28 January 2021

Dr John Powell
1 William Street
Waratah TAS 7321

Dear Dr Powell,

**Right to Information Request 8 January 2021**

I refer to your request pursuant to the *Right to Information Act 2009* ("RTI Act") made to DPIPWE on 8 January 2021 and transferred on 19 January 2021 to Hydro Tasmania.

I am authorised to make decisions on behalf of Hydro Tasmania in respect of applications for information under the RTI Act.

**1. Your Request**

Your request sought the following information:

> *Full content of the submission by Nic Haygarth to Entura in 2019 relating to the Heritage and Cultural values of the Waratah Reservoir as used by TasWater in its decision to decommission such facility.*

It will be collectively referred to in the body of this letter as "the Request".

**2. Determination and Reasons for Determination of Request**

2.1. I have undertaken a search of the information held by Hydro Tasmania to locate any records that may be relevant to the Request. The submission of Dr Haygarth to which I believe you refer was provided to a subcontractor of Entura in the process of compiling an Environmental Impact Assessment regarding the Waratah Dam in 2018. The submission is enclosed in full.

2.2. I note for your further information that the full Environmental Impact Assessment, which incorporates Dr Haygarth's findings, is publically available at https://dpipwe.tas.gov.au/Documents/Waratah%20Dam%20Environmental%20Impact%20Assessment.PDF

## 3. Review of Rights

You are entitled under Section 43 of the RTI Act to apply for a review of the decision made under Part 2 of the determination.

Any request for such a review should be made in writing within twenty (20) working days of receiving this letter and addressed to:

Mr E Albertini
Chief Executive Officer
Hydro Tasmania
4 Elizabeth Street
HOBART TAS 7000

Should you have any further questions on the information provided please contact the undersigned.

This request is now considered closed.

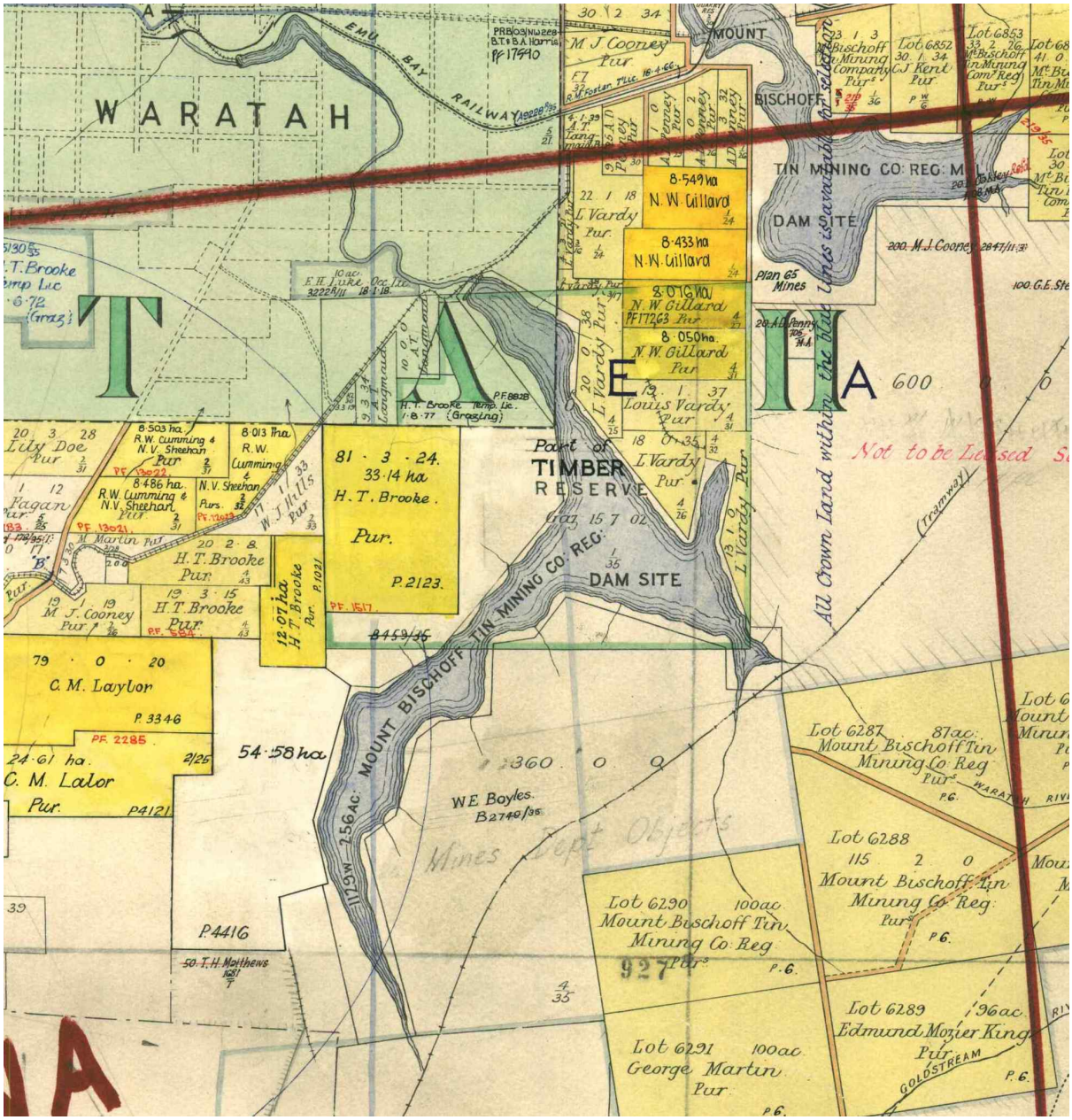
Yours sincerely,

Laura Harle
Graduate Legal Counsel
**t** 6240 2813
**e** laura.harle@hydro.com.au

