	20	6,000
Steam engine driving saw and crushing quartz	1	6	1,200
Steam engine for crushing and pumping	1	10	1,200
Steam engine being erected for crushing purposes only, with plant	1	60	6,000
Horse whims (idle 3)	3		300
Puddling machines (at work 121, being erected, and idle 29)	50		900
Total			14,400

The population in this division has slightly decreased during the last month, owing to several minor rushes having occurred in its immediate neighbourhood. At Hines' and in the surrounding neighbourhood several prospecting claims have been applied for, some with very good prospects. At Sing Song Gully, 1-1/2 miles west of the Ten-mile-hut, Hunter and party obtained a prospect of 2 dwt to the bucket, also two small pieces weighting respectively 2 and 3 dwt from the bottom of their shaft, sinking four feet; on the following morning a rush took place when 60 or 70 holes were bottomed, but with the exception of one claim, in no other has gold been found. On the same day a prospecting claim was applied for in the deep ground at Hines, prospect 1 dwt to the bucket; gold coarse, depth 60 feet, require slabbing, 10 feet water in the shaft when inspected. Scarcely anything worth recording was doing at Hines proper, the ground still continuing patchy, the general yield of good claims not being more than 10 dwt per load. The reefs in this portion of my division are yet being worked, but in the absence of all crushing machinery (the nearest being 20 miles) it is rather difficult to ascertain by a small trial, the likely yield of the quartz.

On the Bristol Reef, New Bendigo, the claims are nearly all being steadily worked. For some little time they were all but abandoned, but the discovery of gold in No. 4 North and No. 3 South, has given an impetus in the right direction to those who were doubtful. At the Chrysolite Hill, on the so called Musical Reef, No. 1 East has succeeded in striking what they presume to be payable quartz... From the Prospect Claim a kiln of quartz supposed to yield 7 or 8 oz per ton was lately crushed; from the first 5 tons they obtained a yield of between 5 and 6 oz per ton; the remaining 11 tons when crushed did not yield 1/2 an oz per ton, an apparent mystery that has not yet been solved; the quartz when landed from the shaft being thrown carelessly on the kiln to be burned, from thence carted to the machine and deposited outside, to be wheeled in barrows and weighed as required, so that it would seem almost impossible for them not to be well mixed, and from which a trial of 5 or 6 tons should be a fair sample; whether from a fault or defect in the mill or an unexampled peculiarity in the quartz, is as yet unknown, no such result has ever yet been found by using the same mill. Messrs Gurison, Edgar, and Company have nearly completed the erection of their engine, &c. for pumping and crushing from their deep shaft, situate on lease south of St Arnaud United Company. The progress of this company is watched with great interest by many... The shaft at present is over 200 feet in depth. The piping on the ground is Co. Anderson's patent paper pipe, the use and result of which is watched with more than usual interest. At the St Arnaud United the works are still progressing vigorously, nearly all the machinery is on the ground (and contracted for) to be perfectly ready in eight weeks, during which time the company intend carrying a drive through the point or saddle of Wilson's Hill, over 420 feet in length, so as to convey their water from the reservoir to their engine shaft, the latter being about 32 feet above the base of the reservoir. At the Sebastopol Company there is nothing at present doing. Most of the other reefs in this neighbourhood are either abandoned or registered. The quartz from Messrs Walker and Company's claim does not now average 3 oz per ton.⁶⁰

April 2, 1861: Government Reservoir, New Inglewood - Work is rapidly progressing. It is situated at the lower end of Bullfrog Gully, above Dusty Town. The embankment is about 18 chains in length and 14 feet above the surface. Some 70 to 80 men and 10 to 20 horses are employed.⁶¹

⁶⁰ Mining Surveyors' Reports, April 1861

⁶¹ Burrabungle, Korong Historical Society, 1988 - Extracts from newspapers

May 1861:	(Korong Division)		
		<i>Europeans</i>	<i>Chinese</i>
	Alluvial miners	4,000	80
	Quartz miners	3,000	
	Total	7,000	80

Total number of persons of all classes residing within the Korong Division, 16,300.
The machinery is as follows:

	<i>No.</i>	<i>HPr</i>
Alluvial mining:		
Steam engines employed in pumping	2	22
Steam engines crushing (at work 16, 221 horse-power, idle 1, 8 horse-power)	17	229
Puddling machines worked by horse-power (at work 85, idle 24)	109	
Aggregate value of mining plant in this division, £32,000.		

Prospects obtained and registered: Alluvial - Deep Lead, Old Inglewood - Prospects obtained - 1 ton cement yielded 1 oz 13 dwt. Randall's Gully, Korong, 15 feet sinking, 1 oz to the load. Menzies' Flat, Inglewood, 8 to 15 feet sinking, prospect 3 dwt to 4 tubs. The mining population remains about the same as it did last month, the slight increase in the number of alluvial miners is, in a great measure, owing to some of the quartz miners having registered their claims for the purpose of working the alluvial. The Deep Lead, Old Inglewood, has still a great number of men at work, a great many holes have bottomed on gold (between sixty and seventy); although the average yield is not so good as reported last month, the majority of the claims are yielding from 1-1/2 to 2 oz to the load. The claims ahead show signs of very soon striking water, one claim indeed has already struck it at 142 feet. Over 1,200 men are shepherding on this rush. Although the lead is widening considerably it is by no means increasing either in richness or depth of wash-dirt. Frontage Lead, New Inglewood - The Engine claims have bottomed their shaft at 130 feet, on soft pipeclay, having gone through a layer of cement; about four feet from the bottom they opened out a drive 25 feet, when they crossed a gutter 15 feet wide with a very great quantity of water. The prospect they obtained from this gutter was only 1/2 oz to the load, an amount not at all remunerative, and in consequence many of the claims on this lead have suspended operations. The owners of the Engine claim, however, are now driving on in the hopes of getting a different run of gold.

The alluvial diggings at Old Kingower and Glenalbyn have not been so prosperous as they were last month, although several nuggets have been obtained; this is owing, I presume to the thinness of the population, as most of the miners from these places are now working at the Deep Lead, Old Inglewood. The discovery of good gold in a claim at Scrubby Gully, mentioned in my last, has been confined to the claim. At the Pick and Shovel Flat several nuggets have been obtained, the largest being nearly seven pounds weight. A discovery and application for a prospecting claim was made to me, in a gully situate about 14 miles north of Wedderburn Township, which was expected to turn out very well; but the expectations of the prospectors have not been realised, and there are at present only about 30 miners at work, very few of whom are making wages. A great many of our puddling machines have been enabled to work this month on account of the seasonable supply of water, and in most instances doing pretty well. The quartz reefs, Inglewood, still retain the satisfactory position they assumed last month. In one instance, on Buchanan's Reef, a very good lode of stone was struck a considerable depth below the water level, viz., 240 feet. The celebrated Columbian Reef, in No. 1 North, has struck another lode more to the eastward of the last. The average yield of the quartz crushed during the month has proved highly satisfactory. In Old Kingower, quartz mining is progressing but slowly, and the report last month of the Hope Reef having struck stone of extraordinary richness has, upon investigation, proved to be a fallacy. At McIntyre's the claimholders I spoke of in my last on Marshall's Reef are still persevering in their attempt to discern the lost run of the gold, which, some time ago, was found on the surface in such extraordinary quantities, but abandoned in consequence of the original finders being unable, after considerable labour, to trace its course. The quartz reefs in Jericho are still proving remunerative and have rather advanced since my last report. The great width of the reefs in this place enables the shareholders to work comparatively poor quartz to advantage. The different reefs yielding an average of 1 and 2 oz, and sometimes as much as 2-1/2 oz per ton. The reefs at Jordan's remain in the same state as mentioned in my last, viz., little or nothing doing on them.⁶²

⁶² Mining Surveyors' Reports, May 1861

May 1861:	(St Arnaud Division)		
		<i>Europeans</i>	<i>Chinese</i>
	Alluvial miners	8,000	100
	Quartz miners	600	
	Total	8,600	100

The machinery is as follows:

	<i>No.</i>	<i>HP</i>	<i>Est value £</i>
Steam engines employed at quartz crushing only	2	20	6,000
Steam engine driving saw and crushing quartz	1	6	1,200
Steam engine for crushing and pumping	1	10	1,200
Steam engine being erected for crushing purposes only, with plant	1	60	6,000
Steam engine in connection with above plant, for supply of boilers in case of accident, &c.	1	1	
Horse whims (idle 3)	6	300	
Puddling machines (at work 36, being erected, and idle 15)	51	36	1,530
Total			15,930

The population in this division has greatly decreased in consequence of several rushes to Dunolly, Navarre, &c., having lately occurred. In the immediate neighbourhood of St Arnaud the population has slightly increased, as it always does towards the winter - many miners knowing the alluvial ground in this vicinity returning from other fields there being ground near and around St Arnaud which would pay better for working than almost that of the best of the late rushed, provided the supply of water were sufficient. Generally in this division but little in the alluvial is doing except at Hines, and there it is only the number of miners which make it appear so, as the average of the dirt washed from 1-1/2 dwts to 7 dwts, after deducting only the actual expenditure, leaves scarcely a subsistence to those working. In quartz mining the state of things has improved, many new and promising reefs being opened, whilst many others are being diligently prospected or eagerly sought. This class of mining has for a considerable time been the only support of this district, scarcely any but puddlers turning their attention to the alluvial. In the immediate neighbourhood of St Arnaud only three alluvial gullies have been worked, and in each instance proved highly auriferous. From St Arnaud there is a radius of seven miles of splendid looking country, and almost wholly untried, scarcely any of the (apparently) fine auriferous looking gullies being tried at all... The reefs at Hines are looking very much better than they have yet done. On the Cambrian the great drawback is the heavy body of water. On the Liverpool Reef where they have long continued prospecting but with a poor prospect, I am glad to report they have at last struck quartz apparently highly remunerative. At St Arnaud, the Bristol Reef or supposed continuation thereof has lately produced some splendid stone, supposed by those who have the claim to yield 8 or 10 oz per ton.

The Sebastopol lease (C.F. Cameron's) has been jumped by some parties and the evidence taken as to the cause by Mr Warden Webster last court-day - the result is not yet known. The St Arnaud United have nearly completed all their works; the main shaft is nearly down its depth, the battery erected, the engine nearly read, and the tunnel for the conveyance of the water through the hill from the reservoir to the engine shaft, partly through; the raising of their first quartz as a trial crushing, I believe to be contracted for. On the Chrysolite Hill, Messrs Edgar and party have completed all their works, and the engine is I believe to be set in motion to day, so that this reef (the Ballaarat) providing the company are not deceived in the capability of their engine, &c., will at last have a fair trial.⁶³

June 11 1861: It is reported that some ironstone and quartz, thrown out when the Dusty Town Reservoir was excavated, was crushed yesterday, and yielded 2 ounces to the ton. Every available foot of ground on the supposed line of the reef was at once rushed.⁶⁴

Jul 1861-Oct '64: Inglewood - Jersey line of reef; from July 1861 to October 1864, 3408 tons of quartz were crushed, which yielded 9.897 ounces ... and several claims south of the prospectors gave equally good returns ... Still further south a claim known as the Victoria Company's was worked with good results, and from May 1862 to April 1864, 2159 ounces of gold were obtained.⁶⁵

⁶³ Mining Surveyors' Reports, May 1861

⁶⁴ Burrabungle, Korong Historical Society, 1988 - Extracts from newspapers

⁶⁵ Alan M Nixon, 1982, Inglewood Gold, p119

- August 26, 1861:** No.11 Maxwell's had their first crushing last week, and the result was very satisfactory. Four tons of stone having yielded 30ozs. ... No. 8 obtained 12dwts to the ton. No. 3 have finished their crushing and the result was three fine cakes (ingots) of gold weighing 517ozs. The prospectors on the Inglewood have struck the reef in their water shaft at a depth of 150 feet and are now raising some first rate stone.⁶⁶
- Jan 24 1862:** In November 1859, the site of the present town of Inglewood was covered with a thick scrub through which a human being had seldom if ever, passed. It was so dense that cattle would hardly venture into it. The miners, not deterred by the hardships before them, penetrated to a spot since named Potter's Hill, and discovered the precious metal in paying quantities. This fact becoming known, the mallee soon fell like corn before the reaper, and by the end of Jan 1860 the place, which, only a short time before, had been a dreary waste, was teeming with thousands of human beings anxious to participate in the treasures which lay hid beneath the surface.⁶⁷
- 1862/1864 :** Jardine's Lead was opened and rushed, west of St Arnaud in 1862, and in August Peevor's Flat, about a mile ahead of the workings at New Bendigo Gully, was opened and rushed, at what was known as Mogg's Rush, after the squatter. The diggers called it Peevor's after the prospector. Wagner's and Cochrane's Hills near Peevor's Flat were also worked at this time. Other places then worked were Salter's Hill, Bell's Hill, and a place called Scrub Rush, five miles east of St Arnaud. Geyer's Hill was also worked at the time of Scrub Rush, in December 1864. ⁶⁸
- 1862:** Inglewood - Columbian Line of Reef. March Reef, opened in 1862 ... was worked for an average of 23 dwts from 5098 tons up to March 1865. Pumping, winding and crushing machinery was erected...⁶⁹
- 1862:** Inglewood - The Maxwell's Line of Reef. The third great line is that known as the Maxwell's ... About the discovery of this reef some romantic stories appeared in the *Argus* in 1862. The reef was discovered through organised prospecting efforts. The result was the discovery of a body of stone about thirty ft wide, and the ten tons taken indiscriminately from this width yielded 40 ounces. During the next two years they crushed 1762 tons for 5915 ounces ... Altogether the prospectors seem to have taken out about 10,00 ounces, or close to a third of the total yield from the line. Other claims were at work along the line, and seductive little items like the following appeared about the time. Maxwell's 100 tons yielded 342 ounces; 58 tons yielded 320 ounces; 150 tons yielded 262 ounces ... and so on. The Enterprise, Concord and other companies on the Maxwell line of the reef were also highly successful ... South of the Maxwell's group, good yields were obtained from the City of Bath and Nairnshire ... Still further south are the Buchanan's and American reefs, still on the Maxwell line, and from both of these large returns were obtained.⁷⁰
- 1862/1863:** Inglewood - Jersey Line of Reef. Victoria Company - south on the same line. March 1862 to June 1863 crushed 2864 tons for 9,160 ounces of gold; paid out £7280-8-2 in dividends.⁷¹
- 1863:** Inglewood Reefs. Standing on the top of the Inglewood Town Hall, the spectator has spread out before him the panorama of the proved Inglewood Reefs, which consist of three main lines, viz, the Maxwell's to the east, the Columbian, in the centre, and the Jersey, to the west.⁷²
- 1863:** Sandy Creek was rushed. Near Stuart Mill.⁷³
- 1864:** Darling Flat Rush/Stuart Mill - In May 1864 there was a rush to a place called (after the Governor) Darling Flat, on Reedy Creek, near Rostron's, about four miles north of Navarre. This was soon deserted, but good gold was struck in August. ⁷⁴

66 Burrabungle, Korong Historical Society, 1988 - Extracts from newspapers
 67 Burrabungle, Korong Historical Society, 1988 - Extracts from newspapers
 68 James Flett, 1979, *The History Of Gold Discovery in Victoria*, p452-453
 69 Alan M Nixon, 1982, *Extracts from the Mining Record - July 1863*, pp106-111
 70 Alan M Nixon, 1982, *Inglewood Gold*, p115-116
 71 Alan M Nixon, 1982, *Inglewood Gold*, pp111-112
 72 Alan M Nixon, 1982, *Inglewood Gold*, pp107-108
 73 James Flett, 1979, *The History Of Gold Discovery in Victoria*, pp448-451
 74 James Flett, 1979, *The History Of Gold Discovery in Victoria*, pp448-451

Feb 3 1864: Report on a Rush at Glenalbyn. Glenalbyn, about 2 miles north of Kingower, between 600 and 700 miners had marked claims. The ground is new.⁷⁵

March 1864: (Korong Division)
The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,200	300
Quartz miners	1,300	
Total	7,950	300
The total number is thus distributed:		
New Inglewood	4,500	
Old Inglewood		150
Korong	1,500	
Jericho	250	
Kingower	750	
McIntyre's	300	
Sinnott's	100	
Burke's Flat	100	
Loddon	600	
Total	8,250	

The machinery is as follows:

	At work	Idle	Aggregate hp of steam engines
Quartz Mining:			
Steam pumping machines	2	3	22
Steam Crushing machines	16	3	264
Whims	22		
Whips	24	2	
Alluvial mining:			
Whims	6		
Whips	3		
Puddling machines	70	80	
Total value of all mining plant in the division, £35,000.			

Quantity of quartz crushed during the quarter, and the gold obtained therefrom:

	<i>Tonnage crushed</i>		<i>Yield</i>
	oz	dwt	
Maxwell's Reef	786	610	15
March Reef	1,642	1,719	
May Reef	7	4	
Rising Sun Reef	84	24	19
Daly Reef	29	5	10
Poverty Reef	17	9	16
Vulcan Reef	464	319	3
Great Western Reef	57	8	8
City of Bath Reef	50	20	2
Inglewood Machine	1,054	865	16
Eureka Reef	4	8	12
Goodwin Reef	114	75	18
Zeldham Reef	31	12	4
Nairnshire Reef	8	1	16
Blackman's Reef	10	3	10
Peter's Reef	8	1	16
Reality Reef	103	176	
Leicester Reef	140	60	6
Jersey Reef	182	137	15
Polka Reef	50	15	14
Great Eastern Reef	13	4	12
Duke of Cornwall Machine	146	19	17
Lady Darling Machine	228	272	2
Victoria Machine	204	112	4
Evening Star Reef	2	2	12
Total	5,433	4,493	19

Although more activity prevails amongst the quartz miners in Inglewood since my last report, in consequence of the alluvial gold obtained at Raywood, enabling miners to support their mates working our quartz reefs, sufficient time has not elapsed yet to develop the new claims taken up... The March Reef, Inglewood, is in my opinion likely to continue payable for some time to come. This reef is now very nearly half a mile in length, and the Reality Prospect Claim, which has returned a handsome dividend to the shareholders, is a continuation of it. This reef is running parallel to the course of the old alluvial rich lead, which caused the first great rush to Inglewood. Very little is doing in alluvial sinking in Inglewood, and several puddling machines which were at work last month are idle this. At Korong neither the quartz reefs nor alluvial mines have obtained any gold worthy of notice. Kingower quartz reefs are also at a standstill, although the alluvial sinking at Glenalbyn seems to prove highly satisfactory to those who have 'struck' it. There are at present twelve payable golden holes at work, but it is almost impossible to get any true returns. These holes are all outside the private property. One party of men informed me that about four days ago they found three nuggets, weighting respectively 21, 27, and 24 oz. and yesterday one of 28 ozs. The miners inside of Mr Hall's fence have not been so fortunate, for although several nuggets have been found, I have not heard of any over 1 oz weight. Jericho is still very dull, none of the shafts having as yet been repaired since the great land slip previously mentioned. Burke's flat, which is about 5 miles from Jericho, seems to be steadily though slowly progressing, and several new claims have been taken up in that locality.(Note. - On the 26th January, 1864, Mr Mining Surveyor Robertson forwarded to the Honourable the Minister of Mines a report, stating that a rush had taken place to a spot near Glenalbyn. There were between 600 and 700 miners on the ground. The prospectors shaft was about 46 feet deep and was sunk through sandstone and pipe-clay, and the washdirt (about 1 foot in thickness) was found on a stratum of decomposed granite. Two nuggets were obtained from the bottom of the prospector's shaft, one weighting 4 oz., and the other 3 oz. Glenalbyn is situated about two miles north of Kingower, and the ground in that neighbourhood is patchy.)⁷⁶

March 1864: (Redbank and St Arnaud South Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	500	50
Quartz miners	250	
Other Population	1,200	
Total	1,950	50

The total number is thus distributed:

Redbank	300
Hines	70
Donkey Hill	60
Moonambel	100
Emerald Flat	50
Victoria Gully	140
Stuart Mill	80

The machinery is as follows:

	At work	Idle	Aggregate hp of steam engines
Quartz Mining:			
Steam engines employed in pumping & crushing		3	1 54
Whims	4		
Alluvial mining:			
Puddling machines	10	6	
Total value of all mining plant in the division, £1,150.			

⁷⁶ Mining Surveyors' Reports, March 1864

Quantity of quartz crushed during the quarter, and the gold obtained therefrom:

	Tonnage crushed		Yield
		oz	dwt
Stuart Mill Crushing Co., Lancashire Reef		150	54
Stuart Mill Crushing Co., Oxonian Reef		2	4
Stuart Mill Crushing Co., Lancashire Reef	3	5	10
Redbank Crushing Co., Brighthelmstone Reef	2	3	
Redbank Crushing Co., Richmond Reef	1	3	
Redbank Crushing Co., Darling Reef	10	10	
Redbank Crushing Co., Pyrenees Reef	10	15	
Redbank Crushing Co., Perseverance Reef	19	3	17
Redbank Crushing Co., Pyrenees Reef	42	50	
Redbank Crushing Co., Pyrenees Reef	23	11	10
Redbank Crushing Co., Perseverance Reef	14	5	10
Redbank Crushing Co., Perseverance Reef	20	10	
Redbank Crushing Co., Darling Reef	36	17	
Total	332	192	7

A considerable diminution has taken place in the population of this division for the past quarter; this may be attributed, in a great measure, to the good accounts which have been received from Cochrane's Diggings, in the adjoining division of Dunolly, in the neighbourhood of Victoria and adjoining gullies, the alluvial mining having been at a standstill for want of water, but large quantities of washdirt are being stacked for washing when the rain sets in. Quartz mining is dull, but I have to report two new reefs, from which payable stone is being raised, one in the neighbourhood of Stuart Mill, and the other at Donkey Hill; in both cases the vein is narrow, but is getting wider as the depth increases.⁷⁷

March 1864: (St Arnaud North Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	849	70
Quartz miners	168	
Total	1,017	70

The total number is thus distributed:

Rostron's	35	
Peter's, Dogbury & vicinity	830	
New Bendigo	70	
Greenock Reef	25	
St Arnaud (Proper)		127

The machinery is as follows:

	At work	Idle	Aggregate hp of steam engines
Quartz Mining:			
Steam engines	8	3	225
Alluvial mining:			
Steam engines crushing cement	2		21
Total value of all mining plant in the division, £35,000.			

The following information has been obtained relative to the quantity of quartz crushed during the quarter, and the gold obtained therefrom.

	Tonnage crushed		Yield
		oz	dwt
Auriferous Quartz	4,030	1,641	5
Argentiferous Quartz with Gold	2,210	13,000	Silver & gold amalgam ⁷⁸

⁷⁷ Mining Surveyors' Reports, March 1864

⁷⁸ Mining Surveyors' Reports, March 1864

June 1864: (Korong Division)

The population is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,300	500
Quartz miners	1,200	
Other population	5,450	
Total	7,950	500

The total number is thus distributed:

New Inglewood	4,400
Old Inglewood	100
Korong	1,500
Jericho	300
Kingower	850
McIntyre's	300
Sinnott's	100
Burke's Flat	200
Loddon	600
Caledonian Flat	100
Total	8,450

The machinery is as follows:-

	At work	Idle	Aggregate hp of steam engines	Stamp heads
Quartz Mining:				
Steam Engines Employed Pumping	2		22	
Steam Engines Employed Crushing	16	3	264	175
Whims	23			
Whips	20			
Alluvial Mining:				
Steam Engines employed Pumping	One in course of erection			
Whims	1			
Pudding Machines	75	20		
Total value of all mining plant in the division (exclusive of one steam engine in course of erection), £35,000.				

Quantity of quartz crushed during the quarter, and the gold obtained therefrom:

	Tonnage crushed	Yield	
		oz	dwt
Old Inglewood Machine	764	336	
Harvey's Machine	1,102	759	
Victoria Machine	1,275	655	6
Albert Machine	1,177	520	6
Lady Darling Machine	1,460	770	
Granite Machine	380	463	
Ward's Machine	194	103	
Catto's Machine	227	152	
March Machine	829	1,440	
Various small crushing approximate	1,000	500	
Total	8,405	5,699	

With the exception of the increase in Chinese miners, the population remains about the same as it did at 31st March 1864. Nearly all the miners who left quartz claims, to try the alluvial sinking at Caledonian Flat, and Kingower, have returned, most of them disappointed. The rush to Caledonian Flat has not been successful, although prospects have been obtained twice which looked very promising. In Kingower, alluvial mining has been receiving more attention. I attribute this to about one hundred Chinamen having arrived from Bendigo, and commenced working the shallow ground, in which they were so successful that many others were induced to follow their example, and the result has been satisfactory to the majority. There have not been as many nuggets as usual found during the quarter. An instance, however, of the careless way in which the ground was worked in former days occurred during last month:- the wife of a miner, in Kingower, had thrown the contents of a wash-hand basin outside her door, and shortly afterwards perceived something glittering where the water had fallen; on examination this proved to be an eighteen ounce nugget, pure and free from any foreign substance.

QUARTZ MINING

Nothing whatever has been done in quartz mining, although arrangements are being made with some engine proprietors for working the tailing at that place, of which a very large quantity has accumulated. Jericho is very quiet, indeed, as far as alluvial mining is concerned. But in quartz mining a considerable improvement has taken place in the prospects of the place. The shareholders of the German Reef, after having the damage done to their shaft by the land slip (mentioned in my last) repaired, have gone deeper, and have again found the reef at a depth of thirty feet below the former level, and which has yielded on an average 1-1/4 oz of gold per ton, a result which is more satisfactory than any previous crushing at a higher level. Burke's Flat is steadily persevering, but the distance which quartz has to be carted for crushing detracts materially from the profits - there being no machine nearer than from five to six miles. Korong has applied during the quarter for four prospecting claims, but in no one instance has the gold been traced above two or three claims in alluvial sinkings. Quartz claims are at a perfect standstill. The Inglewood Quartz Reefs generally are maintaining their position, although the want of steam draining machinery is beginning to be severally felt. Some have given excellent results. The Wild Rose Reef, situate near Thompson's Gully, gave last crushing a return of nearly seven ounces to the ton of quartz, and from the March Reef were crushed, last week, 200 tons of quartz, which yielded 568 ounces. With regard to the latter reef, I may add, that it every day bears testimony against the theory, 'that quartz reefs in Victoria get poorer as they get deeper.' The March Reef was first found at a depth of about fifty feet, that is several small veins were found which eventually led on to the cap of the present reef; at the fifty feet level, the yield was not remunerative the level when the cap was found (90 feet), the average yield was an ounce to the ton, with a width of reef of four feet. The published Government rewards for the discovery of new gold fields have induced two parties to undertake prospecting expeditions:- one a party of eight men, properly equipped, proceeds in a direction north of Inglewood, and its field of operations will be about twenty miles from here. The other is a party of four men, who will proceed in a westerly direction from Inglewood.⁷⁹

May 28, 1864: A Jaunt to Jericho. On Queen's Birthday, four went in a marvellously comfortable wagon, going through the top of Jersey Hill, Old Inglewood, Glenalbyn, Kingower, and his caves, then a township in name only, Wesbeach it is called - the soil formed by the disintegrated granite washed down from the hills, reminds one most unmistakably of some long high and dry sea beach. Then Jericho - Prince of Wales claim.⁸⁰

June 1864: (Redbank and St Arnaud South Division)

The population of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	400	20
Quartz miners	250	
Total	650	20

The machinery is as follows:

	At work	Idle	Aggregate hp of steam engines	Stamp heads
Quartz Mining:				
Steam engines employed in pumping & crushing		4		54 26
Whims	4			
Alluvial Mining:				
Puddling machines	10	6		
Steam engines employed in pumping & crushing		1		10
Total value of all mining plant in the division,	1,350			

Quartz crushed during the quarter by/from:

Stuart Mill Quartz Crushing Company	Eureka Reef & Lancashire Reef
Childe Bros. machine, Stuart Mill	Sailor's Reef
Redbank Crushing Company	Donkey Hill Reef, Pyrenees Reef & Appenine Reef

A considerable impetus has been given to mining in this division during the quarter. This may be accounted for by the inducement held out by the Government to prospecting parties; several have already been organised in this neighbourhood and are engaged in the outlying gullies and flats. For quartz mining a new reef has been opened near Stuart Mill; the yield is good; several claims are now at work; the depth of sinking is 60 feet, and the width is 18 inches.⁸¹

⁷⁹ Mining Surveyors' Reports, June 1864

⁸⁰ Burrabungle, Korong Historical Society, 1988 - Extracts from newspapers

⁸¹ Mining Surveyor's Reports, June 1864

June 1864: (St Arnaud North Subdivision)

The population of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	589	63
Quartz miners	215	
Total	804	63

The total number is thus distributed:

St Arnaud	149
New Bendigo	54
Forty-feet	8
Sawpit Gully	18
Armenian Gully	10
Gap Gully	7
Emu	12
Rostron's	60
Scrub Gully	6
Bristol Reef	14
Canadian Reef	4
Greenock Reef & n'borhood	23

The machinery is as follows:

	At work	Idle	Aggregate hp of steam engines	Stamp heads
Quartz Mining:				
Whims	7	2		
Steam Engines	8	1	177	84
Alluvial Mining:				
Steam Engines	2		21	8
Balfour's Pulveriser	1			8
Chilian Mills	2			
Puddlers	10			
Total value of all mining plant in the division, £28,950.				

Quartz crushed during the quarter by/from:

Yarra's engine	(from sundry small workings around)
Butcher's engine	ditto
St Arnaud United	Wilson's Hill
Chrysolite Company	Chrysolite Hill
Greenock Reef Prospecting Co.,	
No. 1 & 2 South	Main & Cross Reefs
Benson and Sutherland	Spinster Reef

Quartz tailings and cement crushed by:

Eddlestein's and Williams's engines,
at St Peters's From surrounding hill caps

Although nothing of exciting interest has occurred, there are one or two of the alluvial hill caps, by the Carripoor Creek, above Eddleston's, (among some scores of alluvial beds of the kind untried in the subdivision,) that now present from 5 dwts to 1 oz to the load, the digging being dry and easy; the prospectors, thus far, have all the place to themselves. The people of the subdivision are thinly scattered over a large area; and I believe that whatever the present number are doing, whether 20s per week, more or less, ten times as many may do equally well, there being too much ground of the same character for the present force to explore. The quantity of alluvial gold for the quarter has been the minimum for the want of water. Four of the races for ground sluicing are completed, and as soon as the wet period comes, the quantity of alluvial gold will swell in all likelihood much above its late par. Dogsbury has attracted a few from distances of late, but I am not aware of any decided case of success there; - the 'finds' being new by prospectors. The Silver Reef tributers, at St Arnaud, are doing fairly well. The gold tributers alluded to in my last report did not, all of them, realise their expectations, while others of them are better satisfied. The Greenock reefers are getting from 1/2 oz to over 3 oz to the ton, and doing well. They do not, that I am aware of, pass any selective process on their quartz. The yields of the different reefs, unperused in the division, were furnished to me by two of the earliest workers and closest observers in the place, as well as others in a position to know fact; and I have found on the whole a satisfactory agreement in the accounts given, having seen many of the reefs. I have withheld the particulars of those reefs, in the course of working, in the hope of getting true

information on the peculiarities of each for my next report; which, with the aid and permission of the owners, will be more especially devoted to them.

There seems to be an important element of efficiency in Balfour's pulveriser, at the Freiberg Company's works; and it may only require due experiment to ascertain the best working conditions of the principle to make it a valuable acquisition to their mining. They have some fifteen men employed testing parts of the ground and the powers of this machine with its concomitant processes.⁸²

September 1864 (Korong Division):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,100	500
Quartz miners	1,200	
Total	2,300	500

The total number is thus distributed:

New Inglewood	1,500
Old Inglewood	20
Korong	400
Jericho	50
Kingower	250
McIntyre's	20
Sinnott's	20
Bourke's Flat	70
Loddon and Kingarra	400
Caledonian Flat	70

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping	3			30
Steam engines employed crushing	16	2	159	239
Whims	23			
Whips	20			
Alluvial Mining:				
Whims	1			
Fuddling machines	75	20		
Total value of all mining plant in the division, £33,850.				

Quartz crushed during the quarter by/from:

Granite Company's crushing machine	Jericho
Harvey's machine	Inglewood
Victoria machine	Inglewood
Albert machine	Inglewood
Lady Darling machine	Inglewood
Lane's Reef machine	Korong
Union Reef machine	Kingower
March Reef machine	Inglewood

The mining population of this division has altered very little since my last report, a few more Chinamen have arrived (about 150), but these are all engaged in agricultural pursuits. Quartz mining has not been so remunerative as it was during the last quarter, very nearly half of the crushing machines have been idle for a portion of the past three months. Very little surface mining is going on at present, owing to the scarcity of water; this however applies to the ground above the level of the reservoir, as all the machines which can be supplied from the reservoir are kept fully at work, and with good results. A good deal of excitement has been caused up here during the last month by some Daylesford and Ballarat miners making application for some alluvial ground. The Inglewood miners have followed their example, and about 200 acres of ground have been marked off. Should the expectations of the prospectors be realised, a new class of mining will be introduced in the division, which cannot but add materially to the prosperity of the place. The March Reef (Inglewood), which I mentioned in my last report as proving that quartz reefs in Victoria do not get poorer as they get deeper, still maintains its character, i.e., it gradually improves as it gets deeper. At Korong, very few quartz reefs are being worked. A good deal of gold has, however, been obtained from the alluvial workings, principally by Chinese miners. McIntyre's is almost deserted. No one working there except the men on the ground which was reserved from sale at the last Government auction. At Jericho, the only mining operations carried on are in quartz, and, as will be seen from the crushing, with a very satisfactory result. Only a few men are at work at Sinnott's Diggings, and they are hardly making wages. A great deal of the ground which was abandoned at Kingower has lately been taken up for quartz mining; this rush was occasioned by a piece of gold weighing nearly 7 oz. being picked up near the mouth of a shaft which had been abandoned about eighteen months previously.⁸³

September 1864 (Redbank & St Arnaud South subdivision):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	680	20
Quartz miners	250	
Total	930	20

The total number is thus distributed:

Redbank	250
Hines	30
Donkey Hill	40
Moonambel	60
Emerald Flat	30
Victoria & adjoining gullies	120
Forest Hut	40
Stuart Mill	80
Darling Flat	300

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping & crushing		3		26
Whims	4			49
Alluvial Mining:				
Puddling machines	10	6		
Steam engines employed pumping & crushing		1		
Total value of all mining plant in the division, £950.				

Quartz crushed during the quarter by/from:

Redbank Crushing Company	Pyrenees Reef, Rapphoe Reef, Appenine Reef, Liverpool Reef, Brighthelmstone Reef, Richmond Reef
Stuart Mill Crushing Company	Oxonian Reef, Lancashire Reef, Eureka Reef
McDonald's engine	Lancashire Reef, Eureka Reef

About a month ago, a rush took place to Darling Flat, near Rostron's; but, as the ground has not proved so remunerative as was expected, the population is now reduced to about 300 miners in that locality.⁸⁴

September 1864 (St Arnaud North Subdivision):

⁸³ Mining Surveyors' Reports, September 1864

⁸⁴ Mining Surveyors' Reports, September 1864

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	594	50
Quartz miners	109	
Total	703	50

The total number is thus distributed:

Douglas Hill	10
Silver & Sebastopol Reef	32
Sawpit Gully Reef	4
Friberg	10
Master's Reef	2
Sindersky's Working	4
Yarrow's engine	3
Chapman & others, Chrysolite Hill	14
Frenchman's	11
Carapoole Bank	7
Forty-feet by Peters's	30
Bristol Reef	4
Butcher's Engine	7
Shuring's Reef	10
Gap Gully	175
New Bendigo	57
Wagner's Hill	2
Peevor's Flat (Moggs)	14
Cochrane's Hill	6
Tunnel Hill	6
St Arnaud	2
Brigg's Hill	10
Greenock Reef	10
Spinster & Sailor's Reef	4
Peter's	205
Dogbury	45
Emu	6
Rostron's	50
Four-mile Gully	4
Doctor's Gully	4

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	5	4	84	177
Steam pulveriser (Balfour)	1		=8	
One Appleton's Breaker	1			
Whims	8	6		
Chilian Mills	4	1		
Alluvial Mining:				
Steam engines	2		14	23
Puddling machines	12			
Total value of all mining plant in the division, £29,700.				

Quartz crushed during the quarter by/from:

Silver Mining Association	Sebastopol Reef
Freiberg Company	Walker's Reef
Yarrow's engine	Sundry small workings
Butcher's	Sundry small workings
St Arnaud United	Wilson's Hill
Greenock Reef	Prospectors and others, south
Benson's Company	Spinster's Reef
Prospectors	Sailor's Reef

Quartz tailings and cement crushed:

Eddleston's and Company	Carapool Hill caps
Williams' engine	Peter's Hill tops
Butcher and Company	Tailings
McCredie & Company	Tailings

The silver mines have thrown up 775 tons of quartz, yielding 1,476 oz of mixed metal, worth 17s per ounce. It will be seen from my returns that the suspension of the deeper wrought mines has occasioned a greater average yield than that of the preceding period, and that if one other lot raised from a depth had been taken away, the average yield in favour of the shallow workings would be still greater. The difference, in point of yield, between the upper and lower raisings being owing to nothing, as I look at it, but the gold's different mode of existence. The temporary suspension of our largest mines has driven the miners to explore for alluvial deposits, some of which are well paying close by. There are many miners, formerly here belonging, who have gone away, and some fifty, more or less, scattered about prospecting, whom I have no means of counting. The use of the reservoir supply would be the means of augmenting the raisings of gold for a year or two, it is a pity no use is made of the water there retained, and which being let out as wanted to fill little dams, at a money charge, would be doubly beneficial. The reservoir is leased to the Borough Council of St Arnaud. The race owners have failed of water this winter, the rain being less than usual, and rather than remain idle they are going to puddle portions of their grounds. The Greenock and neighbouring reefs, near Stuart Mill, sustain their yields above par. The silver miners, 8 in numbers, are subject to fluctuating results, which sometimes disappoint. At the present time they are recording some hundreds of ounces of mixed amalgam daily. During the last week, they have had 3590 ounces, value yet unknown. The gold tributers in the same concern have 250 tons, which they reckon to yield half an ounce. The alluvial discoveries, Mogg's Plain, and Cochrane's and Wagner's Hills, alongside, are retaining a few miners, and affording gold to pay them. There must be deep and very probably good ground north, east, and west, of Mogg's Diggings, but the miners have not the needful support to test the deeper portions. Gap Gully, towards T Arnaud, is paying some fairly well, and others very well; there is no spare ground here. Note:- On the 31st August, Mr Mining Surveyor Phillips forwarded a report to the Honourable the Minister of Mines, stating that two rushes had taken place; the particulars of one of which were as follow:- Depth of sinking, 30 feet; dry sinking, in cement, with very large waterworn quartz boulders; thickness of washdirt, 5 feet; average yield half an ounce of gold to the ton or load, sample not very coarse but shotty gold. The workings were called Mogg's Diggings. On 14 September, Mr Mining Surveyor Phillips ... reported as follows: 'the rush at Mogg's is being dispelled, in consequence of few or none, excepting the prospectors, bottoming on gold. The miners are passing forth, and back between this and Darling Flat. On the 15th September, Mr Phillips wrote as follows: there are about 20 people shepherding, and otherwise, around the prospectors; another 20 have gone to a near hill which yields 4 dwts to the load, dry sinking, 40 feet; the greater number having left the place for Darling Flat, and elsewhere.' On the 26th September. Mogg's (by the miners called Peevor's Flat).

The first gathering of miners having very nearly all dispersed, the place exhibits a small, but sound beginning, that, by no means, belies the general indications of the locality, there being some half dozen claims giving over half an ounce to the load, as I understood the chief storekeeper. Then near this, about three-eighths of a mile away south, on a made hill called Cochrane's Hill, another prospecting claim has been registered, depth 38 feet, 1-1/2 feet of wash-stuff, dry sinking, pipeclay bottom; this place attracted some 40 or 50 miners, until a third discovery occurred in shallow ground, about five-eighths of a mile NW of St Arnaud, in Gap Gully, but taking, apparently down in the township, on which there are to-day, over 100 miners, some of whom, they say, are getting 3 oz. to the load - there are unquestionably, many over half an ounce.. The ground in this gully is marked out close down to the private property, so that there is no more room for new arrivals. It would seem the first rush at Mogg's has had the effect of exposing those appearances, which must strike the eye of every practical alluvial gold miner coming into this division... The workings in Darling Flat have quite a normal appearance, there being some 20 persons carrying on business. I am gold there are 100 claims affording a living to the workers, and some paying well. The gold is rough and nuggetty, washdirt 1 to 3 feet thick, depth of sinking rarely exceeding 20 feet. The number of people is stated, by 3 or 4 persons to be 1000, but there is a baker, who has a better chance of knowing than men of other business, who states 600.⁸⁵

December 1864: (Korong Division)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,100	500
Quartz miners	1,100	
Total	2,200	500

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping	3	3*		90
Steam engines employed crushing	10	5	147	210
Whims	20	5		
Whips	22	3		
Alluvial Mining:				
Whims	1			
Puddling machines	70	25		

*in course of erection

Total value of all mining plant in the division, £28,500

Quartz crushed during the quarter by:

Prince Albert crushing machine
 Victoria Company crushing machine
 Duke of Cornwall crushing machine
 Lady Darling crushing machine
 Sutton's crushing machine
 March Reef crushing machine
 Granite Reef crushing machine
 Union Reef crushing machine
 Lane's Reef crushing machine

The quarter has, in this district, been unusually dull, both as regards alluvial and quartz mining. Several crushing machines have been sold and removed to other gold-fields, in consequence of not finding sufficient employment. This I attribute, in a great measure, to the expensive mode by which the stone is raised from the mines, viz., by hand labour only, for which process quartz, which in other districts would prove highly remunerate, here, does not give the miner ordinary wages. Like other gold fields, in former times, the miners of this district have been very loath to allow capital to step in and share with them. Latterly, however, several companies have been formed, which, whilst allowing the original shareholders (ie. claimholders), their fair proportion will, by the assistance of efficient steam machinery (which otherwise could not be obtained), prove that the quartz reefs in this division, if properly worked, will give highly satisfactory returns. The Dee Lead, formerly known as Daly's Lead, to the south-east of the township of Inglewood, and which has been totally abandoned for nearly three years, is also about to be worked, for which purpose powerful steam pumping machinery will be erected. From the indications which this ground gave shortly before it was abandoned (and it was abandoned solely on account of the men not being able to overcome the water by hand and horse labour), I am of opinion that a lead of gold will be found to exist. Should my surmise prove correct, the prospects of mining in this district will be materially altered for the better. The prospectors of the Bocco Flat Reef having obtained over 195 oz. of gold from about 18 cwt. of quartz, have since crushed several tons yielding from 5 to 7 oz. to the ton. The March Reef has yielded 2-12 oz. to the ton; and the Granite Company have averaged very nearly that in their few last crushings. In alluvial mining very little has been done in the division; the Old Inglewood has been entirely abandoned, having proved to be unremunerative with the present mode of working. A good deal of ground (surface), which contains a cement of from one to four feet in thickness, has lately been taken up, in consequence of the Surface Hill Company having obtained an average of over 7 dwts. to the ton from their claim within the last week. This class of mining was entirely abandoned four and five years ago, when crushing cost 20s per ton, and cartage 4s to 5s per load. The difference of the price now, and that then, gives the miner a very handsome return for his labour. Kingower has not produced this quarter any of those surface nuggets, which I have generally to report, nor have the quartz reefs in that locality yielded satisfactory results. The German Reef is the only one at Jericho, which is at present paying. No alluvial mining is going on at all, nor has there been any during the quarter. The Bourke's Flat Reef has yielded, on the average, nearly 2 oz to the ton of quartz; but as the company have not yet erected their own machinery, and have to cart their stone five miles, into Jericho, to be crushed, their returns are not so satisfactory as might be expected from the yield. At Sinnott's, a prospector in the alluvium discovered some very good gold about a month ago, which it was expected was the commencement of a 'run', but it did not extend beyond one claim, and many who went there returned disappointed.

Korong, which until the discovery of the Bocco Reef was almost at a stand-still with regard to quartz mining, has received an impetus from that find; and the result is, that a great many prospecting parties have commenced operations. Several alluvial claims (surfacing) have been lately taken up, and are being steadily worked. The Chinese in this place still continue their mining operations with their usual perseverance, and from the amount of gold I am informed they dispose of, their industry is well rewarded. The reservoir at Korong is entirely empty, and has been so for months. A quartz reef had been struck at Bocco Flat, two miles north of Wedderburn Camp, within six feet of the surface. The prospectors had been working an alluvial claim.⁸⁶

December 1864: (Redbank and St Arnaud South Subdivisions)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	680	20
Quartz miners	250	
Total	930	20

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines	
Quartz Mining:					
Steam engines employed pumping & crushing		2	1	26	49
Whims	1	3			
Alluvial Mining:					
Fuddling machines	10	206			
Steam engines employed in pumping		1		10	
Total value of all mining plant in the division, £33,850.					

Quartz crushed during the quarter by/from:

Stuart Mill Crushing Company, Eureka Reef, Oxonian Reef
McDonald's Machine, Stuart Mill, Eureka Reef, Lancashire Reef

There is nothing of importance to report upon in this division this quarter. Work on the Pyrenees Reef is suspended, awaiting the erection of pumping machinery. Darling Flat still continues to yield remunerative wages.⁸⁷

December 1864 (St Arnaud North Subdivision)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	515	74
Quartz miners	122	
Total	637	74

⁸⁶ Mining Surveyors' Reports, December 1864

⁸⁷ Mining Surveyors' Reports, December 1864

The total number is thus distributed:

Scrub Rush	40
Silver Reefs	30
Sawpit Gully	8
Freyberg	15
Master's Reef	2
Sanderske's Reef	4
Chrysolite Hill	21
Bristol Reef	8
Schewring's Reef	10
Gap Gully	40
Armenian Gully	4
New Bendigo	80
Wagner's Hill (Mogg's)	3
Peevor's Flat (Mogg's)	6
Douglas Hill	3
Frenchman's	8
Bell's Hill, Carapooree	12
Forty-feet Peter's	14
Butcher's Engine	7
Wier's Hill	8
Brigg's Hill	8
Greenock and Pioneer reefs	17
Spinster and Sailor's reefs	4
Peter's	304
Dogbury	19
Emu	4
Rostron's	8
Salter's Hill	12
Banshee	12

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	5	4	84	177
Steam Pulveriser (Balfour's)		1	=8	
Appleton's Stone-breaker		1		
Whims	10	4		
Chilian Mills	4	1		
Alluvial Mining:				
Steam engines:	2		23	14
Puddling Machines (horse)	5	10		
Sluices		4		
Total value of all mining plant in the division, £29,700				
Water-races, dams, &c., £1,09				

Quartz crushed during the quarter by/from:

Silver Mining Association	Bristol Reef, Sebastopol Reef
Freyberg	Clark's Reef
Butcher's & Company crushing	Sundry claims
Stuart Mill Crushing Company	Greenock or Sailor's reefs, Pioneer Reef
Chrysolite Company	Chrysolite claim

Quartz Tailings and Cement crushed

Eddleston & Co.	Middle Creek, cement hill caps
Williams' Engine	Peter's Hill, caps of cement

The Silver Mining Association has crushed 769 tons, yielding 3,690 oz of mixed metal, gold and silver. At Mogg's diggings the number of miners is small, in consequence of better things turning up. The Gap rush has been worked steadily and has given most of the workers above par of wages. Last winter's lack of rain has been much against the miner. There is the Scrub Rush east of the township about five miles, although not a new discovery, which has been lately attractive, about half-a-dozen claims now giving coarse and payable gold. Darling Flat is extending north-west, the last claim being registered as in my division. There is a mode of sluicing by machine pumping, applicable hereabout in many parts during the flowing of the brooks.

The cement hills are dispersed far and wide from the one little crusher of six heads at Peter's, and I verily think there is quite as much need of others as this one, for where carting costs so much, these cement beds cannot be touched. The Chinese occupy the whole of one hill in New Bendigo. They have been of late making from 10s to 20s or more per day there, puddling the mass 10 or 12 feet deep, and taking all before them. The following are registered discoveries, the latest I have made: at Dogbury, 1/2 oz to the load; at Sheoak, 8 dwt, another 6 dwt; at Carapooree Banks, 5-1/2 dwt, another 1 oz; Fyfe's Hill, 5 dwt; Mogg's Flat rush, 1/2 oz; Cochran's Hill (near it), 5 dwt; Wagner's Hill (near it), 6 dwt; besides these there are other discoveries, which will probably soon be registered. There is a company of four miners at Gyer's Hill, who have lately attacked one of these tertiary beds in a spirited and exemplary way, constructing dam, tramway, and balancing-trucks, showing how that such small forces could, in four weeks at most, subjugate into working order many similar hills in this division. All that these men now want is the use of the reservoir, without which they will have to remain idle during the coming summer. There are many such cement hills near creeks workable on a similar plan, by the aid of gravitation...⁸⁸

March 1865: (Korong Division)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,050	500
Quartz miners	950	
Total	2,000	500

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping	4	2*		90
Steam engines employed crushing	11	4#	147	210
Whims	24	1		
Whips	20	5		
*in course of erection				
Alluvial Mining:				
Whims	1			
Fuddling machines	50	45		
Total value of all mining plant in the division, £30,000.				

Quartz crushed during the quarter by:

Prince Albert Machine
Victoria Company Machine
Duke of Cornwall Machine
Lady Darling Machine
Sutton's Machine
March Reef Machine
Granite Reef Machine
Union Reef Machine

The steam machinery on the several claims mentioned in my previous report has lately been completed. The reports from Wood's Point have induced a good many of our miners to leave for that place but as very few have disposed of their interests in the reefs, I imagine that their absence will only be temporary. Korong has been exceedingly quiet during the quarter. The Rodger Reef, which promised to return such enormous dividends, having all but failed. Although the quartz reefs at Kingower have not been very remunerative during the quarter, yet the alluvial miners have done very well, a great many nuggets having been discovered. The largest of which was one of between 80 and 90 oz, discovered within a very few feet of the surface, and near to Egan's Gully. At Jericho and Jordan's no alluvial mining is carried on; and, with the exception of the Granite Company on the German Reef, very little quartz mining. From the favourable returns of the latter company, several applications have been made for abandoned ground, to give it another trial. The old Inglewood Diggings are exactly in the same state as on my last report, the miners only making wages. Burke's Flat Reefs continue to yield an average of from 1-1/2 to 2 oz per ton, but the heavy item of cartage still makes a material difference in their net profits. No applications for prospecting claims on new ground during the quarter, although a great many of the quartz reefs, which have been partially worked and abandoned, have been taken up. The reservoir at Korong has no water in it. The bank fences and valves are all in good order.⁸⁹

⁸⁸ Mining Surveyors' Reports, December 1864

⁸⁹ Mining Surveyors' Reports, March 1865

March 1865: (Redbank and St Arnaud South Subdivision):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	430	20
Quartz miners	257	
Total	687	50020

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed in pumping & crushing		2	2	26
Whims	1	3		65
Alluvial mining:				
Puddling machines	5	11		
Steam engines employed in pumping	1			10
Total value of all mining plant in the division, £1,950.				

Quartz crushed during the quarter by/from:

Stuart Mill Crushing Company	Oxonian Reef, Eureka Reef, Unexpected Reef
Malcolm's Machine, Stuart Mill	Pyrenees Reef, Lancashire Reef, Eureka Reef, Oxonian Reef, Unexpected Reef.

Although the quantity of stone crushed for the quarter is small, there have been several hundred tons raised on the Pyrenees Reef and ready for crushing. The holders are awaiting the erection of a new engine which has been recently purchased; portion of it is now on the ground, and the erection will be proceeded with immediately; when this is accomplished, large returns may be looked for. Another new reef has been discovered near Stuart Mill, it is called the Unexpected, the width of the reef, at a depth of 20 feet, is 4 feet, and the yield at the trial crushing of 24 tons was 7 dwt 22 grs to the ton. Owing to the continued scarcity of water, alluvial mining remains dull. This is particularly the case at Darling Flat, where large paddocks of dirt are heaped up, which cannot be tried till the first rains set in. A prospecting claim has been registered at the Old Slaughteryard Diggings at Redbank, the prospectors procured 18 dwt off the bottom. This is considered very good, and it is generally believed that a junction of the New Year's Flat and Grumbler's Gully leads will take place about this place. The depth of sinking is 70 feet, and very wet. The Old Redbank Mining Association Claim in Grumbler's Gully is again being worked, the Company having been re-formed with an increased capital; and there is no doubt that this ground will be fully tested.⁹⁰

March 1865: (St Arnaud North Subdivision):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	428	107
Quartz miners	145	
Total	573	107

The total number is thus distributed:

Silver & Sebastopol Reefs	30
Sawpit Reef	2
Freyberg Company's Works	17
Master's Reef	3
Sanderske's Reef	34
Chrysolite Hill	30
Bristol Reef	16
Schewring's Reef	10
Gap Gully	19
Tunnel Hill	6
Carapoore banks	8
Karney's	2
Armenian Gully	6
New Bendigo	54
Cochrane's Hill	0
Butcher's Engine	
Warwickshire Reef	4
Bell Rock	2

McCredie's Engine	4
Greenock Reef	15
Spinster Reef	4
Pioneer Reef	2
Bell's Hill	4
Frenchman's Hill	12
Salter's Hill	10
Peter's Diggings	282
Bald Hills	4
Scrub Rush	6
Wier's Hill	4
Dogbury	25
Banshee	10
Emu	17
Douglas Hill	24
Forty-feet	10
Brigg's Hill	20

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	4	3*	92	102
Balfour's Pulveriser		1	=8	
Appleton's Stone-breaker		1		
Whims	11	3	14 on cement, 8 of which idle for want of water	
Chilian Mills	2	3*		
Alluvial Mining:				
Steam engines	1	1*		23
Horse Puddling Machines	2	14*		
Sluices	4*			

*Most of the machines, &c., reported as idle, are so only from want of water; there is a prevalent suspension of work in this part from the same cause.

Total value of all mining plant in the division, £20,160.

Quartz crushed during the quarter by/from:	
Silver Mining Association	Sebastopol Reef
Master's and Party	Edwards' Reef
Butcher's and Company	Crushing Various reefs
Dower and	Sawpit Reef
Rimmer and Co.	Ballarat Reef
Sundry parties	Bristol Reef
Chrysolite Company	Various reefs
Sundry parties	Greenock Reef
Benson and Partner	Spinster's Reef

Quartz tailings and cement crushed:	
Williams' Engine	Cement at Peter's
McCredie's Engine	Tailings

Butcher and Company state that they do not keep account either of quantity of tailings run through, or of gold obtained; they have three pair of rollers at work on tailings from the various reefs. The Silver Mining Association has crushed 804 tons, yielding 1,422 oz. of mixed metal, gold and silver. Besides Masters' yield of 7 dwts of gold, there was 4 oz of silver to the ton. He has a much larger quantity awaiting water for crushing. The Freyberg Company have lately added stampers to their plant; they have now an Appleton, a Balfour, and Battery. The Silver Mining Association's ground shows better of late at both ends. The Bristol Reef is still giving work to carters, crushers, and tailings men, and I daresay it gives something residuary as a living to the workers of the reef, which says a great deal for this overlooked part of the neighbourhood.⁹¹

June 1865: (Korong Division):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	1,050	500
Quartz miners	1,200	
Total	2,000	500

Total value of all mining plant in the division, £30,000.

Quartz crushed during the quarter by/from:

Duke of Cornwall
 Lady Darling
 March Reef
 Thompson's Gully
 Victoria Company
 Prince Albert
 Granite Company
 Sutton's

The district for the quarter has been unusually dull as far as mining matters are concerned. This is accounted for by the fact of a great many miners being employed by the companies now in course of formation, for the construction of their machinery and other plant. Inglewood Quartz Reefs have not yielded, during this quarter, so much on an average as they did last quarter. The alluvial digging in the district is almost at a stand still, owing to the want of water, and at the present time there seems very little prospect of a supply. At Korong mining matters are brisker, owing to the men who took up the prospect claim (after the prospectors had abandoned it) discovering a lump of pure gold, 11 lbs troy weight. At Kingower, for the months of April and May, I have nothing specially to report, but at the end of the later month Dunmore and party took up a claim near the cemetery at Kingower, and discovered at a depth of 30 feet a stratum of gravel, which yielded some nuggets the size of a pea; on driving they found a nugget 11 oz in weight. There are now working on this ground about 150 persons. The Jericho gold fields are not yielding much, with the exception of the Granite Company and Burke's Flat Crushing. The machine returns are nil. The want of rain is being severely felt, and in consequence the puddlers have not been able to continue work.⁹²

June 1865: (Redbank and St Arnaud South Subdivisions):

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	680	20
Quartz miners	250	
Total	930	20

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping and crushing		2	2	26 65
Whims	1	3		
Alluvial Mining:				
Puddling Machines	10	6		
Steam Engines employed pumping	1			10

Total value of all mining plant in the division, £1,150.

Quartz crushed during the quarter by/from:

Pyrenees Quartz Crushing Company 12 & 13 South Pyrenees Reef, Brithelmstone Reef, 10 & 11 South Pyrenees Reef, Perseverance Reef

Very little has been done in alluvial mining lately, for want of water in these subdivisions. This applies more especially to Victoria Gully and the other gullies situated between Hinds and Stuart Mill, where gold is extracted principally by sluicing. In quartz mining, although the returns have not been so large as usual, the reefs in this locality are in a more promising state than for a very long period. On the Pyrenees reef the new pumping and crushing machinery will shortly be completed. Leases have been applied for on the Pyrenees, Richmond, and Slaughteryard Reefs.⁹³

June 1865: (St Arnaud North subdivision)

The number of miners is as follows:

⁹² Mining Surveyors' Reports, June 1865

⁹³ Mining Surveyors' Reports, June 1865

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	438	157
Quartz miners	168	
Total	606	157

The total number is thus distributed:

Butcher's and McCredie's Engines	9
Armenian Gully	20
Bald Hills	6
Banshee	14
Brigg's Hill	18
Bell's Hill	4
Chrysolite	13
Dogbury	24
Carapooee	7
Scrub Rush	6
Douglas Hill	21
Wier's Hill	4
Emu	16
Blink Bonny Reef	16
Switzer's Gully	24
Friberg Company's	18
Frenchman's Hill	10
Gap Gully	24
Geyer's Gully	4
Greenock Reef	18
Karney's	3
Master's Claim	4
New Bendigo	118
Peters's	250
Tunnel Hill	6
Warwickshire Reef	4
Wilson's Gully	20
Rimmer's Lease	6
Rostron's and Higgins's	5
Rostron's Diggings	19
Silver Mining Association	18
Sawpit Gully and Reef	4
Sanderske's Lease	6
St Arnaud United	11
Spinster Reef	2
Salter's Hill	11

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	7		70	106
Balfour's Pulveriser	1		=8	
Appleton's Stone-breaker		1		
Whims	14	3		
Chilian Mills	5			
Alluvial Mining:				
Steam engines		1*		10
Puddling Machines	6	10*		
Races and Sluices		4*		

*Idle, for want of water

Total value of all mining plant in the division (Wilson's Hill lot lately sold and taken away), £17,900.

Quartz crushed during the quarter by/from:

Messrs Butcher and Co.	Public crushing
Chrysolite Co.	For self and others
Friberg Co.	For self and others
Crushed at Stuart Mill	Greenock & Spinster Reefs

The Silver Mining Association from 274 tons 16 cwt had 868 oz of mixed metal, gold and silver.

Quartz Tailings and Cement crushed:

Williams's public crushing engine at Peters's Cement from the neighbouring hills

McCredie's machine, public crushing

The quartz miners here, chiefly tributers, are well satisfied with their doings on the whole, and they are working leased ground, which but for their knowledge and courage would be untouched. There is a newly found golden reef, about six miles north of St Arnaud township, named Blink Bonny, the specimens from which, and its appearance generally, are good and promising; there are several claims on it registered. The first thing the workers of this reef should do is to make a dam for a machine, and another above it for their domestic use; for, throughout the year, this is a comparatively dry part of the country. Some of the other parts of the subdivision, known to have gold payable for sluicing and puddling, are still locked up by drought.⁹⁴

September 1865: (Korong Division)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	815	270
Quartz miners	600	
Total	1,415	270

The total number of miners is thus distributed:

New Inglewood	550
Old Inglewood	50
Korong	425
Jericho	75
Kingower	205
McIntyre's	50
Sinnott's	50
Bourke's Flat	70
Caledonian Flat	45
Commissioner's Flat	65
Loddon and Kingarra	100

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping	6			90
Steam engines employed crushing	13	1	131	180
Whims	13	12		
Whips	15	12		
Alluvial Mining:				
Whims	1			
Puddling Machines	65	30		

Total value of all mining plant in the division, £30,000.

Quartz crushed during the quarter by/from:

Lady Darling	Inglewood Reefs: Vulcan, Leicester, Jersey, Maxwell's, European, Columbian, Old Inglewood.
Prince Albert	Inglewood Reefs: European, Vulcan, Morning Star, Maxwell's, Jersey, March, City of Bath, Robert Burns
Duke of Cornwall	Inglewood Reefs: Nelson, European, Leicester, Edinburgh, Rock of Cashel, Rising Sun, Maxwell's, Jersey
March Reef Co.	March Reef
Catto's	Bourke's Flat, Jericho
Prince of Wales Co.	German Reef, Jericho
Thompson's Gully Co.	Thompson's Gully
Wedderburn Co.	Roger's Reef, Korong
Cement crushed:	
Lady Darling Co.	Commissioner's Flat
Prince Albert	Commissioner's Flat, Deep Lead
Duke of Cornwall	Old Inglewood
Victoria Co.	Old Inglewood, Commissioner's Flat, Deep Lead
Thompson's Gully Co.	Deep Lead
Quartz Tailings crushed:	
Catto's	Jericho

Inglewood - On this field mining matters have been very dull, which has to be attributed to many of the quartz reefs having been worked to the water level, now requiring machinery to enable them to go deeper, and a great deal of ground being held under lease, for speculation, is not properly represented by labour.

QUARTZ REEFS - Nelson Reef - On this line of reef the Trafalgar Company have been formed, and a lease of their ground applied for; they have at present twelve men working, raising quartz, and the prospects recently obtained by them are very encouraging. Maxwell's Reef - The Great Extended Company are at present idle in consequence of the stone they have not being payable; I understand they are negotiating with claims to the south of them to amalgamate. The Enterprise Company, south of the Prospectors on this line of reef, has this week struck a new body of stone on their workings, just below the water level, from which good prospects have been obtained. Columbian Reef - the Columbian Company on this line of reef are just now nearly idle, owing to some defects in their machinery; they have a few men employed in the northern portion of their ground, sinking the shaft to strike the reef at a low level. Jersey Reef - The prospectors have amalgamated with a lease to the south of them, and formed a company to work the ground; it is their intention to put on shortly a number of men to raise quartz for crushing. The Victoria Company on this line of reef has five men employed prospecting their ground. March Reef - The prospects of this reef are again improving; the Unity Company's last crushing of 132 tons of stone, yielded 272 oz of gold. The Hope and Anchor Company, south of the Unity, are driving to cut the same body of stone now being worked by the Unity Company. Morning Star Reef - the claims on this line of reef is nearly all down to the water-level, and requires powerful machinery to enable them to go deeper. Surface Hill - This Company have commenced work, and are now crushing their first lot of cement; they have 2 men on the reef raising quartz.

ALLUVIAL - During the quarter there have been two small rushes: First to Commissioner's Flat; the sinking is from 50 to 60 feet, and hard; there are now about 50 men working there, apparently making wages. Secondly, to Caledonian Flat; the sinking is easy, varying from 20 to 40 feet, the prospect obtained being 6 dwts to the load, with 18 inches of wash dirt; there are now five parties working on the gold. The Inglewood Alluvial Gold Mining Company is getting up a boring apparatus to find the deep ground, and will commence operations at once. Kingower - From this field I have nothing of importance to report. Jericho - The Prince of Wales Company are raising quartz from their whim shaft, taken from the 150 feet level where the reef is 34 feet in width; they are also sinking their engine shaft to a depth of 210 feet to strike the reef at that level. At Burke's Flat the reefs are improving; 17 tons from the Black Reef produced nearly 30 oz of gold; there are now about 150 tons of stone ready for the mill. Korong - Many of the miners on this field are now turning their attention to quartz reefing. The Wedderburn Gold Mining Company struck a rich reef in their ground, at a depth of 140 feet, which has induced another party to take up ground to the north of them. At Rogers Reef, Bocca Flat, the prospectors had a crushing of 13 tons of stone, which yielded 213 oz 12 dwts of gold. About three weeks since, No. 1 South on this line of reef struck rich stone at a depth of 20 feet from the surface. There are several parties now out of prospecting for new reefs, and two abandoned reefs have been again taken up. There have been no new discoveries in alluvial; those working in the old ground appear to be making a good living.⁹⁵

September 1865: (Redbank and St Arnaud South Subdivisions)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	480	30
Quartz miners	270	
Total	750	30

The total number of miners is thus distributed:

Redbank	250
Hines	30
Donkey Hill	40
Moonambel	60
Victoria, and adjoining gullies	80
Forest Hut	40
Stuart Mill	80
Darling Flat	200

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines employed pumping & crushing		3	1	26 65
Whims	2	3		
Arastra Machine, for treating quartz tailings				
Alluvial Mining:				
Puddling Machines	7	9		
Steam engines employed in pumping	1			10

Total value of all mining plant in the division, £2,000.

Quartz crushed during the quarter by/from:

Pyrenees Quartz Crushing Company Perseverance, Brighthelmstone, Appenines
Stuart Mill Crushing Company Eureka, Unexpected, West of England, Lancashire

There has been very little doing in alluvial mining for the last three months, in consequence of the scarcity of water. On the Pyrenees Reef, the new pumping machinery has been completed, and good stone is now being raised from several of the claims. A new reef, the West of England, has been discovered in the vicinity of Stuart Mill, the first crushing from which averaged over 1 oz per ton.⁹⁶

September 1865: (St Arnaud North subdivision)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	234	225
Quartz miners	161	
Total	395	225

The total number of miners is thus distributed:

Greenock and Spinster Reefs	17
Carapooee Hills above Edelsten's	79
Rostron's Diggings & Four-mile Gy	10
Peters's Diggings	50
Sheaoak, Dogbury	46
Butcher's and McCredie's	13
Armenian and Gap gullies	33
Chrysolite Hill	14
Emu	11
St Arnaud United	23
Blink Bonny and Strathalbyn reefs	30
Stuart's Hill	44
New Bendigo and Rush	250

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	6*	1*	70	106
Balfour's Pulveriser	1		=8	
Appleton's Breaker		1		
Whims	14	3		
Chilian Mills	5			
Alluvial Mining:				
Puddling Machines	9	*7		
Races and Sluices		*4		
*Idle, from want of water				

Total value of all mining plant in the division, £17.900
Quartz crushed during the quarter by/from:

Prospectors and No. 1 South	Greenock Reef
Freyberg Company's machine	Their own and others
Chapman and Co.	Public crushers
Chrysolite Company	Their own and others
Silver Mining Association	Stuart's Hill

Cement crushed:
Edelsten's machine Crushing cement from near hills by Carapooee
Williams and Co. Cement from hills at Peters's Diggings

Quartz Tailings crushed:
McCredie's engine Their own tailings

The quartz miners have raised over an ounce of gold per man per week, during the past quarter, allowing for silver; and the alluvial miners have done very well on an average. Those who have not a share in the new rush are gone, many of them sheep-shearing, dam-making and fencing for squatters. The gold that awaits their return, all around the NW end of the Pyrenees, will take no harm, even if they stop away first to assist the purchasers of the rich land now being surveyed within a few miles, the following of which will be more generally beneficial than gold digging. Two or three of our mining enterprises here are in abeyance, and very imperfectly wrought for want of courage, and untiring capital; there are things to be done before they will be worth anything; lasting and extensive mines that require opening by people who can afford to defer results two or three years at most.⁹⁷

December 1866: (Korong Division)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	600	260
Quartz miners	555	
Total	1,155	260

The total number of miners is thus distributed:

New Inglewood	510
Old Inglewood	45
Thompson's Gully	12
Korong	430
Jericho	75
Kingower	120
McIntyre's	35
Sinnott's	60
Bourke's Flat	48
Commissioner's Flat	10
Loddon and Kingarra	70

The machinery is as follows:-

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines for pumping, winding & crushing		17	9	205
Whims	11	13		
Whips	20	9		
Alluvial Mining:				
Steam engines employed	1			20
Whims	1			
Puddling Machines	30	36		

Total value of all mining plant in the division, £36000.

Quartz crushed during the quarter by/from:

Lady Darling	Inglewood Reefs: Old Inglewood, Catherine, Leicester, European, Jersey, Morning Star, Cambrian, Camperdown, City of Bath, Dreadnought, March, Exhibition, Lady Don
Victoria	Various Inglewood reefs
Duke of Cornwall	Inglewood Reefs: Princess Alexandra, Old Inglewood, European, Welcome, Rising Sun, City of Bath, Daly, Vulcan, Caledonian
Unity	Inglewood Reefs: March, Exhibition, American
March Reef	March Reef Gold Mining Company, Burke's Flat, Inglewood
Morley and Fone	Inglewood Reefs: Gladstone, Lilliputian, Brobdignag, Newbridge and sundry others
Prince of Wales	German Reef, Jericho
Catto's	Jericho Reefs: Morning Star, German, Philips, Bird's
Thompson's Gully Co.	Jericho Reefs: Welcome, Scandinavian, Union Jack
Cement crushed:	
Duke of Cornwall	Commissioner's Flat, Deep Lead
Unity	Inglewood
Morley and Fone	Sinnott's
Catto's	Sinnott's
Mullock crushed:	
Catto's	

Mining affairs in this division have made very slow progress during the quarter. The reefs generally have not yielded so well, chiefly owing to the want of capital sufficient to properly develop the mines. Many leases have been forfeited, and some companies have been unable to proceed with the necessary vigour. Among the few instances of better aspect, the Ophir Company, on the European Reef, still continue to turn out highly remunerative stone; and the Bird-in-Hand Company, on the Leicester Reef, is looking up well. On the Maxwell's Reef, the Prospectors' Company are driving east and west, at a depth of 260 feet, for water; and from the northern workings, have obtained very good stone lately. No. 1, North, promises to repay handsomely, having a prospect of 11 dwts per ton from a small crushing. The Enterprise Company, to the southward, has been at length drained sufficiently to recommence work in the level just below water line, and have taken out some stone, which has not yielded so satisfactorily as was expected. Little besides is being done on the Maxwell's Reef. The City of Bath Reef is likely to turn out well. The Jason Company, on this line, is extracting good payable stone. The other reefs to the eastward of Inglewood are nullities at present. The Great Columbian Company's property has changed hands, and will likely furnish employment anew shortly. On the line of the March Reef, the three companies, viz., Unity, Prospectors', and Independent, have entered into an agreement to keep all their engines at work to drain the whole line to the lower levels. This important movement will, in all likelihood, very shortly be productive of the best results to the various companies, and the township generally. The Surface Hill Company's Lease has been forfeited, and the ground has been taken up anew by some of the former proprietors, under miners' rights. There is little besides of interest to record respecting the Inglewood reefs. In alluvial matters the Inglewood Alluvial Gold Mining Company are still driving for the lead, and a few miners are at work on the flat with large cradles, but nothing of importance has been done lately. At Korong, there have been three small alluvial rushes, which, however, quickly died out. There is nothing worth noticing with regard to Kingower. At Jericho, the Prince of Wales Company is still turning out consistently well, a series of their late crushings having averaged about 6-01/2 dwts per ton. At Burke's Flat two new reefs have been discovered during the past quarter, from which payable prospects have been obtained. The supply of water throughout the division has been tolerably good, but is now being rapidly exhausted.⁹⁸

December 1866: (Redbank and St Arnaud South subdivisions)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	220	10
Quartz miners	140	
Total	360	10

The total number of miners is thus distributed:

Redbank	130
Hines	20
Donkey Hill	40
Moonambel	40
Victoria & adjoining gullies	50
Forest Hut	20
Stuart Mill	30
Darling Flat	40

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	1	2	20	55
Whims		2		
Alluvial Mining:				
Whims	1	2		
Puddling Machines	7	9		

Total value of all mining plant in the division, £1,750.

Quartz tailings crushed during the quarter by/from:

Lancashire Reef

Strathfilan Creek

No quartz has been crushed in this division during the quarter. There is an almost total cessation of work on the Pyrenees Reef, and it is expected that full work cannot be resumed for some weeks until the repairs rendered necessary to the pumping engine, through the late fire, are complete. In alluvial mining very little is doing. The prospectors at the Slaughteryard Lead, Redbank, have commenced to block out a portion of their ground; the yield is from 4 to 5 dwts to the load. The shallow diggings at Victoria and adjoining gullies yield remunerative returns to the few employed. As yet there is no scarcity of water in that locality.⁹⁹

⁹⁹ Mining Surveyors' Reports, December 1866

December 1866: (St Arnaud North subdivision)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	157	168
Quartz miners	182	
Total	339	168

The total number of miners is thus distributed:

Association Reef	6
Carapooee Upper	25
Emu Diggings	8
Peters's	20
Dogbury and Banshee	4
Gap Gully	4
Wilson's Hill	4
Chance Reef	5
Hopeful Reef	12
Chrysolite Hill	12
Stuart's Hill	24
Bristol Reef	42
Greenock Reef	12
Crushing Machines	19
New Bendigo	230
Armenian Gully	8
Bell Rock	10
Blink Bonny	8
Strathalbyn Reef	2
Prince of Orange	4
Jerejaw Reef	8
Queen Mary Reef	6
Caledonian Reef	4
Queen Mary Diggings	30

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	5	1	70	106
Balfour's Pulveriser		1		
Appleton's Breaker		1		
Whims	10	4		
Chilian Mills	5			
Alluvial Mining:				
Puddling Machines	11	4		

Total value of all mining plant in the division, £16,400.

Quartz crushed during the quarter by/from:

Prospectors and No. 1 S	Greenock Reef
Benson and others	Bachelor's Reef
Chrysolite	Public crushing
Edelsten's Engine	Jerejaw Chance, Caledonia
Wilson's Hill	Wilson's Hill
Tributers	Bell Rock
Tributers	Bristol Reef
Perry and Sons	Hopeful Reef, Bristol Reef
Silver Mines	Public crushing
McCredie's Engine	Queen Mary Reef
Butcher and Company	Public crushing

Quartz Tailings & Cement crushed:

Lancashire	Stuart Mill
Edelsten's Engine	Peter's and Carapooee
McCredie's engine	Public crushing
Williams' engine	Alluvial, Carapooee

Looking at the number of quartz miners, and the quartz and gold raised (leaving out silver this quarter, trivial), making due allowance for the few employed unproductively, but including prospectors and pioneers (tut-workmen), I estimate the quartz per man per day, 3 cwt 3 grs 13lbs, and the worth per man per day, 15s 9d, which I believe is rarely exceeded in the colony. There are three new mining localities, viz: the Chance, Queen Mary, and the Prince of Orange Reefs; there is also the Queen Mary alluvial diggings, stretching away the Avon side of the Pyrenees, on which it is premature to report further than that there are a busy few doing fairly well, especially in the alluvial diggings, which it is hoped will deepen and extend into the flat, there being three or four golden gullies falling rapidly to their confluence yet undiscovered in direction of their fall. It is worthy of note that much of our quartz mining here is by tributers, and that a portion of the gold goes to lessees, who do nothing for it but merely take up a lease. The system of mining tribute is an old and good one, under other circumstances, where lessees open the mine and put down machinery, but there should be no 'drones' coming between the Crown and the miner.¹⁰⁰

1867: Avon Diggings - In April 1867 two diggers named Galbraith and Edgar prospected what was known as 'Avon Diggings', near Rostrons Station. ... The Queen Mary Diggings, near Avon, were opened in 1867.¹⁰¹

March 1867: (Korong Division)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	520	290
Quartz miners	365	
Total	885	290

The total number of miners is thus distributed:

New Inglewood	400
Old Inglewood	30
Thompson's Gully	10
Korong	400
Jericho	50
Kingower	80
McIntyre's	20
Sinnott's	100
Bourke's Flat	30
Commissioner's Flat	5
Loddon and Kingarra	50

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	15	19	146	300
Whims	7	17		
Whips	12	15		
Alluvial Mining:				
Whims	1			
Puddling Machines	36	34		

Total value of all mining plant in the division, £36,000.

¹⁰⁰ Mining Surveyors' Reports, December 1866

¹⁰¹ James Flett, 1979, *The History Of Gold Discovery in Victoria*, pp448-451

Quartz crushed during the quarter by/from:

Lady Darling	European, Leicester, Jersey, Morning Star, Cambrian, City of Bath, Old Inglewood, Welcome, Rising Sun Reefs
Duke of Cornwall	Daly, Maxwell's, European, City of Bath, Old Inglewood, Eureka, Rising Sun, Leicester Reefs
Unity	March, Morning Star, Catherine, Reality, Maxwell's Reefs
March Reef Co.	March Reef
Prince of Wales	German Reef
Catto's	Phillip's, Morning Star, Newbridge, German Reefs
Thompson's Gully	Welcome Reef
Quartz Tailings & Cement crushed:	
Lady Darling	Deep Lead, Daly Lead
Duke of Cornwall	Commissioner's Flat
Unity	Inglewood
Catto's	Pine Hills
Thompson's Gully	Scandinavian

In my report for the quarter, I have to notice little difference from that of the quarter ending 31st December last, excepting for Inglewood, where some of the more important reefs have latterly considerably improved in their yields, and consequently afforded work for most of the unemployed miners. The population is slightly decreasing in other parts of the division, many having received assistance from friends in New Zealand to join them there. Among the Inglewood Reefs, the following are chiefly to be noticed: Maxwell's - On this once busy line of reefs, operations are chiefly confined to the Prospectors' Company, and their immediate neighbours. The prospectors are again obtaining excellent stone from the deeper levels. The Hope Company, Nos. 2, 3, and 4, south, are sinking by contract at 8s per foot, and has struck stone showing the 'colour.' The Enterprise Company, next south, has ceased operations, through want of capital, and has called an extraordinary meeting to supplement their resources, or to wind up. Nothing elsewhere is being done on this reef - a notable instance of the flagrant violations of Mining Leases, now become so general; large areas of auriferous reefs locked up, and lying utterly useless for productive purposes, until some favourable hour arrives for a speculation; such, I am bound to say, is the characteristic feature in Inglewood reefing interest, and one which fully accounts for the non-increase of its population. City of Bath Reef - Jason Company have ceased operations for the present, and are calling up capital for the erection of machinery. European Reef - European Company, being down to water, have registered. North Ophir Company have ceased operations, apparently through want of capital; Ophir Company have 5 men employed. South Ophir nothing doing; another instance of evasion of the lease conditions - nothing having been done since the lease was granted. Leicester Reef - Bird-in-Hand Company are doing very well, and during the present quarter have furnished some of the best results in Inglewood; 11 men are employed. Leicester Company is sinking a shaft to cut the stone worked by the Bird-in-Hand Company. Old Inglewood Reef - Two men are prospecting, and last week cut payable stone. Royal Standard Company is prospecting their mine more fully. Nelson Reef - The different Trafalgar Companies are alike idle. Jersey Reef - Jersey Company, 5 men are employed; the stone is very rich, but runs in small veins. March Reef - This line of reef is now the most important in Inglewood, the whole course of the reef looking much better than for years past; Prospectors' Company have 17 men employed, and though the yields are various, the mine is being vigorously developed, chiefly by the contract system, which is becoming general in the locality. One battery of their crushing plant now crushes for the public. Unity Company - the improvement in the affairs of this company is very decided, 41 men are at work, and all four batteries are employed in crushing their own stone. The returns will show marked improvement in the prospects of this company. Hope and Anchor Company are prospecting to the north. The Independent Company are doing much better lately, and have now 10 men taking out stone, which averages 15 dwt... Most of the Northern Claim, on the March line, have golden stone, but are deterred by the water. Reality Reef - Reality Company prospecting. A dividend of 2d per share was lately declared, but a call to the same amount has since been made. Godwin Reef - very little doing. Morning Star Reef - In Ford's Claim, 4 men; and in Need's, 3 men, are raising average stone. Baragwanath's engine has ceased pumping, not being supported by the claims adjacent; consequently many parties are unable to work their ground on this line. Two of the machines formerly crushing for the public have been stopped some time, viz. Prince Albert and Victoria, the latter of which was bought in at auction last week for £300. Since then the tailings' results of crushings for years back have been sold to a party of Chinamen, for £100, who work them on the ground by large cradles. Lady Darling machine tailings are also sold to, and being worked by, a party of Chinese. In alluvial matters there is nothing to mention, but the Daly Lead Company, who, from the water level, 120 feet, bored to the bottom 16 feet further, and obtained the colour from the last bore. The drift is troublesome. At the head of the lead, on private property, Harland and Jones obtained the largest nugget yet found in the locality, being over 11 oz. This success has stimulated alluvial mining on the lead somewhat; several large cradles are employed in washing headings chiefly. There is nothing of importance to be noticed in the other localities. At Korong a few nuggets have been found, but no fresh ground opened, and the population remains about the same.

Kingower - Nothing doing; population decreasing. Jericho - The interest of this place is almost confined to the Prince of Wales Company, who are still doing consistently well; from 30 to 40 men are constantly employed, and the accompanying returns show the yields to be average. Burke's Flat - Very little doing. At the boundary of this division, on the Dunolly side, about 2 miles from the Avoca River, a small alluvial rush has taken place, which appears to be extending into this division, and has the appearance of a good diggings to support a small population through the winter.¹⁰²

March 1867: (Redbank and St Arnaud South subdivisions)

The number of miners is as follows:

	<i>Europeans</i>	<i>Chinese</i>
Alluvial miners	210	-
Quartz miners	120	-
Total	330	-

The total number of miners is thus distributed:

Redbank	120
Hines	20
Donkey Hill	30
Moonambel	40
Victoria, and adjoining gullies	60
Forest Hut	20
Stuart Mill	30
Darling Flat	10

The machinery is as follows:

	At work	Idle	Stamp heads	Aggregate hp of steam engines
Quartz Mining:				
Steam engines	1	1	16	45
Whims	1	1		
Alluvial Mining:				
Whims	1	2		
Puddling Machines	6	10		

Total value of all mining plant in the division, £1,750

Quartz crushed during the quarter by/from:

Slaughteryard Reef Co. Slaughteryard Reef, Moonambel

Quartz Tailings crushed:

Lancashire Reef, Stuart Mill Strathfillan Creek

The pumping engine having been repaired, work has been resumed on the Pyrenees Reef. The Slaughteryard Reef Company, Moonambel, has had a trial crushing of 17 tons, yielding 7 oz 5-1/2 dwts. The promoters of this company express themselves satisfied with the result. The Slaughteryard Lead, Redbank, is still blocking out; yield, from 4 to 5 dwts. Several parties at Hind's Diggings have been doing well of late. Victoria and adjoining gullies still giving remunerative returns. There is no scarcity of water in the subdivisions.¹⁰³

¹⁰² Mining Surveyors' Reports, March 1867

¹⁰³ Mining Surveyors' Reports, March 1867

March 1867:	St. Arnaud North Subdivision (Mr. John Phillips)	
	<i>European</i>	<i>Chinese</i>
Alluvial miners	115	235
Quartz miners	191	
Total	306	120
Distribution of miners:		
Bristol and Gap Reef	36	
Bell Rock and neighbourhood	27	
Jerjaw, Queen Mary, and neighbourhood		34
Sebastopol and Stewart's Hill	31	
Blink Bonny and neighbourhood	16	
Wilson's Hill and Chrysolite	35	
Greenock Reef and neighbourhood	7	
McCredie's and Butcher's engine	9	
John Bull Creek	30	
Gap and Armenian Gullies	15	
New Bendigo	145	
Carapooee Creek, bottom and top	31	
Emu Diggings	10	

Machinery as follows:

	Alluvial mining	Quartz mining
Steam Engine		9 at work/1 idle (68 heads/147 hp)
Chilian mills		5 at work
Balfour's Pulveriser		1 idle
Appleton's Breaker		1 idle
Whims		10 at work/5 idle
Puddling machines		2 at work/13 idle

Total value of mining plant in the subdivision (increased of late £1,600), £18,000.

Quartz crushed during the quarter by/from:

Malcolm and Co.'s	Auld Reekie, Pioneer Reef, Chance Reef, Caledonia Reef
Chrysolite	Sanderski's, Blink Bonny, Chrysolite, Bristol Reef, Robinson's, Jerejaw Reef, Hopeful.
Silver Mining	Various claims
McCredie's	Robinson's Reef, Edgar's claim.
Excelsior (Masters)	Gold and silver
Butcher and Co.	Various claims
Quartz Tailings & Cement crushed:	
Chrysolite	
McCredie's Engine	

The yield of the Hopeful Reef for the last two quarters has been 15 to 20 ounces per ton, with a prospect of continuance for an indefinite period. The frequent discoveries of reefs and alluvial ground, showing this part of the country to be generally auriferous, the slowness of its development is owing to the want of water during most of the year, and the want of the right sort of diggers in sufficient numbers - men who understand data. There are few of them, however, lately arrived, who express a strong conviction as to the paying character of the numerous gullies untouched. There is a party sinking for the conflux of leads from the Queen Mary and Kangaroo workings, which are down more than 60 feet, without bottoming, and the probability of something good thereabout is very great. This is on the side towards John Bull Creek, where the latest discovery has been made, some 18 miles and a little south of St. Arnaud ... The Queen Mary gullies and John Bull Creek, on either side of the Avon and Richardson valley, flow into it. The head of this valley is circumscribed by auriferous country. There is a pumping and winding engine of 20-horse power nearly erected at the Silver Mining Company's works, besides the 30-horse they already have.¹⁰⁴

June 1867: Korong Division (W.G.Couchman)
 Quartz crushed during the quarter by/from:
 Lady Darling Machine Morning Star Reef, Leicester Reef, Jersey Reef, Maxwell's Reef, Dartmouth Reef, March Reef, Rising Sun Reef, Camperdown Reef, City of Bath Reef, European Reef, Cambrian Reef
 Duke of Cornwall machine Eureka Reef, Leicester Reef, Polka Reef, Maxwell's Reef, Old Inglewood Reef, Vulcan Reef, Daly Reef
 March Co American Reef, Morning Star Reef, March Reef,
 Unity Co. Welcome Reef

Jericho - The Prince of Wales Co. are sinking their shaft by contract 50 feet deeper to strike the reef at a lower level. Burke's Flat - Morley and Fone have twenty-five men employed raising payable stone. Sinnott's - A lease of 32-1/2 acres of land has been applied for by a party of Italians, to prospect the ground for a deep lead. I have noticed a more general prevalence of opinion in favour of the tribute system. The population is the same as during the previous quarter.¹⁰⁵

Redbank and St. Arnaud South Subdivisions (William Byrne)
 Quartz crushed during the quarter by/from:
 Lancashire Reef Star of the East Reef, Stuart Mill
 Quartz Tailings & Cement crushed:
 Lancashire Reef, Stuart Mill Strathfillan Creek

Work has resumed on the Pyrenees Reef, Nos. 3, 4 and 5 having deepened their shaft 20 feet, are now raising stone. A new reef (the Star of the East) discovered lately at Stuart Mill, promises well. The last crushing of 17 tons has yielded 3 oz. to the ton. There is nothing new to report in alluvial mining.¹⁰⁶

June 1867: St Arnaud North Subdivision (John Phillips)
 Quartz crushed during the quarter by/from:
 Silver Mines (Public crushing) Bristol Reef
 W.Allerdyce Walkers lease
 Chapman and Co. (Public crushing)
 McMahan (Public crushing) Bristol Reef
 Chrysolite (Public crushing)
 Malcolm's engine (Public crushing)Chance Reef
 Prospectors and others Greenock Reef
 McCredie's (Public crushing) Queen Mary Reef
 Master's and party Stuart's Hill

Quartz Tailings & Cement crushed:
 McCredie's Engine

From Masters and Partners' claim ... there have been 184 tons of stone giving both gold and silver. In Walker's lease they have been surprised by 150 oz. of gold and silver alloy, worth 33 shillings per ounce for its gold, had from 24 tons. Of the 206 quartz miners there are 21 unemployed, and considering that some 30 others have been engaged in engineering, tutwork, or extension all the quarter, the raisings show fairly for those actually breaking and returning. The Chance Reefs, a little south of the Jerejaw, which, like the last-named are associated with elvan veins, have good quartz.¹⁰⁷

Sept 1867: Korong Division (W.G.Coachman)
 Quartz crushed during the quarter by/from:
 Unity Co. March Reef
 Lady Darling machine March Reef, Jersey Reef, Morning Star Reef, Rising Sun Reef, City of Bath Reef, Leicester Reef, American Reef, Cambrian Reef.
 Duke of Cornwall machine Maxwell's Reef, Leicester Reef, American Reef, Old Inglewood Reef, Princess Alexandria Reef, Jersey Reef, Polka Reef, Nelson Reef, Moon Reef
 March Reef March Reef, American Reef, Exhibition Reef.
 Catto's machine Jericho - Fone's Reef, German Reef, Evening Star Reef
 Wedderburn Wedderburn Flat Reef

Quartz Tailings & Cement crushed:
 Lady Darling machine Inglewood - Daly Lead, Deep Lead

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Duke of Cornwall machine	Inglewood - Daly Lead, Deep Lead
March Reef	Inglewood - Daly Lead
Catto's machine	Jericho - Pine Hills, German Reef
Prince of Wales	German Reef

On Maxwell's Reef the Prospectors Company have sunk deeper and are working at the lowest level, but without marked success as yet, although their engine has at length thoroughly drained the ground for a long distance both north and south of them. The remaining properties on this reef are idle. Leicester Reef - The Bird in Hand Company are still operating on payable stone, and have six men at work. The Leicester Co. has sunk to stone apparently payable, but is not at present working. On the Old Inglewood Reef ground has been taken up by three men (Ireland and party) ... have been well rewarded for their enterprise, by obtaining a large body of stone, averaging 15 dwts. per ton. The Royal Standard Company have erected a whim to drain the reef...On the Jersey Reef the company of that name and the Victoria Co. are prospecting. The holders of the ground on the Odin Reef have registered. March Reef - The March Prospectors Company have suspended operations in the mine until the ground shall have been drained by the new engine of the Unity Co., now in the course of erection; meanwhile the company have let their machine for six months to a party of two, who have commenced crushing for the public, after making some improvements in the tables. The company are about to let the mine on tribute. The Independent Company have also suspended operations below water, until drained by the Unity Company's Engine. The mine has lately been let on tribute for six months; the tributers are now crushing about 30 tons, expected to average 1/2 oz. The Unity Co. still maintains its pre-eminent position, as will be seen by the total amount of quartz crushed and the yield of gold therefrom, viz. 2,909 tons for 2,005 oz ... 41 men are employed on wages, besides 18 engaged in various contracts. The new engine, in course of erection by Messrs. Horwood of Sandhurst, is of 40-hp, cylinder 18 in., with 10 in. pumps, plunger, and draw lift; contract price, including erection, £1,944. This fine engine will effectually drain the whole extent of the reef, and prove of almost invaluable service to the surrounding properties. The Reality Company has lately struck some golden leaders, which are expected to lead on to the same body of stone as that in the adjoining Unity Claim. A good crushing has been obtained from the Cambrian Reef, 27 tons produced 21 oz. There is scarcely anything to report respecting alluvial mining at Inglewood. A few small lots of cement from the Deep Lead have, as usual, proved just about payable. Two unimportant rushes have taken place, one at Simmond's Reef, the other at Foote's Paddock, situated north of Inglewood, 3 and 5 miles respectively; in each case the ground was soon deserted, save by one or two who still remain. I have to remark that while many miners are complaining of the difficulty of obtaining remunerative employment, the tailings from various quartz machines have been eagerly sought after by parties of Chinamen, one party of whom have removed hither from Sandhurst, and all appear to be doing well. At Jericho the Prince of Wales Company has sunk their shaft 60 feet deeper, and is now advertising for putting in cross-cuts to work the reef from that level. A small rush has taken place between Tunstall's and Sinnott's, resulting in a few payable claims. At Korong there is very little doing, although it is worthy of notice that the cement is being carted all the way to Inglewood to be crushed, at a cost of £1 per ton cartage. 108

Sept 1867:

Redbank and St. Arnaud South Subdivision
 Quartz crushed during the quarter by/from:
 Duke of Edinburgh Quartz Mining Pyrenees Reef, Redbank
 Lancashire Reef Crushing Star of the East Reef, and Nuggetty Reef, Stuart Mill
 Quartz Tailings crushed:
 Lancashire Reef Quartz Crushing Tailings from Strathfillan Creek, Stuart Mill

Owing to the late heavy rains, a considerable impetus has been given to alluvial mining in the neighbourhood of Victoria and adjoining gullies. Several large finds are reported. The dams are all full, and it is expected that there will be water sufficient for several months. There is little new to report in quartz mining. The Duke of Edinburgh Company, Pyrenees Reef, is sinking their shaft to a further depth of 100 feet. The Slaughter-yard Reef Company is busy erecting their new machinery, and is also raising stone. The new reef, Star of the East, Stuart Mill, still continues to yield steady returns, and is getting wider; it is now 3 feet thick. 109

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109 Mining Surveyors' Reports, Sept 1867

Sept 1867:

St. Arnaud North Subdivision
 Quartz crushed during the quarter by/from:
 Chapman and Co. (public crushing) Various reefs
 Bristol Reef (crushing) Various claims
 Chrysolite (public crushing) Various reefs
 Malcolm's (public crushing) Caledonian and Fish-hook Reefs
 Lee and Co.'s (public crushing) Greenock Reef
 Sebastopol (crushing) Various places

Quartz Tailings & Cement crushed:
 McCredie's engine
 Lees and Co.'s engine, at Stuart Mill

There were 130 tons of gold and silver ores raised from the silver mines reef at Stewart's Hill, awaiting final treatment...There are numerous reefs around us yielding gold to occasional small parties of miners. There are nearly as many reefs as quartz miners, and the privilege of picking out the golden spots and leaving the reefs all poor in sight is anything but conducive to steady work and regular mining. The tribute system here prevalent results in slovenly and personally unsafe mining, timbering and footways being neglected; the miner facing evident danger for a short time only, during his "take", rather than preventing it at his own labour and expense. This last remark does not apply, however, to the Chrysolite tributers, who are working vigorously in spite of failure to get a drainage grant. The Bell Rock, the Bristol Reef, the Rising Star, the Greenock Reef, and perhaps other mines, may be regarded as good and permanent; the Jerejaw, Chance, Blink Bonny, Hopeful, and Emu mines, coming in the rear with promise.¹¹⁰

Dec 1867:

Korong Division
 Quartz crushed during the quarter by/from:
 Unity Co. March Reef
 March Reef March Reef
 Hope and Anchor March Reef
 Jason City of Bath
 W. Needs and Co. Morning Star
 Lovell and Co. Thompson's Gully
 Prince of Wales Jericho

In alluvial mining this division has not made any fresh discoveries. Quartz mining is very much depressed. The Unity Company has nearly completed a splendid pumping plant of 40-hp, which is expected to give a great impetus to the mines situated within its drainage area.¹¹¹

Redbank and St. Arnaud South Subdivisions
 Quartz crushed during the quarter by/from:
 Lancashire Reef Crushing Co. Star of the East Reef
 Stuart Mill Macoboy Reef
 Duke of Edinburgh (Redbank)

Quartz Tailings crushed:
 Lancashire Reef Crushing Co. Tailings from the bed of Strathfillan Creek.¹¹²

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Dec 1867:	St. Arnaud North Subdivision
	Quartz crushed during the quarter by/from:
	McMahon's Lease Bristol Reef
	Golden's Lease Shewring's Reef
	Bell Rock Tribute Bell Rock Reef
	Chrysolite Tribute Chrysolite Reefs
	Bristol Reef Bristol Main Reef
	Grand Junction Blink Bonny Reef
	Leith Walk Warwickshire Reef
	Freiberg (silver) Trinidad and Walker's Reef
	Rising Star Chrysolite Hill Reefs
	Wilson's Hill Western Reef, Frenchman's Reef, and Eastern Reef
	Greenock Reef Prospectors Greenock Reef
	Nicholl's Lease Bristol Reef
	Caledonian Caledonian Reef and Fishhook Reef
	Mathews and Co. Chance Reef
	Perry and Co. Hopeful Reef
	Carr's Lease Gap Reef
	Quartz Tailings & Cement crushed:
	Wilson's Hill Surfacing
	William's engine at Peters' Cement

The raisings are low in proportion to the numbers of quartz miners, and in a great measure, owing to an unusual amount of pioneering and 'tutwork'.¹¹³

1868:	Berlin Diggings
	The original discovery of what the discoverer called Byr Lyn, but which the diggers immediately called Berlin, was the opening of Clelland's Gully by Alexander Clelland on 21 August 1868, from which he received an official reward of £100. Mr Know Orme, the warden, wrote to the Secretary of Mines about the opening of the Berlin field - 'The Berlin diggings are distant about twelve miles westward of Inglewood, and four from Kingower, and are on Kingdaraar Creek, which flows into the Loddon after a course of about twenty miles. The population of the 15th instant about 400. The sinking is from two to four feet, and the gold is found most irregularly, and at most uncertain depths, viz., from an inch or two to about four feet. Clelland's Gully runs east and west and gold has been obtained here for about three-eighths of a mile in length, and, on the average about fifty or sixty feet in width at present. Fortunate Gully runs nearly north and south, and gold has been found there for about a quarter of a mile in length by a breadth of about forty feet at present. Clelland found a 60 oz. nugget in his first shaft at Berlin, and John Catto, with Dennis Courtney, opened Fortunate Gully, which was rushed on about 19 September. These events were followed by the opening of:
Oct 1868	Powers Gully (SSW of Berlin), Gilmour's Gully (north of Clellands). Large nuggets were found in each and there were soon 2000 men on the field
Dec 1868	Christmas Flat, near McIntyre's station, was opened, Langham's Flat soon after, and the rush spread to the main flats in Catto's and John's paddocks, between Clelland's Gully and Langham Flat Between Clelland's discovery and the end of December 1868, 340 nuggets from 440 oz. down to one oz. were unearthed.
March 1869	the rush spread to the area north of Christmas Flat known as Tyler's, where William Tyler, an old Warwickshire man, had kept a hotel since 1853, and Berlin rush thereafter was often referred to as Tyler's Rush . In 1869 or thereabouts there were rushes to Humbug Hills, south of the station, and near Orville Creek.
1868-73	Reports from Berlin Rush were mostly in the nature of long lists of large nuggets. (eg. 'Viscount Canterbury' 1114 oz., 'Viscountess of Canterbury' 912 oz. - both in John's Paddock)
Jan 1871	Ah Chang and party discovered the largest piece of gold found at Berlin' the Precious Nugget - 1717 oz gross weight. After 1871 the nuggets became scarcer, and the rush slowly declined to 400 diggers in 1874. The first of a series of gold discoveries began east of the McIntyre's-Berlin road in December 1874. They are as follows:
Dec 1874	rush about a half-mile south of Christmas Flat ... This was known as the Hard Hill Rush and declined in June 1875.

- Sept 1875 Moonlight Hill rushed (South-east of Guy's Rush), and later in the month '2nd Hill', further removed from Moonlight was discovered. Soon after this Possum Hill, that became the main centre of the rushes, was opened ... The discovery took place less than a mile north-east of McIntyre's, good gold was found, and the rush, known as **Orville Rush** attracted thousands, spreading from the old Hard Hills at McIntyre's (worked 1859-61) east through Possum Hill, Moonlight Hill to Billy the Mailman's Hill, and was pegged nearly to Irishtown. By May 1876 there was 'an immense spread of calico', many stores, and twenty-eight licensed hotels on the rush.
- 1876 Morgan's and Harrop's Hills, Long Gully, One Speck Hill, Gibraltar Hill, and McGee's. By the end of 1876 the 5000-odd population had shrunk to 200.
- 1878 another rush to the Berlin Hard Hills
- 1879 opening of lead known as Wait & Hope, but was then called **Lamont's Rush**. There was also a rush at this time to Potter's Gully, near John Goss' land.
- 1884 Guy's Rush was prospected by Kish Guy. ¹¹⁴

March 1868:

Korong Division (Robert Mason)
 Quartz crushed during the quarter by/from:

Unity Co.	March Reef
Lady Darling	March Reef, Hope and Anchor, United, Exhibition, Bird-in Hand, Potter's Hill, Reality, Bendigo, Morning Star, Jersey, Commissioner's Flat, Rising Sun, Daly Lead
Duke of Cornwall	Old Inglewood Reef, Maxwell's, Vulcan, City of Bath, Leicester, European, Nelson, Potter's Hill, Duke of Cornwall, Reality
Prince of Wales	Jericho
Morly and Fone	Morning Star, Jericho

Quartz Tailings & Cement crushed:

Lady Darling	Cement
Duke of Cornwall	Cement
Wedderburn	Cement

Quartz mining is improving steadily, as a more legitimate field for capital is presented to the public. March Reef - The Unity Company is the most remarkable in this division as regards the superiority of the machinery and the systematic manner in which their mining operations are conducted. An accident took place in this mine on the 29th of February, which might be termed a land slip, or the ground caving in. The old shaft was slightly damaged near the top, having tilted to the eastward, and the old pumping engine was also tilted eastward; it will require removal to solid ground. The ladder-shaft escaped injury ... This company first discovered gold on the 22nd November, 1862, and since that time has crushed 22,395 tons of quartz, yielding 16,918 oz. March Reef, March Company - The tributers are driving north at the 177 feet level, and raising stone for crushing. Maxwell's Reef, Havilah Company - The tributers have had a good crushing, 83 tons gave a return of 64 oz. 13dwts.; the portion of the reef now being worked is about 11 feet wide, and the stone continues to look well. One of the tributers was killed ... by falling off the ladder when about 10 feet from the surface descending depth of shaft 180 feet. Poverty Reef - Messrs Baragwanath and Samuel are adding two batteries of four stamps each to their pumping plant for the purpose of crushing their own stone, and expect to have them ready for working in about 10 days. Alluvial - Daly Lead - The Inglewood Alluvial Gold Mining Company is about wound up, by disposing of the machinery and other property by auction. Burke's Flat - This portion of the division is very much improved. The Morning Star Reef and Morley and Fone's, are giving splendid results; the latter company employ about 40 men. Jericho - the Prince of Wales Company have not been constantly employed in crushing during the quarter. They have been principally occupied in opening the mine upon a more extended scale.¹¹⁵

March 1868:

Redbank and St. Arnaud South Subdivision
 Quartz crushed during the quarter by/from:

Lancashire Reef Quartz Crushing Company,	Macoboy Reef
Stuart Mill	
Duke of Edinburgh Quartz Mining Co.	Pyrenees Reef

Quartz Tailings & Cement crushed:

Lancashire Reef Quartz Crushing Company,	Tailings from the bed of Strathfillan Creek
Stuart Mill	

There is a large amount of stone raised and ready for crushing at the Isis Company's claim, Stuart Mill. The small amount crushed at the Lancashire Reef Company's mill is due to the fact of cessation of work pending alterations and improvements in machinery. There has been a small alluvial rush to a place

114 James Flett, 1979, The History Of Gold Discovery in Victoria, pp292-296
 115 Mining Surveyors' Reports, March 1868

called Middle Creek, about 5 miles south-west from Moonambel; the yield is about 1/2 oz. to the load; but with the exception of the prospecting party, the miners on the ground are doing very little and universally complaining. It is expected that the heavy rains which have fallen within the last few days will give an impetus to surface operations and shallow sinking in the neighbourhood of Victoria Gully, near Stuart Mill, the miners in that locality having been very badly off for water for some months past.¹¹⁶

March 1868: St Arnaud North Subdivision

Quartz crushed during the quarter by/from:

Rising Star	Rising Star and Cross Reef
Rowan's Lease	Bristol Reef
Chrysolite Lease	Chrysolite Reefs
Pioneer	Armenian Reef
Wilson's Hill	Eastern and Western Reefs
Carr's Lease	Gap Reef
Rimmer's Lease	Ballarat Reef
Perry's Lease	Hopeful Reef
Penberthy's Lease	Blink Bonny Reef
Nicholl's Lease	Bristol Reef
Freiberg Lease	Walkers and Trinidad
Tuckers Reef	Emu Reef
Quartz Tailings & Cement crushed:	
Wilson's Hill	Mullock from various reefs
Davis and Co.	Carapooee Hills, Cement

The pioneer Silver Mining Company have preferred the surface 'gossans' in another part of their ground to the deeper ores first their object. The Bristol Reef is a busier scene of work in consequence of the new stamper fixed there. The Rising Star is usually the 'Star' of the place for profits. It is probable the owners will have to erect their own steam engine soon, as they have refused to aid the tributers, who have in consequence stopped. Bell Rock is now aided by a complete winding and pumping engine, and there is everything leading one to expect a lasting mine there. The Emu, Stirling, and Isabelle Reefs, near Emu Bridge, have been regarded as worthy of a thorough good battery of 20 stampers, which is now complete. The Greenock men have been raising quartz of their usual good yield, but they have not crushed anything during the quarter, owing to repairs to machinery. The Bell Rock crushings have been suspended also during the quarter.¹¹⁷

June 1868: Korong Division (Robert Mason)

Quartz crushed during the quarter by/from:

Unity	March Reef
Duke of Cornwall	Vulcan, Daly, Maxwell's, Morning Star, Tara Hall No. 1
Lady Darling	Independent Company, City of Bath, No. 5 and 6 Jersey, Potter's Hill, Bird-in Hand, Jersey Gold Mining Co., No. 3 North Morning Star, Daly, No. 5, 4 and 7 Morning Star, Rising Sun
Baragwanath and Co.	Poverty Reef
Prince of Wales	Jericho
Morley and Fone	Burke's Flat, Morning Star, David's, Greek's, Lilliputian (all at Burkes Flat)
Quartz Tailings & Cement crushed:	
Duke of Cornwall	Cement
Lady Darling	Cement

Alluvial mining: new ground has been opened recently near Sinnott's, and several claims have proved payable. The Inglewood Alluvial Gold Mining Co.'s pumping plant was removed to Tarnagulla and the Daly Lead may now be described as abandoned.

Quartz Mining: the Odin Co purchased the pumping plant from the Enterprise Co, it was removed and re-erected and started work on the Odin Reef; the prospects of this company are very good. The Unity Co got started at their new pumping and winding shaft. The mode of conducting mining operations by this company is on the most improved principles, and might be described as a model. Tara Hall Reef was discovered two months ago, and No. 1 North had a trial crushing of 15 tons, which yielded 8dwts to the ton. The reefs in the vicinity of Burke's Flat continue to improve, and this portion of the division is at present in the most prosperous circumstances.¹¹⁸

June 1868: Redbank and St. Arnaud South Subdivisions (William Byrne)

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 117 Mining Surveyors' Reports, March 1868
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Quartz crushed during the quarter by/from:
 Duke of Edinburgh Pyrenees Reef
 Lancashire Reef (Crushing) Bangor Reef
 Quartz Tailings & Cement crushed:
 Lancashire Reef (Crushing) Tailings from Strathfillan Creek

The Duke of Edinburgh Company, on the Pyrenees Reef, having failed to strike the reef in their shaft, has closed operations. I am informed that the machinery for the Isis Gold Mining Company, Stuart Mill, will be speedily in course of erection. The late heavy rains have given an impetus to the alluvial mining in the neighbourhood of Victoria and adjoining gullies.¹¹⁹

June 1868: St Arnaud North Subdivision (John Phillip)
 Quartz crushed during the quarter by/from:
 Prospectors and No. 1 South Greenock Reef
 Leaseholders Jerejaw Reef
 Chrysolite Chrysolite Reef
 Edgar and others Leyden Reef
 Penberthy and Co. Blink Bonny Reef
 Perry and Co. Hopeful Reef
 Blackie and Co. Warwickshire Reef
 Hosking and Co. Wilson's Hill

The Pioneer Silver Mining Co. have crushed from the Rotten Reef, stuff broken from the depth of 100 feet to the surface, 774 tons, yielding gold and silver alloy, 2505 oz. 9 dwts. The Bell Rock indications are important for extensive mining; and this is the more important in consequence of its being isolated in a locality abounding in large reefs almost untried, but, nevertheless, showing gold.¹²⁰

Sept 1868: Korong Division
 Quartz crushed during the quarter by/from:
 Unity March Reef, Morning Star, Tara Hall
 Duke of Cornwall Tara Hall, Maxwell's, Vulcan, March, Kentish, Morning Star,
 Leicester, Old Inglewood Reef, Jersey
 March Tara Hall
 Morley and Fone No. 1 South, Morning Star, Deadlock, Gladstone
 Baragwanath Poverty
 Prince of Wales Jericho
 Quartz Tailings & Cement crushed:
 Unity March Reef (blanket tailings) and cement
 Duke of Cornwall Cement
 March Cement

Alluvial mining. A small rush took place near Thompson's Gully, but not yet of sufficient importance for a special report. The Berlin rush is still progressing; nuggets from 3 to 5lbs. in weight are of common occurrence. Jones' Gully, near Jordan's, and about two miles south-west of Berlin, was rushed to-day (30th September). The prospects obtained were 1 oz. to the load.

Quartz mining. The Odin Company is commencing to crush 100 tons of quartz, taken from the reef about 30 feet below water level. The European Company's pumping and winding plant is expected to be ready for work about the end of October next. The Unity Company is still prospecting their ground; the trial crushings have paid expenses. The Southern Cross Company, Tara Hall Reef, has had several crushings during the quarter...¹²¹

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 120 Mining Surveyors' Reports, June 1868
 121 Mining Surveyors' Reports, Sept 1868

Sept 1868: St Arnaud North Subdivision
 Quartz crushed during the quarter by/from:

W. H. Thompson	Star of the West
W.W. Carr	Gap Reef
Rimmer and Co.	Ballarat Reef
Northern	Bristol Reef
Hosking and Co.	Wilson's Hill
Chrysolite	Western Reef
John Thomas	Gap Reef
Perry and Co.	Hopeful
Pioneer	Armenian Reef
Sanderske	Armenian Reef
Higgins and Co.	Rising Sun
Bristol Reef	Bristol Reef
London Claim	Bristol Reef
Croydon and Co.	Bristol Reef
St. Arnaud	Walker's Reef
Bishops' Lease	Jerejaw
Penberthy and Co.	Blink Bonny
Caledonian	Fishhook Reef
Brown and Co.	Warwickshire Reef

Pyrites - There is some under a course of treatment, but the result is not yet known. There is no discovery of any kind to report, but the old workings keep up their character with great regularity. The working miners have just begun to know that they have been great losers for the want of some good process of treating the pyrites, which there is reason enough to believe is as plentiful and as rich here as elsewhere.¹²²

Dec 1868: Korong Division
 Quartz crushed during the quarter by/from:

Unity	March, Morning Star, City of Bath, Odin
March	Godwin, Morning Star, Jersey, No. 7 North March
Baragwanath	Poverty
Duke of Cornwall	Maxwell's, Odin, Jersey
Prince of Wales	Jericho
Morley and Fone	Deadlock, Cruks, Morning Star, Evening Star
Thompson's Gully	Welcome
Quartz Tailings & Cement crushed:	
Unity	Cement
March	Cement
Duke of Cornwall	Cement
Wedderburn	Cement
Pyrites operated on	
Unity	March (50 tons - 97 oz. of gold)

Alluvial mining. The Berlin rush has been a great success; I registered ten prospecting claims in that locality. Cleland, Fortunate, and Gilmore Gullies have equalled in richness any goldfield in the colony. Quartz mining. A large tract of abandoned reefs has recently been applied for on lease.¹²³

Dec 1868: Redbank and St Arnaud South Subdivision
 Quartz Tailings & Cement crushed:

Lancashire Reef Crushing Co., Stuart Mill	Tailings from Strathfillan Creek
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Owing to the late exceedingly dry weather, the miners in the neighbourhood of Victoria Gully have been very much in want of water. The Isis Quartz Mining Company, Stuart Mill, has finished the erection of their engine and pumping plant, and has taken contracts for sinking the shaft a further depth of 60 feet. There have been a great many applications for leases in the neighbourhood, and almost all the available ground has been marked out, containing reefs that were abandoned for a long time.¹²⁴

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 123 Mining Surveyors' Reports, Dec 1868
 124 Mining Surveyors' Reports, Dec 1868

Dec 1868: St Arnaud North Subdivision
 Quartz crushed during the quarter by/from:

Tributers	Carr's Lease
Hoskin and Co.	Wilson's Hill
Jerejaw	Jerejaw Reef
Sanderske and Co.	Sanderske's Lease
Tributers	Bell Rock Lease
Johnsons and Co.	Bristol Reef
Cenel and Co.	Garibaldi Lease
Chapman	Chrysolite Hill
Rimmer and Co.	Chrysolite Hill
Perry and Co.	Hopeful Reef
Penberthy and Co.	Blink Bonny
Brown and Co.	Warwickshire Reef
Croyden and Co.	Bristol Reef
Mount Emu	Mount Emu Reef
St. Arnaud	Walker's Lease
Malcolm and Co.	Fishhook Reef
McMahon and Co.	Bristol Reef
Prospectors	Greenock Reef
Quartz Tailings & Cement crushed:	
Butcher and Co.'s crushing engine	
Pyrites	
Tributers	Bell Rock (40 tons for 54 oz.)

We have recently had three good machines added to our local plant. The late dispersion of the silver miners has had the effect of turning up alluvial ground of considerable promise.¹²⁵

March 1869: Korong Division (R. Mason)
 Quartz mining. In this branch of mining there is a large deficiency in the amount of gold returned, principally caused by the want of water and the superior attractions of the Berlin rush.
 Alluvial mining. The Berlin rush continues to be the leading feature in mining in this division. The total number of persons on the ground are estimated at 2,000, and reports of new ground being opened, and large nuggets discovered, are frequently occurring.¹²⁶

March 1869: Redbank and St. Arnaud South Subdivisions (William Byrne)
 Alluvial mining in this division is principally carried on by persons who, during a portion of the year, have been engaged in agriculture.
 Quartz mining is progressing, several leases having been applied for. The Isis Company is erecting an 18-inch cylinder engine for the purpose of driving a battery of 12 heads; the present depth of their shaft is 180 feet. They are putting in a cross-cut towards the Star of the East; the lodes they have already cut look well. The Moonambel Tunnelling Company has commenced operations; several tons of quartz was carted from their mine to Ballarat.¹²⁷

March 1869: St. Arnaud North Subdivision (John Phillips)
 There is nothing of special interest to notice in the working or success of the established mines of the locality. The Bell Rock, Bristol Reef, Wilson's Hill, Walker's, Trinidad, Chrysolite Hill, Greenock Reef and Isabelle Reef being pursued steadily, with fair yields. The Messrs Learmonth are erecting an engine on the Bristol Reef for drawing water and stuff; and the prospectors of Isabelle Reef, near Avoca River, are putting up their stampers.¹²⁸

June 1869: Korong Division (R. Mason)
 Inglewood. The Lady Darling crushing plant has been removed from this division. The Prospects of the Unity Company are improving. The European Company is about to reorganise, with larger capital. The principal reefs are still unworked. Kingower. The National Quartz Mining Company has laid down a portion of their powerful crushing plant on the Union Reef. Korong - The Korong Company are sinking and slabbing a new engine shaft. Lane's Reef Company is progressing in a similar manner. The Wedderburn Quartz Mining Company is about reorganising.

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126 Mining Surveyors' Reports, March 1869

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Jericho - Prince of Wales Reef, German Reef, Champion Reef, Black Reef, Phillips' Reef and Patterson's Reef, are all on one line of reef. The British Sovereign Company, recently formed, has struck gold in Patterson's Reef, at 170 feet in depth; the reef is about 6 feet thick, with gold well set in the solid stone. These reefs form a straight line of the surface, and are about three miles in length. Burke's Flat - The Lilliputian, Deadlock, and Evening Star Reefs are returning good dividends. This portion of the division is steadily improving. Alluvial mining - Berlin is till extending. The last rush was to Tyler's Bridge, about one mile south-east, being a continuance of the same watershed to Sandy Creek. Gladstone rush, Thompson's Gully rush, Simpson's Creek rush, and Garibaldi rush, are only in embryo, for want of miners. The alluvial leads of this division appear to be radiating in every direction from the granite hills to the plains.¹²⁹

June 1869: (William Byrne)

In alluvial mining in this division there is little to report with the exception of several large areas being applied for under the leasing regulations on the Slaughteryard Lead. This is mainly owing to a report that has been obtained circulation that some very good prospects have been obtained by the White Elephant Company (lately the North British), New Year's Flat. This company has erected a 10 horse power engine and pumping gear, and is now busily driving for the lead. The recent heavy rains have proved a great boon to those working the shallow ground in the neighbourhood of Victoria Gully, the miners having in many cases stored great quantities of washdirt. In quartz mining the Stuartmill portion of the division takes the lead. The Isis Company has nearly completed their battery, and expects to crush in a fortnight. There are about 200 tons of very good-looking stone now raised, and as the sinking becomes deeper the thickness of the stone increases; it is now about 6 feet. Several leases have been applied for and surveyed lately.¹³⁰

June 1869: (John Phillips)

I have nothing of very special importance on the whole to announce for the quarter. Some undertakings are temporarily suspended; while others are being revived; and among the latter may be noticed the lease taken up by Messrs Learmonth, where they have been sinking by aid of machinery recently supplied, and dropped on quartz lode of good thickness and regularity, with a fair show of gold. The Isabelle Reef machinery is just now to commence on a large batch of quartz, promising well. The Bell Rock in now idle. The Ballarat and St. Arnaud Company are down earlier to water in a new shaft than was thought of, and are now going to crosscut at about 200 feet. There are a few who have faith in this enterprise of regaining the Chrysolite Hill veins in this direction at a proper depth, and I cannot but regard it as among the fair mining speculations. Although the heavy minerals are abundant and rich in gold, as coming from our greatest attained depths, the quartz owners are obliged to be satisfied with pennyweights instead of ounces to the ton in consequence of the difficulty of separating the gold from pyriteous ores.¹³¹

Sept 1869: Korong Division (R. Mason)

This branch of mining has been very successful during the quarter, the number of miners having nearly doubled itself, and also the quantity of gold produced, without reference to that which has been sent to other districts from Berlin. Hitherto most of the gold has been found in the dry formation, and now that washing has commenced still larger returns may be expected. Quartz mining - Several claims on the Morning Star line of reef have amalgamated, and are now erecting pumping and winding plant. Another amalgamation of the Unity Company and several others is also projected. The Old Prince of Wales Company, at Jericho, has expired, and this splendid claim and powerful crushing, pumping and winding plant has passed into the hands of a Ballarat Company. A similar change has been made at Wedderburn. The National Quartz Mining Company at Kingower is now erecting their steam engines, etc.¹³²

March 1869: **Tyler's Rush** - the rush spread to the area north of Christmas Flat known as Tyler's, where William Tyler, an old Warwickshire man, had kept a hotel since 1853, and Berlin rush thereafter was often referred to as Tyler's Rush. In 1869 or thereabouts there were rushes to Humbug Hills, south of the station, and near Orville Creek.¹³³

1869: A mining plant was erected at Dodd's Hill, Fenton's, in 1869 after a deep lead was discovered there.¹³⁴

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- 129 Mining Surveyors' Reports, June 1869
 - 130 Mining Surveyors' Reports, June 1869
 - 131 Mining Surveyors' Reports, June 1869
 - 132 Mining Surveyors' Reports, Sept 1869
 - 133 James Flett, 1979, The History Of Gold Discovery in Victoria, pp292-296
 - 134 James Flett, 1979, The History Of Gold Discovery in Victoria, pp299-301

- Sept 1869:** Redbank and St. Arnaud South Subdivisions (Hugh St. H. Blair). In alluvial mining the extreme dryness of this season has been a great drawback to miners working shallow ground. The Sphinx Company, Slaughter-yard Flat, have struck water; they were unable to cope with it by horse and whim, and are now engaged in placing pumps to be worked by a portable steam engine. Quartz mining in the neighbourhood of Stuartmill is progressing favourably, and attracting the attention of capitalists. The Isis Company ... are adding ten additional head of stamps to their plant, and when completed the company will possess one of the most effective crushing plants in the colony; the machinery is of the best description, and combines the latest improvements; each battery is provided with Brown and Stansfield's concentrators, and the company are now engaged erecting furnaces and Wheeler's pans. ¹³⁵
- Sept 1869:** St. Arnaud North Subdivision
At the Ballarat and St. Arnaud shafts the increase of water is regarded as an indication of the presence of reefs yet unseen, and for which they are driving. The D'Israeli shaft is being put down with the same object. At the Trinidad shaft they have struck a reef of good size and promise. The Isabelle Reef, at Mount Emu, is showing well, and the workers are busy. ¹³⁶
- March 1870:** Korong Subdivision (R. Mason)
By a notice published in the Government Gazette of the 18th March 1870, page 468, the Division of Korong has been divided into two subdivisions, which in these reports are called respectively the Korong and Berlin Subdivisions. Mining generally in this division is in a very depressed state. The principal reefs are unworked, and the dry season has operated against the progress of alluvial workings. ¹³⁷
- March 1870:** Redbank and St. Arnaud South Subdivisions:
The depressed state of the mining market, coupled with yields from the Oxonian Reef having disappointed public expectation, has greatly retarded quartz mining operations in these subdivisions. Alluvial mining appears to be prosecuted with little energy and unsatisfactory results, which may in some measure be attributable to the great scarcity of water. ¹³⁸
- March 1870:** St. Arnaud North Subdivision:
Both quartz and alluvial mining in this division for some time past has been in a depressed condition, principally owing to the want of capital to erect efficient machinery for the purpose of working deeper the numerous reefs already proved to be highly remunerative. On the Greenock Reef the leaseholders are busily engaged erecting powerful machinery for pumping, winding and crushing purposes, which is now approaching completion. ¹³⁹
- June 1870:** Korong Division (Henry J Hughes)
Alluvial mining. The population of Berlin has decreased very considerably during the quarter, and, although gold is being found by a few in very large quantities, many miners will shortly have to leave unless new ground be opened up. At Dodd's Hill the Pioneer Company have struck a lead showing washdirt, which is expected to yield about an ounce to the ton. Quartz Mining. The Unity Company has been engaged draining their mine prior to again prospecting it; the water they have had to contend with has been very troublesome, owing to a large extent of country being included in the area unavoidably drained by them. The Morning Star Company is engaged sinking their engine shaft. The National Company, Kingower, is still prospecting their mine, and has obtained good samples, although the crushings did not average what was expected. The British Sovereign Company, Wehla, who have been engaged sinking a shaft, in order to test the reef at a lower level, struck a well defined lode showing gold at a depth of 310 feet from the surface, and have thus upset the theory that the Wehla reefs are merely surface blocks. Most of the other reefs have remained unworked, but attention will certainly be paid to them as soon as the Unity or Morning Star Company strikes gold. Five new reefs have been discovered, two of which have already yielded payable stone. ¹⁴⁰

135	Mining Surveyors' Reports, Sept 1869
136	Mining Surveyors' Reports, Sept 1869
137	Mining Surveyors' Reports, March 1870
138	Mining Surveyors' Reports, March 1870
139	Mining Surveyors' Reports, March 1870
140	Mining Surveyors' Reports, June 1870

- June 1870:** Redbank and St Arnaud South Subdivisions (Hugh St. H. Blair)
The chief feature of the quarter has been the discovery of alluvial gold at Sandy Creek ... There are still about four hundred miners on the ground; gold has been found in several of the tributary gullies. No lead has as yet been traced into the main fault. The general condition of the miners is at present far from prosperous; but I believe the prospecting now going on in the neighbourhood will ultimately lead to good, as the country is intersected with quartz reefs, and the general appearance is such as would lead to the belief of the existence of a payable goldfield. Quartz mining operations in this subdivision still remains in a depressed condition.¹⁴¹
- June 1870:** St. Arnaud North Subdivision (P. Simpson)
Mining matters have been much depressed during the last quarter, and this depression has exerted an influence over some of the best working claims in the division, including some of those on the Chrysolite and Wilson's Hills. 136 tons of quartz crushed for the Freiberg Company yielded about 40 oz. of an alloy of gold and silver worth 50s. per oz. 7 tons of quartz at the silver mines yielded 10 oz. of an alloy worth 28s. per oz. At Messrs Learmonth's Shewring's Reef, the reef was cut about a month ago in the old shaft at 220 feet. In the new shaft it has been cut at 200 feet. At the Greenock Reef the company are still engaged in erecting machinery. The aggregate horse-power of steam engines (three in number) will be 100. The pumping and winding machinery is covered in, and the battery, a fine one of 20 stamps, will be covered in shortly. When complete, the machinery will include Brown and Stanfield's patent concentrators and Wheeler's pans. At 205 feet the main shaft driving east the reef was cut at 70 feet and 90 feet, the former a leader only. The reef is about 5 feet in width. They are also obtaining good surfacing. Seven tons of pyrites were treated by Brown and Stanfield's concentrators and Wheeler's pans at the Isis Company's claim. In alluvial mining there is nothing to record beyond the discovery of one or two leads of limited extent in the neighbourhood of Armenian Gully.¹⁴²
- Sept 1870:** Korong Division (Henry J Hughes)
During the past quarter the population at Berlin has decreased, and the yield of gold from that portion of the division has greatly fallen off; although large nuggets are occasionally found on the private property of Mr. Catto and Mr. Johns, there are numbers of miners there not earning 5s. a week. Quartz Reefs. The Unity Company is till prospecting for payable stone at the lower levels. The Morning Star Company, Inglewood, has a yield of a little over 1/2 oz. to the load, and the Lilliputian Company, Burke's Flat, gave a return of 255 oz. from 350 tons crushed. At Wehla, the Prince of Wales Company and the British Sovereign are progressing, the former driving to the east to intersect a second reef, and the latter driving along the course of the lode at the 310-foot level, from which level a trail crushing will be taken shortly. Quartz reefing appears to have gained more attention during the past quarter, more than 1200 tons of the stuff having been crushed instead of 400 tons, the quantity of the preceding quarter; the average yield, however, is almost exactly the same.¹⁴³
- Sept 1870:** Redbank and St. Arnaud South Subdivisions:
Quartz mining in this division ... has not been attended with such good results as were expected, and at the present time most of the companies are in difficulties. Alluvial mining operations have been greatly retarded by the late floods. At Sandy Creek gold has been obtained about two miles north of the prospecting claims, but the heavy rains have in a great measure prevented the miners from thoroughly testing the ground.¹⁴⁴
- Sept 1870:** St. Arnaud North Subdivision
I cannot report any general improvement in mining in this subdivision during the past quarter. Messrs Higgins and Co., Chrysolite Hill, are thoroughly testing their ground, and should their efforts prove successful, it must, I think, produce a very beneficial effect upon quartz mining in the neighbourhood. At Messrs Learmonth's the machinery has been removed from the old shaft, Shewring's Reef, to the new one at the Bristol. They are now engaged in sinking this latter 50 feet, or to a depth of 250 feet. Robinson and Party, Black Rock Reef (adjoining the Bell Rock) are working from the surface on the underlie, at a depth of about 70 feet, and are breaking out very good-looking stone, the gold plainly visible therein. At the Greenock Reef mining operations have just been suspended...¹⁴⁵

141 Mining Surveyors' Reports, June 1870
142 Mining Surveyors' Reports, June 1870
143 Mining Surveyors' Reports, Sept 1870
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- Dec 1870:** Korong Division
A slight rush set into Christmas Flat and some fine gold was obtained, as well as nuggets of 1 lb. weight and under, and it is expected that the ground will be entirely turned over, as it is a continuation of Tyler's. In the latter part of the quarter a rush took place to a spot called Craigie Lea, close to Korong, and some gold was obtained by several, and it is not impossible that many miners will leave Berlin for that locality after the holidays. Large nuggets still continue to be found in the private property at Berlin. Quartz mining. The only company that has given a good yield as the Lilliputian, Burke's Flat. All the other companies are progressive, sinking or driving in search of stone, which is known to be payable, if it can be met with before the shareholders' patience and money are exhausted. ¹⁴⁶
- Dec 1870:** Redbank and St. Arnaud Subdivisions (P Simpson)
Very little has been done in quartz mining this quarter. The Isis claim is being carried on by a new company, the New Isis, who have let the mine on tribute. The Sandy Creek rush does not extend, but it well supports the number engaged there. The principal feature of the quarter is the rush to Middle Creek, where there are now between three and four hundred miners. ¹⁴⁷
- Dec 1870:** St. Arnaud North Subdivision.
There are not, I think, wanting signs of improvement in quartz mining here, although both the amount of quartz crushed and the average yield is less than those of last quarter, and although it is sure that none of the larger claims (excepting Higgins' perhaps) have been very successful of late. Messrs Higgins and Co. cut the Rising Star Reef at the 420-foot level, 6 ft to the east of the shaft. The reef is 5 to 6 feet in width. At Messrs Learmonth's Bristol Reef, mining operations have been much retarded by the influx of water on cutting the reef at the 250-foot level. The Greenock Reef has changed hands. It is now worked by the Phoenix Company. At the 200-ft level it is driven 110 feet south and 100 feet north of shaft. Alluvial. There has been a small rush - amounting at one time ... to between one and two hundred - to Strathalbyn, a tributary of Armenian Gully. It is said a Chinaman obtained a nugget here weighing 96 oz. The Emu new diggings are about 1-1/2 miles north-west of the township. Some miners have been earning from £3 to £5 per week for the last two months. ¹⁴⁸
- 1870:** Gold was discovered in some tributaries of Armenian Gully, and there was a large rush to Strathalbyn Gully, one of these. ¹⁴⁹
- 1870/71:** New rushes to Sandy Creek - there began a new series of rushes, following discoveries of new ground on Sandy Creek in April and Middle Creek in October. Gold was also discovered in John Bull Creek. In 1871 a new goldfield called Fowler's Lead started south of the old one at Sandy Creek, and a small village that started was called Canterbury. ¹⁵⁰
- March 1871:** Korong Division:
During the past quarter alluvial mining has been attended with the best results, as regards the gross yield of gold obtained; but considering the number of men employed at that branch of mining, as compared with the number engaged on the reefs, it would certainly appear that reefing, after all, is the most profitable.. Alluvial mining. At Berlin, where nearly all the alluvial gold comes from, the population has remained unchanged with respect of the number mining, as, whilst many have left, new arrivals from other parts (from Spring Creek especially) have taken their places. Christmas Flat, Berlin, has lately been the centre of attraction, and has slightly depopulated the other portions of the Berlin goldfield. Besides the nugget found by Brown and Collins, weighing 197 oz. 14 dwts., others of 5 lbs. weight and under, together with fine gold, have rewarded the workers at Christmas Flat, which place, more than two years ago, was prospected, as was thought, thoroughly, and then almost entirely deserted as being unremunerative. The Deep Lead Company of Inglewood bottomed their shaft towards the latter end of the quarter, at a depth of 121 feet, and obtained a prospect of half-an-ounce to the load. Work has, however, been suspended for a short time, to enable the company to obtain the services of a manager and miners used to deep alluvial ground; the expenses incurred in sinking having been considered excessive. Quartz mining. The Unity Company, Inglewood, is still engaged sinking, with the object of hitting a permanent well-defined reef, at a depth of about 350 to 400 feet if possible. The United Maxwell Company, Reality Reef, Inglewood, have obtained and crushed some very good stone during the past quarter, and by their success have been partly the cause of inducing their neighbours, the Hope and Anchor Company, to resume work.

146 Mining Surveyors' Reports, Dec 1870

147 Mining Surveyors' Reports, Dec 1870

148 Mining Surveyors' Reports, Dec 1870

149 James Flett, 1979, The History Of Gold Discovery in Victoria, p452-453

150 James Flett, 1979, The History Of Gold Discovery in Victoria, pp448-451

The March Company, Inglewood, has also had men at work, and several of the reefs close to Inglewood, once abandoned are now being worked. At Kingower the Kingower Quartz Mining Company are still actively engaged preparing their mine for prospecting for the run of stone which at one time yielded so well. At Wehla the New Prince of Wales Company, after having expended much money, have stopped work, in consequence of the difficulty experienced in collecting calls; but, on the other hand, the British Sovereign Company have purchased a very powerful crushing plant, and, have proved their mine to a depth of 310 feet to be payable, intend commencing crushing shortly. At Burke's Flat the Lilliputian Company still continue to give handsome returns, and to take the lead in the district; the reef, at a depth of 200 feet, being three feet wide, and the stone all through averaging 14 dwts. to the load. ¹⁵¹

March 1871: Redbank and St. Arnaud South Subdivision
Quartz mining is still depressed in this division, the Isis being almost the only company now at work. The mine is being steadily opened out by the tributers. As regards alluvial mining, Middle Creek has not fulfilled the anticipations formed of it; there are still, however, about 300 men on the first rush. ¹⁵²

March 1871: St. Arnaud North Subdivision
Higgins and Co. Chrysolite Hill, are at work at the 200-foot level, continuing the levels along the course of the lode, and also stoping out. They are driving also for Paddy's Reef to the east. The Chrysolite Hill Company and Messrs Higgins have arranged so that the former will be enabled to work the reef from Messrs Higgins' drive as soon as the latter have reached the common boundary, which is now about 40 feet distant. Messrs Higgins will drain the ground, haul to surface and deliver stone to the Chrysolite Hill Company's battery. At Messrs. Grenville's, Victoria Reef, excellent stone is still being obtained. The Bell Rock Company have, I understand recommenced work. ¹⁵³

June 1871: Korong Division.
The quarter ending 30th June last exhibits a falling off, as compared with the previous quarter, both in alluvial and quartz mining, but the deficiency can be accounted for in many ways, without detracting from the value of the gold-field. In some instances the permanent works undertaken by various quartz companies have prevented crushing altogether; while the principal of the alluvial claims, certain matters connected with the internal management of the company have placed many obstacles in the way of progress. Alluvial mining. At Berlin, a few brilliant discoveries have taken place. In Catto's paddock, a party of Chinese found, in April, a nugget weighing 718 oz 5 dwts., and in the same paddock Gardiner and Co. obtained, in May, 246 oz 16 dwts. in weight; several smaller nuggets, varying from 1 oz. to 12lbs. have also been got. The Crown Lands at Christmas Flat, Berlin, have also given good yields to a few. During the quarter a rush was made to Scorer's Lead, about three and a half miles from Inglewood, and over 300 men were at one time on the ground; the result of their work was not very successful; the number of men is now reduced to fifty, and a rush of miners to the Stockyard and Gulgong (N.S.W) diggings checked prospecting, and left miles of apparently auriferous country untried. The Daly Gold Mining Company, registered, have not yet had a washing up ... Anticipated successes of this company led to a party being worked to the ground adjoining the company's lease, and a second to thoroughly test the deep lead at Old Inglewood. Quartz mining. The Unity Company, registered, Inglewood, are down 386 feet, at which depth cross-cutting was commenced...The Morning Star Company, Inglewood, struck payable stone at 260 feet, but have not yet commenced crushing. The Reality and Hope and Anchor Companies have been engaged during the past quarter sinking their shafts to a greater depth with a view of striking upon good stone. The Cambrian Reef, to the west of the Unity Reef, gave a good crushing, and looks well. The Poverty Reef has met with some stone displaying gold to a fair extent, and the ground in the immediate vicinity has thereupon been eagerly sought after. The Maxwell Reef United Quartz Company, has had the necessary machinery for raising and crushing in working order for some weeks. At Kingower, the Kingower Quartz Mining Company, registered, has put in various drives at the 150 and 170 foot levels. At Wehla, the Prince of Wales Company have given up work altogether, and sold of their plant. The British and Sovereign Company will have their new machinery ready for working order in about a week, and plenty of stone is raised, ready for crushing. At Burke's Flat, the Lilliputian Company is somewhat under its average, but it yet gives 12 dwts 22.6 grs. per ton, with good appearance, and more machinery is determined on; and, at the same place, the Deadlock Company exhibits better returns than last quarter. At Wedderburn, many fresh claims have been taken up on Lane's Reef and Specimen Hill. During the past quarter the Korong Division of the Maryborough Mining District has met with more attention than for some length of time has been awarded to it; yet many valuable claims are lying idle, or only partially worked, and the want pointed out in my last report, namely the influx of foreign capital, still continues. ¹⁵⁴

1870s: Specimen Hill Reef tried unsuccessfully by various parties, culminating with the claim being acquired by a syndicate of Melbourne men who floated it into a public company Crushing, pumping and winding

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plants were erected ... and a shaft continued to a depth of 171 feet ... After 12 months the company was wound up and the plant sold off and removed.¹⁵⁵ [Specimen Hill Company in early 1870s].

June 1871: Redbank and St Arnaud South Subdivisions.
The New Isis tributers are engaged in sinking and driving, with much better prospects...Work has been resumed on the Ben Lomond and Velciped claims, Stuart Mill. At Redbank, a small rush has taken place to the old Fighting Flat Lead. The prospect is about 7 dwts. At Middle Creek, a branch gully, uniting with the new lead at Taylor's claim, is now being worked, and yielding good returns.¹⁵⁶

June 1871: St. Arnaud North Subdivision.
The prospects of this division are looking decidedly better. On the Chrysolite Hill the reefs are more defined as they work deeper. The Chrysolite Company is working from the 400-ft level, out of Higgin's claim. They are driving and stoping, with a view to communicate with their own shaft, which have been put in repair to the 27-ft level, and is being sunk to the 400-ft level. Two of Brown and Stanfield's patent concentrators have just been erected. On the Rising Star and Paddy's Reefs they are stoping from the 400-ft level. Bell Rock - The lessees have purchased the tributers machinery, and it is probable that work will be resumed in this claim before long. The silver mines are idle...From the Blink Bonny Reef excellent yields are being obtained ... The width of the reef at the water level is from 6 inches to 1 foot. A fourteen horse-power engine, with Cornish boiler, is being erected on the claim and the battery of ten stamp-heads has been removed here from the Greenock Reef. This will, I think, increase prosperity in the Mallee; a great disadvantage has been the distance to cart quartz. The tributers of the Phoenix Company have been sinking their shaft to 270 feet. At Messrs Clegg's claim they are stoping out south of old shaft, Shewring's Reef.¹⁵⁷

Sept 1871: Korong Division (Henry J Hughes)
The past quarter has witnessed much activity in applications for leases, with a view to develop the unoccupied auriferous ground in and about Inglewood, and it is generally anticipated that before the close of the current quarter miners will have ample work, and the ground so long deserted, but which has yet, in past time, given such indications of richness, will again be worked profitably; outside capitalists having, at last, become aware of the reefs in this division. Alluvial mining. At Berlin the yield of gold has been much smaller than during the previous quarter; there are, some parties prospecting for reefs. The Daly Lead Company, Inglewood, has driven in different directions about 200 feet, but, although gold has been obtained, the company is still working at a loss. Quartz mining. The Unity Company, at a depth of 376 feet, is turning out stone, which is likely to average 9 dwts. to the load. This is the greatest depth at which any payable stone has been obtained in this division. The United Maxwell and Havilah Companies, on the Maxwell line of reef, Inglewood, are in active work, and payable stone has been obtained; the latter company giving from one crushing an average of 11 dwts. to the load. The Certainty and Rainbow claims, on the same line are progressing, and are expected to soon raise payable stone. The Columbian Company has purchased some machinery, and will soon commence operations in search of the run of gold that once paid so handsomely. The Reality and Hope and Anchor Companies, Inglewood (whose leases adjoin the Unity Company's ground), are seeking for the run of golden stone that the latter company has struck. On the Poverty line of reef vigorous mining operations are being carried on, the owners of the ground having lately purchased the engine and leases lately held by the Morning Star Company (now defunct). At Kingower, the Kingower Company have not, as yet, met with the success anticipated; and, at Burke's Flat, the Lilliputian Company has had no crushing, the owners of the mine having ceased work pending the reconstruction of the company.¹⁵⁸

Sept. 1871: (Redbank and St Arnaud South Subdivisions)
The New Isis tributers are stoping out at the 300-foot level, and sinking shaft on underlie. A lease has been applied for on the Slaughteryard Reef, Moonambel. A reef, which has, I understand, produced as much as 60 oz per ton, but has been long unworked, as it requires machinery for its further development. At Messrs Wills' alluvial claim, White Patch, Moonambel, winding and pumping machinery is being erected, and mining operations will be shortly commenced. In a gully near the Hard Hills, between Redbank and Stuart Mill, a nugget was found, in 14 feet sinking, of about 4lbs weight; of this about 30 oz was pure gold.¹⁵⁹

155 J.R Gray, 1888 (edited by Frank Cusack in 1981), pp24-30
 156 Mining Surveyors' Reports, June 1871
 157 Mining Surveyors' Reports, June 1871
 158 Mining Surveyors' Reports, September 1871
 159 Mining Surveyors' Reports, September 1871

Sept. 1871: (St Arnaud North Subdivision)

Only a comparatively small quantity of stone has been crushed this quarter from Chapman's and the Rising Star claims, Chrysolite Hill. This has been in consequence of Messrs Butcher and Co.'s mill having been idle for a great part of the time for the execution of repairs. The Chrysolite Hill Company (as may be seen from the return of quartz crushed) are now fairly at work; and lately, I believe, on the Chrysolite and Ballarat Reef as well as the Western Reef. I am sorry to have to report a suspension of work on Messrs Clegg's (late Learmonth's) Claim, Shewring's Reef, the water proving too heavy for the machinery at present there. The Phoenix Company, Greenock Reef, is driving at the 275-foot level. A new reef has been discovered at Bolangun, which has attracted a few miners to that neighbourhood again.¹⁶⁰

December 1871: (Korong Division) During the past quarter a great impetus has been given to this description of mining by the Unity Gold Mining Company (registered) obtaining payable stone at the depth of 376 feet, and thus disproving the theory that the lodes in this district are mere surface blocks. The Unity Company have let a contract to sink the well-shaft to a depth of 50 feet more, so that they may be enabled to work the stone (which looks promising) at their present lowest level. The Reality Company (registered), whose ground adjoins the Unity Company's on the south, is driving east at the 275-foot level, and is passing through a reef of great width, which shows some gold. To the west of the last-named company the Hope and Anchor Company is driving to the west. South, again, the Morning Star line of reef has by its crushings during the quarter made Mr Baragwanath and his partner's sanguine of quick returns for their enterprise, and has also caused a company - the New Dominion - to be floated successfully. The March Reef Company, to the north of the Unity Company, are sinking with the object of hitting the Unity run of stone; and the Eclipse Company, to the south, on the Surface Hill, are sinking with confidence of soon again giving dividends to the shareholders. On the Maxwell line of reef the Maxwell United Company, having proved that the run of gold has been taken out of the shallow workings, have determined upon sinking their shaft to a greater depth. The Havilah Company, north of the last-named company, has obtained some very fair crushings from a reef of over 3 feet wide. To the south of this claim the Hope has obtained a reef with fairish prospects; and the Certainty have been engaged sinking a winze, as also the main shaft, payable looking stone being met with in both. On this line, during the past quarter, several leases have been applied for, and it is generally predicted that the first largest cake of gold obtained in the district will be produced from this reef. With the Jersey line of reef prospects are looking better, as very shortly capital will be employed in the erection of machinery, not only on the Jersey Company's ground, but also on the Royal Standard's ground, and, lastly, on the Victoria Claim. The proprietors of the claims on that line - viz., the Royal Standard, Duke of Edinburgh, Jersey Victoria, Jersey Pride, and Roderick Dhu - look forward to soon seeing the Jersey line regain its former prestige of being one of the richest in the district, by yielding its 3 to 4 oz to the load, as before. With the Columbian line also there is every prospect of the New Columbian Company rivalling its namesake, the Old Columbian, which in one little crushing of 22 tons gave the magnificent cake of over 2300 oz of gold. Many more mining ventures might be enumerated as having been originated during the past quarter, but the leading ones have only been referred to...

ALLUVIAL MINING - This branch of mining has not met with the attention due to it. The Daly Lead Company, although getting capital washdirt, have not yet succeeded in paying dividends, owing to the insufficiency of their plant and capital, but have now wisely resolved to increase their capital, their last crushing of nearly 19 dwts to the load justifying them to adopt that course. A company - the Golden Stream - is also being organised to work the ground south of the Daly Claim, and, as gold has been got on boring, no doubt before three months many miners will be employed on that lead.¹⁶¹

December 1871: (Redbank and St Arnaud South Subdivisions)

The Homeward-bound Company, White Patch, Mountain Creek, is now getting regularly to work. Their shaft is 72 feet deep. In the earlier part of the quarter a considerable rush again set in to Sandy Creek, between one and two miles south of the original rush. It has greatly fallen off, but there are still a good number of miners on the ground. The depth of sinking is about 60 feet. Half an ounce to the load has been obtained, but 7 or 8 dwts is an average. Work is suspended on the Darling Flat Reef, owing, I believe, to the reef pinching out, and also to the poverty of the stone at the lower levels. The company evidently still has faith in the reef, as I understand they intend resuming work shortly.¹⁶²

December 1871: (St Arnaud North subdivision)

Mining is extremely dull in this division at present; the only claims that are doing much being the Rising Star and Chrysolite. I am sorry to have to report that the Phoenix Company's claim has been sold at a merely nominal price. The machinery will very probably be all removed in a short time.¹⁶³

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 161 Mining Surveyors' Reports, December 1871
 162 Mining Surveyors' Reports, December 1871
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- March 1872:** (Korong Division)
 During the past quarter mining has been rather dull, but the holders of claims, especially quartz, are confident that affairs will soon take a turn for the better, and that upon either the Unity Company or Maxwell Reef United Company striking rich stone a large amount of capital will flow into the district to assist in developing reefs which have previously proved very remunerative. On the Maxwell and Unity lines of reef much dead work has been done during the quarter - that is, sinking main shafts, to enable the claims to be worked to a better advantage - and the Columbian Company, having everything now read, may soon be expected to be actively at work. At Burke's Flat, Fones' Claim will soon be having regular crushings, and at Jordan's the British Sovereign will, upon the obtaining water to supply the boilers, resume work. With regard to alluvial mining there is very little to be said, except that at Berlin many miners have left, and the Deep Lead, Daly Lead, and New Guinea Companies have suspended operations pending the formation of companies with sufficient capital to thoroughly test the ground held by them respectively.¹⁶⁴
- 1872:** **Avoca Forest Rush.** There was a large rush to the Fenton's Creek area, about half-way between Fenton's and the Avoca River in the winter of 1872, to Avoca Forest Rush, about three miles north-west of Cameron's Avoca Forest station. The original discovery of gold here was made by Joseph Norris and party in May 1872, in a north and south gully called Berwick Flat and two tributary gullies on the east side. By November 1872 there were 1200 people collected on the rush, with a street of shops along the main lead, but the ground was rather poor.¹⁶⁵
- March 1872:** (Redbank and St Arnaud South subdivisions)
 The tributers of the New Isis Company are working on the underlie at a depth of about 330 feet. ALLUVIAL MINING - The Homeward-bound Company, White Patch, Moonambel, are driving at a depth of from 25 to 43 feet. They have driven about 200 feet on the lead from the main shaft towards Mountain Creek. At Sandy Creek the old diggings are almost deserted. The new rush to the south continues about the same as last quarter.¹⁶⁶
- March 1872:** (St Arnaud North subdivision)
 The Chrysolite Company's ground is being worked by a Sandhurst tribute company, who has taken it for seven years. The arrangements with the adjoining claim (Messrs Higgins'), for working the mine out of their ground at the 400-foot level. At Messrs Thompson's Hopeful Reef the stone is looking well. Work has been resumed at the 300-foot level on the Wilson's Hill Reef, which has been so long idle. A Sandhurst company has just been floated for the purpose of working Messrs Clegg's claims on the Shewring's and Bristol Reefs (reefs which have, I believe, produced as good yields as almost any about St Arnaud). At Messrs Biddington's Blinkbonny Reef work is at present suspended. A Melbourne company has just been formed for the purpose of working it... Up to the end of February they are engaged in stoping out. An accident to their crushing plant has prevented them obtaining much this quarter. A Sandhurst company has, I believe, been formed for the purpose of working the Bell Rock Leases. The Phoenix Company's Leases, Greenock Reef, have been purchased by Messrs Malcolm and Sutherland, who are making preparations for working them again.¹⁶⁷
- 1872:** There was a large rush to the Fenton's Creek area, about half-way between Fenton's and the Avoca River in the winter of 1872, to **Avoca Forest Rush**, about three miles north-west of Cameron's Avoca Forest station. The original discovery of gold here was made by Joseph Norris and party in May 1872, in a north and south gully called Berwick Flat and two tributary gullies on the east side. By November 1872 there were 1200 people collected on the rush, with a street of shops along the main lead, but the ground was rather poor.¹⁶⁸

164 Mining Surveyors' Reports, March 1872
 165 James Flett, 1979, The History Of Gold Discovery in Victoria, pp299-301
 166 Mining Surveyors' Reports, March 1872
 167 Mining Surveyors' Reports, March 1872
 168 James Flett, 1979, The History Of Gold Discovery in Victoria, pp299-301

June 1872: (Korong Division)

ALLUVIAL MINING. During the past quarter little worthy of special remark has occurred in this branch of mining. On Berlin gold is still being obtained, but not in quantities sufficient to support the population on that portion of the division. On Inglewood, the New Guinea Company, Daly Lead, expect within a few weeks to be in a position to register the company, when they will at once start to sink a new engine-shaft. The Daly Lead Company, whose ground adjoins that of the New Guinea, is endeavouring to increase their capital by the issue of more shares.

QUARTZ MINING - As regards the March Reef, Inglewood, the Unity Company during the quarter have sunk their main shaft from 411 feet to 432 feet, passing through hard blue slate. The adjoining claim the Reality, have sunk a further depth of 20 feet, and have driven 70 feet. The Hope and Anchor Company have driven west, at the 243-foot level, into broken ground. On the Morning Star Reef a very fair crushing has been obtained by Baragwanath and party, who are still raising stone; and on the Cambrian a crushing of over 16 dwts to the ton was procured. On the Maxwell line the Havilah Company have been occupied in sinking their main shaft and driving along the lode at the 330-foot level; and the Maxwell Reef United Company, after much up-hill work, have struck a lode at the 280 foot level, with very fair prospects, and their crushing plant will doubtless be again busy in the course of a few weeks. The New Columbian Company, Columbian Reef, has been engaged repairing engine-shaft, putting in pumps and driving to the west at the 250 and 300 foot level. The Bird-in-Hand and Malibar claims, on the Leicester line of reef, have been busy at work; and on the Honeymoon Reef the owners of the Prospecting and Uncle Tom claims expect soon to have payable crushings. The Jersey line of reef has not been much worked, but negotiations have been entered into for the erection of a powerful plant, when labour will be again employed there. At Burke's Flat, Fones' Quartz Mining Company have sunk their shaft to a depth of 260 feet, 60 feet of which was done during the quarter. On Wehla the British Sovereign Company have been slabbing up shaft and preparing for a pumping and winding engine. From Korong and Kingover no returns have been received, but at the former place there are over two hundred tons at grass, waiting for the mill to start. The returns of quartz crushed appear somewhat small, but there is a good deal of stuff shortly to be treated. No returns of washdirt puddled and cement crushed procurable.¹⁶⁹

June 1872: (Redbank and St Arnaud South Subdivision):

The prospects of the New Isis Company's mine continue well. An endeavour is being made to form a company to work the Richmond Reef, Redbank, by tunnelling. It is expected that machinery will be erected on the Slaughteryard Reef, Moonambel, in the course of a month or six weeks.

ALLUVIAL. The Homeward-bound Company, White Patch, Moonambel, are engaged in driving towards the creek, through a large body of washdirt. A small rush (principally of Chinese) has set in to the lower end of Hind's Diggings. The Homeward-bound Company, Moonambel, has not forwarded the number of machine loads of washdirt.¹⁷⁰

June 1872: (St Arnaud North subdivision)

The Rising Star Company, Chrysolite Hill, is stoping out from the 300-foot and 400-foot levels. An ordinary quartz claim (twelve men's' ground) has been taken up south of the above. The Chrysolite Hill Company is now engaged in crushing from the Western and Ballarat Reefs (270-foot level)... Their main shaft is now down about 376 feet. The Blink Bonnie Quartz Mining Company has commenced to sink their new shaft. They expect to strike the cap of the Arch Reef at 300 feet. The New Bendigo Quartz Mining Company is working at the 200-foot level, Shewring's Reef, the stone looking well. The Bell Rock Company is engaged in overhauling and altering their machinery, and is about to call for tenders for sinking a new shaft 500 feet in depth. On the Gap Reef work has been recommenced at the water-level. The stone looks well. Messrs Malcolm and Co., Greenock Reef, are driving from main shaft north. They are also working at the junction of their leases, at a depth of about 40 feet; the stone is good. The Phoenix Company's machinery is now, I believe, all removed.¹⁷¹

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- Sept. 1872:** (Korong Division)
 For the past three months quartz mining has been a rather unremunerative employment in this division, and work has been temporarily suspended in some of the principal mines, to enable the directors of the companies to collect arrears of calls and pay off liabilities before incurring further expense. The Maxwell United and New Columbian Companies are, for the reasons before mentioned, now allowing their ground to lie idle; but the last-named company will likely resume work within a month, and the Maxwell United about the commencement of the New Year. The Unity Company, March Reef, Inglewood, whose shaft is down 434 feet, expect daily to cut the reef at the 428-foot level, and should payable stone be there met with, a great impetus will be given to mining in this division, as many claimholders are waiting anxiously to see if gold is obtainable at that the greatest depth yet sunk in the division. Burke's Flat and Korong are likely to again furnish monthly yields of gold, very fair stone having been raised at both places from permanent reefs, some of which is now being crushed.
 ALLUVIAL MINING. No change, with the exception of a few trifling rushes, has taken place in this branch of mining.¹⁷²
- Sept. 1872:** (Redbank and St Arnaud South subdivision)
 The stone at the New Isis Company's claim has not been quite so good, but is looking well again. The Darling Flat Reef is again taken up.
 ALLUVIAL. The Homeward-bound Company, White Patch, Moonambel, have, I regret to state, suspended work without, I fear, any prospect of renewal. Fowler's Lead, at head of Sandy Creek, continues to support a good number of miners. There has been no sale of water for mining purposes during the quarter.¹⁷³
- Sept 1872:** (St Arnaud North Subdivision)
 Quartz mining is steadily progressing in the neighbourhood of St Arnaud. The excellent yields obtained of late from several of the claims must soon, I think, draw to this locality the attention it deserves. The Rising Star Company is driving and stoping in the new ground lately obtained by them. The Never-can-Tell Company - in the claim south of the above - have not yet been successful in cutting the reef. The Chrysolite Hill Company is stoping out from the 270 and 335 foot levels. Excellent yields are being obtained by the tributers of the Wilson's Hill Company. The reef in the bottom level is 3 feet wide. The Bell Rock Company is engaged sinking a new shaft to a depth of 500 feet. They are down about 80 feet. The Blinkbonnie Company have sunk about 90 feet towards the cap of the Arch Reef; sinking hard. The Victoria Company, Victoria Cross Reef, is still engaged in sinking. It is proposed to form a company for the working of the leases on the Gap Reef. Messrs Malcolm and Sutherland are engaged in steadily opening their mine on the Greenock Reef, from the surface and from the 180-foot level. A company to work the silver mines has been floated in the London market.¹⁷⁴
- December 1872:** (Redbank and St Arnaud South subdivisions)
 Work is at present suspended on the New Isis Company's claim, but will shortly be resumed. The mine has I believe been re-let on tribute. A new reef has been opened close to the Darling Flat Reef, with excellent results... It is intended to erect crushing machinery thereon sometime during the coming quarter.
 ALLUVIAL. The machinery has been all removed from the Homeward-bound Company's claim, White Patch, Moonambel. Alluvial mining generally is very dull.¹⁷⁵
- December 1872:** (St Arnaud North subdivision)
 At the Rising Star Company's claim, working at the 400-foot level, another cross reef has been discovered in Chapman's old ground. The Wilson's Hill tributers are stoping out at a depth of 360 feet. The Chrysolite Hill Company's shaft is down 381 feet, or to the 400-foot level in the adjoining claim (the Rising Star)... The Sandhurst and New Bendigo Company, Bristol Reef, are driving at the 250 foot level on the course of the lode... The water has been troublesome; about 2000 gallons per hour raised by tanks. At the Blinkbonnie claim they are engaged in sinking the shaft; ground hard. At the Bell Rock the shaft is down 131 feet. The Victoria Association has sunk their shaft to water-level, or 187 feet. A company has been formed to work the Hopeful Reef. They are now driving south on the course of the reef at a depth of 265 feet. Ground is being applied for on lease in the neighbourhood of the Wilson's Hill and Rising Star claims.¹⁷⁶
- 1873:** About the last rush ... (in Stuart Mill-Rostrons area) ... was to Wattle Flat near Rostron's in 1873.¹⁷⁷

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- 172 Mining Surveyors' Reports, September 1872
 173 Mining Surveyors' Reports, September 1872
 174 Mining Surveyors' Reports, September 1872
 175 Mining Surveyors' Reports, December 1872
 176 Mining Surveyors' Reports, December 1872
 177 James Flett, 1979, The History Of Gold Discovery in Victoria, pp448-451

March 1873: (Korong Division)

Mining in this division has been rather dull during the past quarter. The Havilah Company, Maxwell's Reef, has 22 men employed... The men are still engaged in driving, and the shaft is down to a depth of 400 feet. At the Union Company, Greek's Reef, the shaft is down to a depth of 175 feet, and the reef is 2 feet wide... Two men are employed. Emerald Company, Exhibition Reef. - In this company's claim four men are employed. The shaft is down to a depth of 195 feet, and the reef is 6 feet wide. At the Uncle Tom Company's claim, Honeymoon Reef, two men are employed. The shaft is down to a depth of 130 feet. On the Honeymoon Reef, McGurgan and another have taken up a prospecting claim, which they hold under miners' rights. They are employed in sinking the shaft. On the South Honeymoon, Richardson and another are engaged in sinking. The last crushing for the Bird-in-Hand Company was very poor. Two men are employed in the claim. On the May Reef, Metcalf and party have been employed in taking out quartz, but none has been crushed. Opie's Gold Mining Company, Simmons' Reef - On this reef three men are employed in raising quartz and sinking. Puddler's Reef has been taken up by Thompson and party, who have obtained some good prospects. Two men are engaged in driving in the reef. The Maxwell's Reef United Company has just succeeded in striking gold. The Unity Company's machine was employed during the latter portion of the quarter in crushing for the public. The scheme of amalgamation in the March Reef, proposed by the Unity Company to the Proprietary of the neighbouring claims, has not prospered, and the Unity Company have recently suspended work. Their ground has been worked at various levels down from the surface to a depth of 430 feet.¹⁷⁸

March 1873: (Redbank and St Arnaud South subdivisions)

At the New Isis Company's claim it will be seen that there is a falling off in the quantity of quartz crushed. Work has been resumed on the Eureka Reef, a larger lease over which has been applied for. Work is at present suspended on Scott and Co.'s Amalgamated claims (the prospecting claim of No. 1N), Rubby Reef, Darling Flat, during the forming of dam and erection of crushing machinery, a special site for which has been obtained. The tables will show that excellent stone is still obtained. Leases and claims have been marked out on this line of reef for over half a mile north and a quarter of a mile south of the prospectors. The claims immediately north and south of Scott and Co.'s are either getting out good stone or have good prospects. None will be crushed until the machinery alluded to above has been erected. At Fowler's Lead, Canterbury, a trial of the ground near the upper end, on the line of the lead, and which has hitherto proved unproductive, is being made.¹⁷⁹

March 1873: (St Arnaud North subdivision)

The Wilson's Hill tributers are still getting out good stone; width of auriferous reef 4 to 5 feet. The Rising Star Company is now engaged in crushing, which has been delayed by repairs to their crushing plant. The Sandhurst and Chrysolite Hill Company are opening up at the 380-foot level on the Ballarat and Western Reef, and cross-cutting east at the 335-foot level - about 70 feet from the common boundary of their and the Wilson's Hill lease - for the Wilson's Hill Reef. The Sandhurst and New Bendigo Company, Bristol Reef, are driving south on the course of the lode; width of reef 5 feet, gold visible therein. The Bristol Reef Company's leases, with crushing plant, have been purchased by the above company. At the Bell Rock the shaft is down about 200 feet. The Blinkbonnie Company has sunk about the same depth. At the Victoria Claim, driving south, at the 186-foot or water level, good stone is being got out. The Avoca Tribute Company, Hopeful Reef, has struck payable stone in their old workings. Work has been resumed at the silver mines. The machinery at the old Silver Mines Reef is being put in order, and the shaft, which is 324 feet deep, cleared out preparatory to sinking the same still further. The whim has been removed from Sebastopol Hill and placed at the Rotten Reef shaft, which has been sunk an additional 100 feet. A complete alteration is being made in the crushing plant; a dry process is to be adopted. Roasting furnaces are being constructed at a cost of £1500. Another quarter will probably not pass over without some interesting results from this large undertaking. ALLUVIAL MINING. A small rush has taken place to Wattle Flat, near Rostron's.¹⁸⁰

June 1873: Korong Division (Mr. Nesbitt Cockburn)

Mining in this division has been dull during the past quarter, and there has nothing occurred worthy of any special comment. The Havilah Company, Maxwell's Reef, has twenty men at work. The Union Company, Greek's Reef, are still engaged driving. McGuigan and party, on the Honeymoon Reef, are engaged in driving and raising quartz. Opie's Gold Mining Company has crushed during the quarter about 25 tons of quartz. Puddler's Reef Company is engaged in driving. Maxwell's Reef United Gold Mining Company have crushed about 50 tons of quartz during the past quarter, with an average yield of 15 dwts. to the ton. Murphy and party have crushed some quartz during the past quarter on the Maxwell's Reef, with a similar average yield. The negotiations with regard to the amalgamation of the Unity, March, and Independent claims have been almost brought to a satisfactory conclusion. There has

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been a small, unimportant rush to Kurting's Gully, about six miles from Inglewood, but as yet without any very great success having been attained.¹⁸¹

June 1873: Redbank and St. Arnaud South Subdivision (Mr. P. Simpson)
At the New Iris the tributers are working in the No. 7 level at a depth of about 450 feet. Scott and Co., Rubbly Reef, Darling Flat, have been engaged in the erection of crushing machinery, which is almost completed. At the Eureka Reef work is at present suspended. Alluvial mining is very dull.¹⁸²

June 1873: St. Arnaud North Subdivision (Mr. P. Simpson)
At the Rising Sun claim, in driving south at the 400-ft level, they have a very fine reef, showing gold freely. One hundred and forty tons of pyrites, treated by Chilian mills, have produced over 3 oz. to the ton. At the Wilson's Hill work cannot be carried on in the lowest level on account of water. Two reefs have, I believe, been struck at the 300-ft level. Gold is visible in the principal, or Wilson's Hill Reef, and the prospects are stated to be above the average. The Chrysolite Company is putting in pumps to drain the mine. At the Greenock Reef work is being carried on above the water-level with fair prospects. The Victoria Association, Victoria Cross Reef, is driving east on the course of the lode. The Avoca Tribute, Hopeful Reef, is engaged in prospecting the reef. The Bell Rock and Blinkbonnie companies are still engaged in sinking. At the Silver Mines machinery is still being erected. The furnaces have been completed at a cost of £1600. The dry crushing battery and elevating machinery will be completed in a month or six weeks. The Rotten Reef, 2 feet 6 inches wide, and said to contain promising stone, is being worked at the 100-foot and 200-foot levels. Ore is also being taken out on Walker's old ground; so that on the completion of the machinery crushing will at once be commenced. A lease for quarrying granite has been applied for.¹⁸³

Sept 1873: Korong Division.
Mining in this division has revived a little during the past quarter. On the line of March Reef, the Unity, March Reef, and Independent Companies have completed their amalgamation, and the amalgamated company are about to commence work immediately in the Unity mine; and as they have very powerful machinery for both pumping and crushing, the working of this mine will greatly assist other companies on the same line of reef in the matter of drainage. Fone's Reef, at Burke's Flat, is looking well; also Brown's and prince of Wales Companies at Wehla. Quartz mining has considerably improved at Wedderburn. The Specimen Hill plant is about completed, and they are now crushing payable quartz from the Specimen Hill and Canadian Reefs. Several other reefs have been taken up in that locality and work commenced during the past quarter. In alluvial mining there is a very little doing at Inglewood. Steps are being taken to amalgamate the two companies on the Daly Lead, and form the two into a new company. During the past month a number of miners from Avoca Forest have returned to the old ground at Berlin, with profitable results; and some parties have commenced paddocking the shallow and wet ground with the intention of working through out the summer.¹⁸⁴

Sept 1873: Redbank and St. Arnaud South Subdivisions.
The new Isis Company is getting out stone from the No 6., or 386-foot level. A battery of eight stamps has been completed at Darling Flat, and the stone is being crushed from the Rubbly Reef. The Ram Quartz Mining Company is sinking on the supposed line of reef north. The Goldfinch Company (No.2 South) is sinking a new shaft more to the west, to cut the reef between 200 feet and 300 feet. At No 1 South claim a plumb shaft is also being sunk. The Eureka Company is cross-cutting for the reef. A small rush has taken place to the Hard Hill, near Moonambel. Alluvial mining is otherwise extremely dull. ¹⁸⁵

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- Sept 1873:** St. Arnaud North Subdivision.
The Rising Star claim is now being worked by a Melbourne tribute company. They are sinking the main shaft 60 feet deeper, or to a depth of about 466 feet. The Chrysolite Hill Company is preparing to drain their mine, and to sink their shaft 100 feet deeper. At the Wilson's Hill claim 500 tons of stone are now being crushed, which promise an average yield. The Bell Rock Company is sinking their shaft; present depth, 282 feet. At the Blinkbonnie Reef they are still engaged in sinking shaft; ground hard; depth attained 270 feet. They expect to strike the reef at 30 feet below present level. The Victoria Association and Hopeful Company are engaged in driving on the course of the lodes. Work is temporarily suspended at the New Bendigo's Company's mine, Bristol Reef. A small rush at Wattle Flat still continues, but the yields are generally very poor. At the Silver Mines 185 tons of quartz have yielded 5200 oz. of mixed metal, the estimated value of which is £565.¹⁸⁶
- Dec 1873:** Korong Division.
I have to report mining matters in general very dull. During the quarter the March Reef United have commenced draining their mine, and have lowered the water in six weeks to the 370-foot level. On the other lines of reef little or nothing has been done during the quarter. The Daly and new Guinea Companies have agreed to amalgamate and form a new company to work the Daly Lead with adequate machinery. At Wedderburn the Specimen Hill Company are sinking their engine-shaft deeper. Fone's Company, at Burke's Flat, are sinking their shaft deeper, and have plenty of quartz in reserve; they are getting good returns. Brown's Company, at Wehla, is getting good returns, and are sinking a new engine-shaft for machinery. In alluvial mining there is very little doing throughout the district.¹⁸⁷
- Dec 1873:** Redbank and St. Arnaud South Subdivisions.
At the New Isis claim the tributers have thrown up work. Northwards of their workings there is, I understand, a new make of stone showing gold freely. The mine will stand idle pending the erection of additional machinery. I have been disappointed of the return from the Rubbly Reef. I believe the crushing mill erected by the prospectors is not answering their expectations, and similar stone to that treated therewith is giving much better results at the Pleasant Creek mills. The Ram, Goldfinch, and Remarkable Companies are engaged in sinking shafts and prospecting their ground north and south of the prospectors. Alluvial mining continues extremely dull.¹⁸⁸
- Dec 1873:** St. Arnaud North Subdivision
At the Rising Star Claim, which is now being worked by a Melbourne tribute Company, the depth of main shaft has been increased to 470 feet; good sinking. They are engaged in opening out north and south on the Rising Sun and Western Reefs. The Chrysolite Company is now engaged in sinking their shaft between the Ballarat and Chrysolite Reefs. Present depth, 480 feet; hard sinking. The Wilson's Hill claim is now being worked by a Melbourne tribute company. At the Blinkbonnie Reef the shaft is now down 296 feet ... Work has been stopped by influx of water. Arrangements are being made for working the mine by steam machinery. At the Bell Rock they are still sinking shaft; present depth, 337 feet. Hagle and Company, West Wilson's Hill, Have, I understand, struck a reef at a depth of 160 feet, showing gold, and supposed to be the Storm Reef. Hagle and Company, South Rising Star, have sunk a shaft 200 feet, but the water is too heavy for them to contend with without a whim or machinery. The Greenock Reef is now being worked on tribute. The Devon Reef, east of Greenock, has been taken upon lease. Sixty-five tons of quartz from Excelsior claim (No 1 South Silver Reef) has yielded 250 oz. of mixed metal, worth £296. Two tons of sand from the same reef yields 110 oz. of mixed metal.¹⁸⁹
- March 1874:** Korong Division (Mr. George Watton Moore)
In Alluvial mining there has but little doing...The Daly Lead Alluvial Gold Mining Co. has amalgamated with the New Guinea Co., and is re-organising with the view of purchasing steam machinery and sinking a new shaft. In quartz, there have been no crushings at Inglewood, and but a few throughout the district. The Fone's Gold Mining Co., Burke's Flat, have has some fair crushings from stone obtained at a depth of 375 feet, and they have cut the reef at 425 feet, and are employing 43 men. The March Reef United Gold Mining Co. Inglewood, having cleared the shaft of water, is now working at the 370 and 420 feet levels, employing 16 men. The results of this mine will determine the course to be pursued by many other lessees on this line, who are now anxiously waiting. Should good gold be struck, it will have a very beneficial effect on this class of mining in the neighbourhood, as more capital will be forthcoming, to erect pumping machinery, which is much needed on most of these mines.¹⁹⁰
- March 1874:** Redbank and St. Arnaud South Subdivision.

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At the New Isis they are working at the 176 foot level northwards. At the Eureka Reef, winding machinery is being erected. The Ram Company, Darling Flat, is now down 30 feet with their new shaft. At Scott's claim, Rubbly Reef, stone has been taken out in which gold is visible. The Remarkable Company, Sandy Creek, has sunk 95 feet. Alluvial mining is very dull.¹⁹¹

March 1874: St. Arnaud North Subdivision.

The strike at the Rising Sun claim, and the comparative suspension of work at the silver mines, have had a most depressing influence over mining. The Chrysolite Company has completed the sinking of their shaft, and is now putting in a cross-cut at the 500-foot level towards the Ballarat Reef. The Wilson's Hill mine they have opened out the 100 foot and 300 foot levels. At the Blinkbonnie Reef the shaft has been sunk and timbered to a depth of 296 feet, at which depth the reef has been struck. Winding machinery has been erected. At the Bell Rock they are down 370 feet. Some good stone obtained from the Queen Mary Reef. Depth, about 170 feet.¹⁹²

1874: Stetefeld's shaft furnace, specially designed for the chlorination of silver ores. Its dimensions are about 30 feet high, 4 to 5 feet square. The ore enters the furnace through a sieve at the top of the shaft, and falls through the ascending current of heated gases from the fire. One of these furnaces has been erected at St. Arnaud.¹⁹³

June 1874: Korong Division (George Walton Moore).

During the past quarter mining matters have been extremely dull in this division, and there is nothing of any importance to report.¹⁹⁴

June 1874: Redbank and St. Arnaud South Subdivisions.

The New Isis Company is extending their drives south, and taking out stone at a depth of 140 feet. The Darling Flat Company, Rubbly Reef, has stopped work, pending amalgamation with adjoining companies. The Ram Company has not been successful, and their claim is abandoned. The others companies on the Rubbly line of reef have suspended work for the present. A new reef - Finlayson's - has been discovered at Darling Flat. Some excellent specimens have been obtained from the surface. At the Eureka Reef stone is being raised from above the water-level during repairs to the machinery. In alluvial mining there is nothing to report.¹⁹⁵

June 1874: St. Arnaud North Subdivision.

At the Rising Star mining operations are progressing steadily. They are now raising stone from the 460-foot level on Paddy's Reef. At Wilson's Hill a new shaft on the west side of the hill is being sunk to a proposed depth of 400 to 450 feet; present depth, 200 feet. The St. Arnaud Creek battery is now engaged on 600 tons of stone from this mine. The Chrysolite Company is opening out north on the Ballarat Reef, which has been struck at 99 feet from shaft, at the 500-foot level. The Bell Rock Company has stopped sinking their shaft at 413 feet, and is now putting in a cross-cut. The Blinkbonnie Company is still cross-cutting for the reef; water heavy. The Greenock Company is raising stone from the 200-foot level. A company has been formed to work the Queen Mary Reef, and a lease of the ground applied for. A new reef - the Duchess of Edinburgh - has been discovered, not far from the Prince of Orange Reef, the stone from which is aid to look excellent. Messrs Scoles' No. 1 S. Silver Reef have obtained, from 11 tons of quartz, 84 oz. of mixed metal, worth about £75. At the Silver Mines the removal of machinery has been completed on to their new shaft (Sec H., Walker's) and mining operations have been commenced on the reef at the 300-foot level. An association has been formed at St. Arnaud for prospecting for reefs and alluviums.¹⁹⁶

Sept 1874: Korong Division

In quartz the most noticeable feature has been the establishment of a tribute company on that portion of the Unity's ground formerly leased by the Independent Company ... The tribute company have amalgamated with the original company, and a large number of men will soon be employed. Fone's Company, Burke's Flat, are progressing well; the reef appears to be increasing in width and richness at the depth of 470 feet, and shows large quantities of gold-bearing pyrites. In alluvial, though there have been several small rushes to gullies in the neighbourhood of Inglewood, there have been no important discoveries.¹⁹⁷

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- Sept 1874:** Redbank and St. Arnaud South Subdivisions
The New Isis Company is driving south at 140-foot level, Oxonian Reef, and stoping. They are also preparing to work the Star of the East Reef again. Poppet-heads have been erected, and the old shaft re-timbered to a depth of 50 feet.¹⁹⁸
- Sept 1874:** St.Arnaud North Subdivision
A new crushing battery of 10 revolving stamps is being erected on the Wilson's Hill mine. The Chrysolite Company is now engaged in stoping out from the 500-foot level on the Ballarat Reef. At the Bell Rock, a cross-cut has been put in from the shaft to the reef, at the 400-foot level ... No stone has yet been crushed, owing to the only available battery being engaged. A new battery of 20 revolving stamps is about to be erected by the St. Arnaud Public Crushing Company, who are adding to their machinery also Denny's patent pulverisers, the erection of which is nearly completed. At the Duchess of Edinburgh claim good stone is till being obtained. At the Greenock Reef a winze has been sunk from the 200-foot level to the 260-foot. At the Silver Mines they have been engaged during the quarter in driving cross-cuts and levels at a depth of 300 feet from their new shaft, Stewart's Hill. The Disraeli Company's ground is being again prospected from the old shaft.¹⁹⁹
- 1 Dec 1874:** Rush about a half-mile south of Christmas Flat ... This was known as the **Hard Hill Rush** and declined in June 1875.²⁰⁰
- Dec 1874:** Korong Division
Alluvial. The Kentish Lead, Inglewood, has declined; only a few miners remain on it, and they are making bare wages. At the Hard Hills, near Berlin, a rush has taken place, and some good prospects have been obtained at 40 feet. The sinking is in made ground, on some small hills near the banks of the creek, and, being principally cement, is very hard. As much as 11 oz. have been got off the bottom of one shaft ... Some 300 miners are on the ground, the whole of which is now pegged out. There has also been a little excitement at Lingham's Flat, Berlin, in consequence of the owner of the prospecting claim having got a 96-oz. nugget, in shallow sinking, with decomposed granite bottom. At the Daly Lead, Inglewood, Mr. Watson has commenced operations on the ground purchased from the Daly Lead and New Guinea Companies, and is erecting a 30-hp engine. Quartz. The March Reef United ("Unity") Co. have struck gold at the 375 feet level, and have had one crushing, yielding 13 dwts to the load. The March Reef and Royal Standard Tributes have also crushed, but with unsatisfactory results. Specimen Hill, Korong, is looking well, and taking out stone, which will probably go an ounce to the ton. Fone's Company, Burke's Flat, have had several fair crushings. No cement has been crushed.²⁰¹
- Dec 1874:** Redbank and St Arnaud South Subdivisions.
At the New Isis operations during the past quarter have been confined to extending the 140-foot level, Oxonian Reef. At the Eureka Reef they are engaged above the water level; reef 4 inches thick. Work has been given up at the Darling Flats Reef, and the machinery advertised for sale.²⁰²
- Dec 1874:** St Arnaud North Subdivision
The new batteries at the Wilson's Hill are completed and have been crushing for about two months. The Bell Rock Quartz Mining Company has erected a 20-head battery at the mine, and expects to commence crushing very shortly. The Duchess of Edinburgh and Prince of Wales Companies are obtaining good stone. The Phoenix Company, Greenock Reef, is working the stopes from the 260-feet level. The Silver Mines Company were engaged during the quarter in driving levels and cross-cuts, at a depth of 300 feet from the new shaft. The Disraeli Company is engaged prospecting the mine. Mining, both quartz and alluvial, has been dull during the quarter.²⁰³

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- March 1875:** Inglewood and Wedderburn Divisions (George Watton Moore). Mining matters in the Inglewood and Wedderburn divisions have been extremely dull during the past quarter, and the yield of gold very small. In Quartz - The March Reef Company, Inglewood, have been compelled to suspend operations; and Fone's at Burke's Flat, is the only company which has had satisfactory crushings. In alluvial there has been but little doing, and the small rush at Hard Hills, Berlin, has not increased either in area or population. Mr. Watson has been sinking a shaft, and making preparations upon a large and expensive scale for working the Daly Lead at Inglewood, and it is hoped that before the end of next quarter his claim will commence to give a return for his large outlay.²⁰⁴
- March 1875:** St. Arnaud North Subdivision
A little improvement has taken place in mining matters during the quarter. The Wilson's Hill Tribute Company is driving north and south on the lode at the 450-foot level; 110 tons crushed separately from this level yielded 115 oz., and the lode seems to improve as it is driven on. The company is erecting pumping and winding machinery at their new shaft. The Sandhurst and St. Arnaud Chrysolite Tribute Company have struck what is considered a continuation of the Wilson's Hill lode in the 500-foot level. Stone crushed separately from this lode has averaged 1 oz. to the ton. The company are erecting a 25 hp pumping and winding engine, hitherto pumping and winding have all been done by one engine. The Bell Rock Company have completed the erection of their 20-head battery, and crushed 186 tons of stone for an average of 4-1/2 dwts, which was not as good as expected ... An assay of the tailings have given a yield of 3-1/2 oz. per ton, and these are heavily charged with pyrites and galena, the company have determined to erect buddles before resuming crushing. The yields from the Prince of Wales and Duchess of Edinburgh Companies, Duchess of Edinburgh Reef, are improving as the stone is worked deeper. In alluvial mining there is nothing noteworthy to report.²⁰⁵
- June 1875:** Inglewood and Wedderburn Divisions (George Watton Moore). There has been little doing in quartz mining during the past quarter. No crushings have taken place at Inglewood, and but one small one at Wehla. Alluvial mining has also been dull. The rush to Hard Hills has ceased, and most of the miners who were not previously residents of Berlin have left the district.²⁰⁶
- June 1875:** Redbank Subdivision (D. O'Leary)
Mining has been very dull in this subdivision during the quarter.²⁰⁷
- June 1875:** St. Arnaud South Subdivision (W.G. Couchman)
Mining in this subdivision ... has been in a very stagnant condition, and there is nothing worthy of note to record. At Stuartmill the Isis Company have two parties of tributers at work, but no yields of any consequence have been obtained.²⁰⁸
- June 1875:** St Arnaud North Subdivision (W.G Couchman)
With the exception of the immediate locality of St. Arnaud, mining has been very dull in this subdivision. The Wilson's Hill Company are driving north and south on the lode, and sinking the main shaft deeper; present depth, 485 feet. Sandhurst and St. Arnaud Chrysolite Company are raising good stone from the 500-foot level, and sinking the shaft deeper; present depth, 520 feet. Bell Rock Company has been opening up the mine, and has stopped operations pending the erection of buddles. Phoenix Company, Stuartmill, has been driving south on the lode at the 260-foot level, and breaking out stone from the level upwards. The Silver Mines Company have three parties at work on tribute, which are getting payable stone. Prince of Wales Company is opening
- June 1875:** (Inglewood & Wedderburn Divisions)
Quartz. There has been little doing in quartz mining during the past quarter. No crushings have taken place at Inglewood, and but one small one at Wehla. Alluvial mining has also been very dull. The rush to Hard Hills has ceased, and most of the miners who were not previously residents of Berlin have left the district.²⁰⁹
- June 1875:** (Redbank Subdivision)
Mining has been very dull in this subdivision during the quarter.²¹⁰

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- June 1875:** (St Arnaud North Subdivision)
 With the exception of the immediate locality of St Arnaud, mining has been very dull in this subdivision. The Wilson's Hill Company are driving north and south on the lode, and sinking the main shaft deeper; present depth, 485 feet. Sandhurst and St Arnaud Chrysolite Tribute Company are raising good stone from the 500-foot level, and sinking the shaft deeper; present depth, 520 feet. Bell Rock Company has been opening up the mine, and has stopped crushing operations pending the erection of buddles. Phoenix Company, Stuartmill, has been driving south on the lode at the 260-foot level, and breaking out stone from that level upwards. The Silver Mines Company have three parties at work on tribute, which are getting payable stone. Prince of Wales Company are opening out the mine, and getting good stone. West Wilson's Hill Company is sinking the shaft to a depth of 225 feet, and has stone now in the bottom of it. Blink Bonny Company is breaking out good stone, and has purchased a crushing plant. Duchess of Edinburgh Company is breaking out good stone, and has 40 tons at grass. A new reef, 3 feet thick, was discovered last week near the east boundary of the Blink Bonny Company's lease; the stone is estimated to crush 15 dwts per ton. Another reef, estimated at 6 dwts per ton, has also been discovered at the head of Strathalbyn Gully. A small rush has taken place to a spot near the 'Old Scrub rush', in alluvial workings; the prospects are from 5 to 6 dwts per load, but the workings are not likely to be extensive.²¹¹
- Sept. 1875:** (Inglewood Division)
 Quartz. This class of mining has been extremely dull during the past quarter, only one company having had crushings. The machinery of the Unity Company, March Reef, Inglewood, has been sold to one of the proprietors of leases upon the Deep Lead, and there appears to be no chance of this reef being worked for some time to come. Alluvial. Mr Watson is still driving at the Daly Lead, and does not expect to get returns for some months. Most of the dead work is now completed, and the shaft sunk to such a depth that the whole of his large area of leasehold can be worked from it. There have been several small rushes to the belt of made ground on the Hard Hills, between McIntyre's and Berlin, and some nuggets weighing from 6 oz to 30 oz have been discovered... The mining population in this division is steadily decreasing, and the majority of miners are not making wages.²¹²
- Sept. 1875:** (Wedderburn Division)
 There have been several small rushes during the quarter - the only one of any importance being in the neighbourhood of Yorkshire Flat, situate about 10 or 11 miles north from the township of Wedderburn. I believe a few miners are still doing pretty well there. Quartz mining is at a complete standstill, not a single mine at work.²¹³
- Sept 1875:** Moonlight Hill rushed (South-east of Guy's Rush), and later in the month '2nd Hill', further removed from Moonlight was discovered. Soon after this Possum Hill, that became the main centre of the rushes, was opened ... The discovery took place less than a mile north-east of McIntyre's, good gold was found, and the rush, known as **Orville Rush** attracted thousands, spreading from the old Hard Hills at McIntyre's (worked 1859-61) east through Possum Hill, Moonlight Hill to Billy the Mailman's Hill, and was pegged nearly to Irishtown. By May 1876 there was 'an immense spread of calico', many stores, and twenty-eight licensed hotels on the rush.²¹⁴
- Sept. 1875:** (Redbank subdivision)
 In this subdivision there was a small rush during the quarter on the western end of Emerald Flat, in shallow sinking, which lasted, however, but a few days.²¹⁵
- Sept. 1875:** (St Arnaud South Subdivision)
 Mining in this subdivision still continues in the same depressed state as reported for last quarter, and there is nothing worthy of note to record.²¹⁶

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- Sept. 1875:** (St Arnaud North Subdivision)
The mines at St Arnaud are in much the same condition as reported last quarter. The Wilson's Hill Company sunk the shaft to a depth of 530 feet, and is breaking out stone at the 450-foot level. Sandhurst and St Arnaud Chrysolite Company have sunk the shaft to a depth of 571 feet. The Victoria prospecting claim is raising good stone from the 235-foot level. In alluvial mining there is nothing of importance to note.²¹⁷
- December 1875:** (Inglewood Division) ...nothing of any importance to report. (Wedderburn Division). This is generally a very dull time for mining, owing principally to the numbers engaged in harvest work, and partly to the holidays. At the only one reef claim at work, viz., Potter's Hill, situate about 1-1/2 miles from the township in the Mallee Scrub, no crushing has been done, but the stone is looking payable. In consequence of the distance miners are scattered, and there is great difficulty in arriving at the exact quantity of gold obtained. (Redbank subdivision) ... nothing to report on. (St Arnaud South subdivision) ... nothing worthy of note...(St Arnaud North subdivision) ... there has been a perceptible improvement in mining operations in this subdivision during the quarter. The Wilson's Hill Tribute Company have completed the erection of their large pumping and winding plant, and have also erected very substantial poppet legs and brace, and a tramway for trucking quartz to the batteries. They have driven the cross-cut at the 530-foot level and cut the reef at 26 feet from the shaft. The Sandhurst and St Arnaud Chrysolite Tribute Company have sunk the shaft to a depth of 607 feet, and fixed new pump workings, and intend driving for the Western Reef at a depth of 600 feet. Machinery has been erected on the lease of the West Wilson's Hill Company for treating the pyrites from this mine. London and St Arnaud Company (silver mines) are intending to devote more attention to working the gold-bearing stone, and leave the silver ore alone for the present; and are making alterations to the batteries so as to be able to reduce and treat the auriferous stone. Blink Bonny Company have resumed operations and are breaking out payable stone at 294-foot level, the reef being 2-1/2 feet wide. Rising Star Company has suspended operations for the present, but the latter company expects to resume work shortly. In alluvial mining there is nothing of importance to record.²¹⁸
- March 1876:** (Inglewood Division) I have visited the New Rush, Hard Hills, about 2-1/2 miles distant from Berlin, and 14 miles from Inglewood. The rush, so far as I could judge, seemed to be in a very prosperous condition; substantial stores are being erected, postal communication has been established, and a police force has been stationed there. The number of miners on the rush is from 2,000 to 3,000. There is a great scarcity of water, the price charged being twopence per bucket. With regard to the mining operations in the immediate vicinity of Inglewood, there is hardly anything to remark. A claim known as 'Watson's' (alluvial) is in full working order, but as yet there have been no returns. I am informed that the 'Tributers' Claim to Fownes' Company', Burke's Flat, is paying; this is a quartz claim, and is situated about 20 miles from Inglewood. (Wedderburn Division) Mining (especially quartz) is in a very depressed state, many of the miners having been engaged harvesting, threshing, &c., and a few having gone to the rush at McIntyre's. The puddling machines are not working for want of water. A new gully was opened last month by Samuel Ward, situated about eight miles in north-easterly direction from Wedderburn: the depth of sinking is about 6 feet, 18 inches of which is a very hard cement. The prospect obtained is about 1-1/2 oz for one week's work, the gold being smooth and nuggetty. I believe about thirty men are out there, but three or four only are getting payable gold besides the prospector. The nearest water is four miles distant, which will prevent the district being properly proved until rain comes. There are no quartz reefs working. (Redbank Subdivision) ...nothing of interest to note...(St Arnaud South subdivision) ...nothing of importance to report on...(St Arnaud North Subdivision). The Sandhurst and St Arnaud Chrysolite Tribute Company are working at the 600-foot level. The Wilson's Hill Tribute Company has been driving north and south at the 530-foot level. In alluvial mining there is nothing whatever to report...²¹⁹

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- June 1876:** (Wedderburn Division) There is nothing fresh to report...(Redbank subdivision). An extend quartz claim has been secured on the Richmond Reef, near Redbank. No stone yet crushed. (St Arnaud South Subdivision) The Sandhurst and St Arnaud Chrysolite Tribute Company have been driving the 600-foot level north, and stoping the backs. The Wilson's Hill Tribute Company has been stoping the backs from the 530 to the 430 foot levels. The St Arnaud Cross Reef Tribute Company (which is a company formed to work the mine of the Bell Rock Company on tribute) are extending the 400-foot level, and stoping the backs. They have erected a large buddle for treating pyrites, and a tramway for trucking quartz from the shaft to the batteries. Greenock Reef Company are sinking a shaft on the underlie of the reef, and have erected a new pump. London and St Arnaud Gold and Silver Mines Company have a number of tributers at work, and the company are also prospecting their ground in various places. Rising Star Company have several tributers at work. Several parties still continue working at the Duchess of Edinburgh and Prince of Wales Reefs; Allardyce and Co., at the latter reef, has obtained 114 oz 17 dwts 12 grs from 92 tons of stone. In alluvial mining there is nothing of importance to note. (St Arnaud North Subdivision). The New Isis Company have been sinking the underlie shaft to a depth of 276 feet, and are now draining the mine with a view to working in the lower levels. The Good Samaritan and Lancashire Reefs continue to be worked, but there are no yields of importance to be recorded. Alluvial mining still continues in a very stagnant condition.²²⁰
- Sept. 1876:** (Inglewood Division)
During the past quarter mining in this division has not been attended with very encouraging results. The Berlin goldfield is, so far as mining is concerned, almost abandoned. The rush at Orville, commonly known as 'Possum Hill';, is fast declining, there being at present not more than twenty claims yielding ordinary wages; results and the population are fast decreasing. At Inglewood, Watson's Company, on the Daly Lead, are doing good work, but the results are said not to be as favourable as the proprietors anticipated. In quartz, a discovery has been made by Eak and Whitehead, on the Irwin Reef, at Inglewood; the yield of a trial crushing was about half an ounce to the ton. In alluvial mining little or nothing is doing, and the ground is being worked by 'hatters' and 'fossickers'.²²¹
- Sept. 1876:** (Wedderburn Division) Quartz mining is completely at a standstill, with the exception of a few miners prospecting in the Mallee Scrub. In alluvial mining there have been two or three small rushes, at one of which about eight or ten claims were payable. Several nuggets have been found during the quarter from 2 to 11 oz. (Redbank subdivision) ...nothing in mining matters to report...(St Arnaud South Subdivision) No improvement in mining operations, either quartz or alluvial, can be noted during the quarter. The New Isis Company have worked out the payable stone at the shallow levels, and have stopped operations for the present, with a view to form a new company and to sink a new main shaft, so as to cut the stone at a much greater depth than has hitherto been attained.²²²
- Sept. 1876:** (St Arnaud North Subdivision). There is no improvement to note in mining operations during the quarter. The Sandhurst and St Arnaud Chrysolite Tribute Company have driven the 600-foot level north 120 feet and south 60 feet. The Cross Reef Company (Bell Rock) has been driving the 400-foot level, and is now stoping the backs from that level. The London and St Arnaud Company have a number of tributers at work. The Rising Star Company are in treaty to let their mine on tribute, and expect very shortly to have it in full work. The Wilson's Hill Tribute Company is still doing very little, pending a modification of the tribute terms. The Greenock Reef Company have been sinking the shaft deeper with the underlie of the reef. the shaft is now 305 feet in depth, and the stone looks very promising for continued good yields. In alluvial mining there is nothing whatever to report.²²³
- December 1876:** (Inglewood Division) ...mining has been generally depressed. Very little improvement having taken place. (Wedderburn Division) ...nothing new to report. Quartz mining is at a standstill, and no fresh alluvial ground opened during the past quarter...(Redbank Subdivision). At Emerald Flat, in 20 feet sinking, a small party of miners have been getting satisfactory yields; and in shallow ground, near the dividing range between Redbank and Moonambel, some payable returns have also been obtained. (St Arnaud South Subdivision) Both alluvial and quartz mining operations have been in a very depressed condition indeed during the quarter, and there seems little indication of a revival. The whole of the plant of the New Isis Co has been sold; the crushing engine and batteries were purchased by the Sandhurst and St Arnaud Tribute Company, and are now in course of erection at their mine, St Arnaud.²²⁴

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 221 Mining Surveyors' Reports, September 1876
 222 Mining Surveyors' Reports, September 1876
 223 Mining Surveyors' Reports, September 1876
 224 Mining Surveyors' Reports, December 1876

December 1876: (St Arnaud North Subdivision)

No change for the better has taken place in mining operations during the quarter. Wilson's Hill. The Sandhurst and St Arnaud Chrysolite Tribute Company have driven the 600-foot level north to the boundary of their lease... Sinking the main shaft has been carried on, the present depth being 657 feet... A new company, the Lord Raglan and St Arnaud Company, as been formed to work the lease formerly mined by the Wilson's Hill Tribute Company. Silver Mines - The London and St Arnaud Company have suspended operations, except by tribute parties, pending the receipt of instructions from England. Bell Rock Reef - The St Arnaud Cross Reef Company have stopped operations for the present. The Sandhurst and St Arnaud Company have purchased the crushing plant of the New Isis Company, Stuartmill, and are erecting the same on their ground.²²⁵

March 1877:

(Inglewood Division) The prospects of the Fones Quartz Mining Company and Watson's Claim have both improved since my last report. No other change has taken place. (Wedderburn Division) Mining, especially quartz, still continues very stagnant. A small alluvial rush took place last week about half a mile from Wedderburn, the prospector obtaining 2 oz 14 dwts for one week's work. The gold was of a coarse and ragged nature. There are no appearances of the rush assuming large proportions. (Redbank subdivision) In the low ranges, between Redbank and Moonambel, a rush set in about a fortnight ago in shallow ground, and some good prospects were obtained. In a few days it turned out to be only a patch, and the place is now nearly deserted. (St Arnaud South Subdivision) The Greenock Reef Gold Mining Company, Greenock Reef, during the last quarter have crushed 261 tons of quartz... for a yield of 222 oz 10 dwts of gold... There is nothing of any importance to report from the other reefs. Alluvial mining is very dull. (St Arnaud North Subdivision) Mining matters in this subdivision have been very dull during the past quarter. Wilson's Hill - The Sandhurst and St Arnaud Chrysolite Tribute Company have been engaged braking out stone from the 600-foot level. This company has purchased the machinery of the New Isis Company, Stuart Mill, which they are going to add to that which they have already erected. The Lord Raglan Company are raising and crushing stone from the 450 and 500-foot levels.²²⁶

June 1877:

(Inglewood Division) ... no change worthy of mention has taken place, except that the yield of gold has slightly increased. (Wedderburn Division) ... no improvement in mining ... No reefs working in this division. Alluvial - At the Woolshed a few nuggets have been obtained by two or three parties, otherwise alluvial mining continues in a very depressed state. (Redbank Subdivision) ... nothing of special importance in mining...(St Arnaud South Subdivision) Mining operations still continue in a very stagnant state in this subdivision. The Greenock Company has been breaking out stone from the stopes at the 360-foot level. A small rush took place to some alluvial ground near Stuart Mill during the quarter.²²⁷

June 1877:

(St Arnaud North Subdivision) There is not much alteration to note in mining operations in this subdivision. The Sandhurst and St Arnaud Chrysolite Tribute Company have been driving a cross-cut at a depth of 680 feet... During the quarter a new boiler and new winding gear and cages, &c., have been erected and fitted up. The Lord Raglan and St Arnaud Company have been driving the 600-foot level, and stoping the backs. The New Bendigo Company, Bristol Reef, has resumed operations, the mine being let on tribute. The London and St Arnaud Company have been doing very little work during the quarter. The Prince of Wales Company, Prince of Wales Reef, has crushed 38 tons of stone from the 220-foot level. The Bell Rock Company has been cutting trenches on the surface with the view of prospecting their lease for new reefs. A new reef has been discovered by Perkins and Company, near the Queen Mary Reef, and is reported to have yielded from 4 to 10 dwts per ton.²²⁸

Sept. 1877:

Inglewood Division (W.H.Coffey) - no change worthy of note. Wedderburn Division (John Reach) - Mining operations continue in a very stagnant state. There are no quartz reefs working. The number of alluvial miners decreased, partly owing to shearing season having commenced. Redbank Subdivision (D. O'Leary) - The usual dullness in mining still prevails in this subdivision. St Arnaud South Subdivision - Mining operations continue in a very depressed state ... The Greenock Reef Company still continue to have payable yields, but beyond this there is nothing of note to report. St Arnaud North Subdivision - Mining operations have not improved in this subdivision ... The Sandhurst and St. Arnaud Company is carrying on operations in the lower levels with good returns. The Lord Raglan and St. Arnaud Company are extending the 400-foot level north, and intend to sink the shaft deeper shortly.²²⁹

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 226 Mining Surveyors' Reports, March 1877
 227 Mining Surveyors' Reports, June 1877
 228 Mining Surveyors' Reports, June 1877
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- Dec 1877:** Inglewood Division - There is a slight decrease in the yield of gold ... partly owing to the stoppage of the Daly Lead tributers, in consequence of legal proceedings ... With the exception of an improvement in the yield from Fone's Quartz Mining Company, mining matters are otherwise unchanged. Wedderburn Division - There has been no improvement in mining in this division ... Water is getting to be very scarce. There is none stored for sale in this division. Redbank Subdivision - The scarcity of water, caused by the continual dry weather, has added to the usual dullness in this division. St Arnaud South Subdivision - Mining operations during the past quarter have been very dull, and there is nothing of note to record. In consequence of the shortage of water for washing purposes, all kinds of mining industries have more or less suffered. St Arnaud North Subdivision - Mining matters in this division during the past quarter have been very quiet; therefore there is nothing of any importance to record. The Sandhurst and St. Arnaud Chrysolite Tribute Company have been driving from a level from the shaft at 680 feet...The Lord Raglan Company, Wilson's Hill, crushed 900 tons of quartz taken from the 450 feet level, which yielded 244 oz. In alluvial mining no new ground has been opened, the miners principally engaged in old shallow workings.²³⁰
- March 1878:** Inglewood Division. The yield of gold for the last quarter has decreased, which is accountable for in some degree by the cessation of work by the Daly Lead Tribute Company since the early part of February. A fresh company has been formed, for the purpose of trying the ground above the late claim. Mining operations still continue in the same depressed condition.²³¹
- March 1878:** Wedderburn Division. Mining matters, both quartz and alluvial, continue in a very depressed state. There is a considerable falling off in the numbers of miners in this division as, owing to the great scarcity of water for so long a time, many have been forced to seek other means of obtaining a livelihood.²³²
- Redbank Subdivision
Mining operations continue very dull in this subdivision. There is nothing of moment to record.²³³
- March 1878:** St. Arnaud South Subdivision.
There is nothing whatever of importance to note in mining operations in this subdivision during the past quarter.²³⁴
- March 1878:** St Arnaud North Subdivision.
There is very little improvement to note in mining operations in this subdivision during the quarter. Work has been resumed on the Bristol Reef by a company (the Working Miners' Company) formed to work the reef, and a crushing therefrom has given a yield of 1/2 oz. per ton.²³⁵
- June 1878:** Inglewood Division. Since my last report two new companies have started, viz. the Golden Gate Tribute Company (alluvial), on the land held by Watson, and the Little Gem Quartz Tribute Company, on the Jersey Reef. Both are progressing satisfactorily. The old Daly Lead Tribute Company has ceased work. A patch was struck at Jordan last week, creating a small rush, the gold being found close to the surface. Wedderburn Division - Both quartz and alluvial continue in a very depressed state. I find it almost impossible to get a correct estimate of the number of men actually engaged in mining, as many of them when hard up find employment either with the farmers or road contractors for a time, returning again to mining after they have made a few pounds; and again, the greater part of the auriferous workings are in the mallee scrub, which nearly surrounds this place for miles, so that it is quite possible for small parties to be working without my knowledge. Redbank Subdivision - The customary dullness still prevails in this subdivision. Nothing worthy of record has occurred in mining during the quarter, except that the Old Slaughteryard Reef, at Moonambel, has been taken up and is about to be worked again. St Arnaud South Subdivision - Both branches of this industry being in a very dull state. St. Arnaud North Subdivision - Both quartz and alluvial mining continue in a very depressed condition in this subdivision. The Lord Raglan and St. Arnaud Company have been stopping the backs at the 400-foot level. The Sandhurst and St. Arnaud Chrysolite Tribute Company have only been working on spurs. The Working Miners' Company, Bristol Reef, have been timbering and clearing out the main shaft, and are now ready to drive levels on the lode from it.²³⁶

230 Mining Surveyors' Reports, Dec 1877
 231 Mining Surveyors' Reports, March 1878
 232 Mining Surveyors' Reports, March 1878
 233 Mining Surveyors' Reports, March 1878
 234 Mining Surveyors' Reports, March 1878
 235 Mining Surveyors' Reports, March 1878
 236 Mining Surveyors' Reports, June 1878

- Sept 1878:** Inglewood Division. A small rush has set in near the old Berlin Diggings, but there appears to be only room for a limited number of miners. Within the last week both the Golden Gate Company (alluvial) and the Little Gem (quartz) have obtained satisfactory trials, and there is a probability of a fresh company being started to work the ground to the north-east of the Golden Gate Company and on the same lead. Wedderburn Division - A small rush has taken place in the neighbourhood of Yorkshire Flat, about ten miles north from Wedderburn, the prospectors having obtained 7 dwts. from the bottom of his shaft. The sinking is very shallow, from 5 to 7 feet, the gold coarse and nuggetty. There are ten claims paying, none of them very rich, and from what I can learn I do not think the rush will be of any great importance. No quartz mines working. Redbank Subdivision - Nothing to note in either alluvial or quartz mining. St Arnaud South Subdivision - There is nothing whatever to report in this subdivision. St Arnaud North Subdivision - There is nothing whatever to report in this subdivision.²³⁷
- Dec 1878:** Inglewood Division - At McIntyre's, the Dalmatia Gold Mining Company are erecting machinery, and the Maximilian Gold Mining Company are still sinking their shaft. On the Jersey Reef the prospects of the little Gem Company are good. Active steps are being taken to form a company to work on the Maxwell Reef. Wedderburn Division. There is nothing fresh to report as to mining operations in this division since my last report; water is getting very scarce, especially for mining purposes, and a great number of miners are employed in harvesting. Redbank Subdivision - Nothing worthy of note...St. Arnaud South Subdivision - Mining still continues in a very depressed...St. Arnaud North Subdivision - There is nothing noteworthy to record in quartz or alluvial mining.²³⁸
- 1879:** Opening of lead known as Wait & Hope, but was then called **Lamont's Rush**. There was also a rush at this time to Potter's Gully, near John Goss' land.²³⁹
- March 1879:** Inglewood Division. Inglewood - The Havilah Company, on the Maxwell Reef, have commenced work during the past quarter...The Little Gem Company, on the Jersey Reef, being satisfied with their prospects, are erecting substantial machinery. McIntyre's - The Dalmatia Company have erected their machinery and raised some quartz, but are unable to crush from want of water. On the adjoining claim the Maximilian Company are still sinking. Alluvial mining - There is nothing worthy of report during the past quarter. Wedderburn Division - Nothing whatever doing in quartz mining. In alluvial mining there have been two or three payable prospects obtained during the quarter, in new ground, but the want of water renders it impossible to test the ground properly; in fact, in numbers of instances water has to be carted for miles even for domestic purposes. Redbank, St. Arnaud South Subdivision, and St. Arnaud North Subdivision. All three have nothing worth notice.²⁴⁰
- June 1879:** Inglewood Division - the Jersey Reef Q.M. Company have completed the erection of their machinery, which is working well. Several applications for leases have been made, and there is every indication of the revival of mining on the reefs around Inglewood. Wedderburn Division. There has been a little improvement in alluvial mining in the last quarter ... Nothing whatever is doing in quartz mining. Redbank Subdivision - Mining, as usual, continues dull in this subdivision. St. Arnaud South Subdivision - The Greenock Q.G.M. Company have fallen off in its yield of gold for this quarter; a crushing of 50 tons of stone gave an average yield of 10 dwts...St. Arnaud North Subdivision - The Working Miners Company crushed 630 tons of quartz, which gave an average of 7 dwts ... There is no other company of importance working in this subdivision. Alluvial - Nothing worth mentioning.²⁴¹
- Sept 1879:** Inglewood Division - Jersey Reef Company have obtained some very fine specimens, their last crushing yielding over an ounce to the ton from quartz obtained from No. 2 shaft. Wedderburn Division. There is a great improvement in alluvial mining in this division, the quantity of gold obtained being nearly double for that of last quarter. Several nuggets have been unearthed in the neighbourhood of the Woolshed, the largest being 19 oz. 7 dwts. A prospecting claim was registered by Jas. Ogilvie, on the 30th, in the Woolshed neighbourhood, about eleven miles north-west from Wedderburn; the sinking is about 10 feet; the prospects, 2 dwts. to the tub. The rush to the Nine-mile has not turned out so well; numbers have left; the remainder are generally satisfied, some of them making good wages. St. Arnaud South Subdivision - Mining operations ... have been inactive. St. Arnaud North Subdivision - mining has been in a depressed state ... The Working Miners mine is the only one from which payable quartz has been obtained.²⁴²

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- 237 Mining Surveyors' Reports, Sept 1878
 238 Mining Surveyors' Reports, Dec 1878
 239 James Flett, 1979, The History Of Gold Discovery in Victoria, pp292-296
 240 Mining Surveyors' Reports, March 1879
 241 Mining Surveyors' Reports, June 1879
 242 Mining Surveyors' Reports, Sept 1879

Dec 1879: Inglewood Division - A great amount of interest attaches to the working of the Jersey Reef Company's claim, as on its success depends very much the introduction of capital to work the numerous reefs surrounding Inglewood. The shaft is now down 292 feet. Amongst alluvial miners the want of water is beginning to be felt, which, together with harvesting operations, has conducted to draw away many for a time. Wedderburn Division. There is very little water for mining purposes, and many of the miners are gone to harvest work. Several parties have taken up claims at the Nine-mile rush, Kilburnie. The prospectors are to have a trial crushing next week. I hear that the stone looks pretty well. Redbank Subdivision - At a rush near Moonambel some 200 men are still employed, and the prospects obtained are encouraging, some of the claims yielding as much as half an ounce to the load ... the lead being traced trends towards Crown lands. St. Arnaud South Subdivision - Mining operations are quiet. St. Arnaud North Subdivision - Quartz mining dull ... Alluvial mining, nothing worthy of notice has occurred.²⁴³

²⁴³ Mining Surveyors' Reports, Dec 1879