## Introduction

The Waratah Dam is on the Waratah River about one km from the centre of the historic mining town of Waratah in far north-western Tasmania. Access is via a vehicular track which formerly served Magnet Siding and the Waratah Airstrip as well as the dam. The view south-east from the dam wall is of a shallow body of water. Rising from this, the grey trunks of dead myrtles stand silhouetted on the western face of Mount Pearse several kms away. Construction of the dam created a reservoir which when full held 200 million gallons of water. Today, with the water level lowered by TasWater, it holds far less, exposing many waterlogged dead trunks that previously would have been submerged. The reservoir is fringed mostly by regrowth vegetation, including young myrtles, although some old-growth myrtle forest remains at the Knole Plain end. The dam wall itself is an earthfill embankment which bears the evidence of having been breached on two occasions. The middle section, which once held a concrete spillway with a wooden weir on top, bows outwards on the downstream side where earthfill was added to fill the breach in 1975. There is also evidence of a patched-up second breach in the dam wall towards the southern end, although the date of this event is unknown. Old pieces of concrete strewn along the downstream side of the embankment are possibly remnants of the original spillway. A foot bridge provides access to the dam wall over the small channel of the Waratah River, which passes around the northern-most edge of the embankment.

The dam is in the vicinity of two former transport corridors. The earliest access to the Mount Bischoff tin mine and the town of Waratah was a cart track via Knole Plain, which is an open grassland at the southern end of the latter-day Waratah Reservoir. This track, used by horsemen, pedestrians, horse teams and bullock teams in the days before the Van Diemen's Land Company's Emu Bay Tramway opened in 1877, can still be found entering the myrtle forest at Knole Plain. The track took a course parallel to and west of the Waratah River, being partly inundated after the Waratah Dam was constructed. The formation of the 1902–42 Magnet Tramway can be seen slightly downstream from the dam wall where it crossed the Waratah River on a wooden bridge. The Magnet Tramway had its terminus nearby where it met the Emu Bay Railway, thereby putting dam construction and maintenance parties within easy reach of Waratah and Burnie and any parts in between.




Crop from Russell 1A map (AF820-1-114, LINC Tasmania) showing the Waratah Dam and Reservoir, the Magnet Tramway crossing the Waratah River just above the dam, plus the town of Waratah. The Mount Bischoff Co land on the right-hand side of the map was grazing land for bullock and horse teams used to cart supplies to and ore from the Mount Bischoff tin mine in the 1870s.

## Historical context

### Water power at the Mount Bischoff tin mine

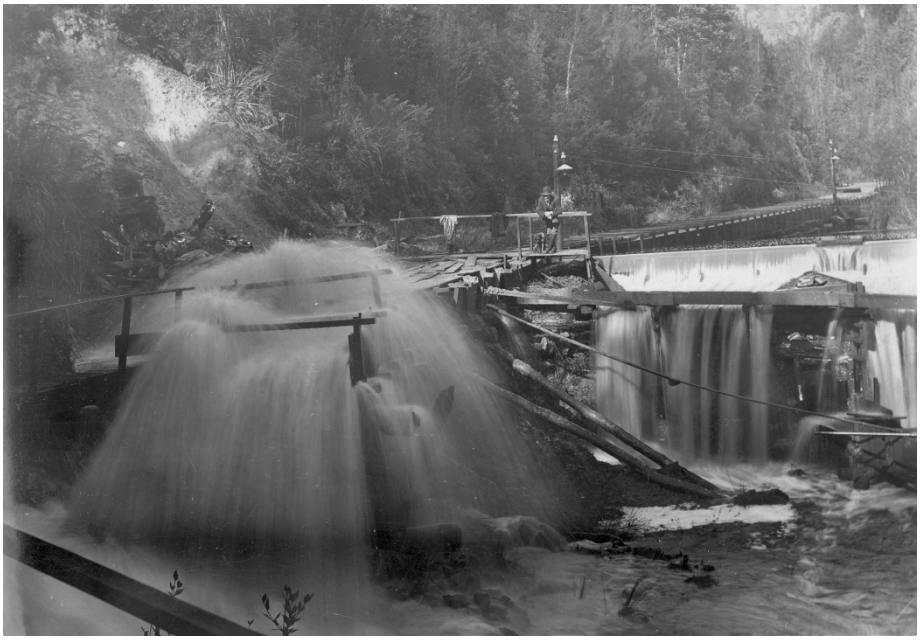
The Waratah Dam was built by the Mount Bischoff Tin Mining Company to supplement its water requirements for power generation. The potential of water power at Mount Bischoff was evident from the moment James 'Philosopher' Smith pushed through the scrub onto the precipice of the Waratah Falls after discovering tin beneath the mountain in 1871. This site on the Waratah River, a major tributary of the Arthur River, was selected to house the batteries and dressing sheds of the

Mount Bischoff Tin Mining Company.[1] According to historian Geoffrey Blainey, this company used water power more freely than possibly any other in Australia.[2] Initially, motive power for driving machinery was obtained by using a system of seven overshot waterwheels on the Waratah Falls.[3] At a time when the Mount Bischoff Co shared the waterfall facilities with Cummings, Henry and Co (later the Don Company) and Walker and Beecroft (later the Stanhope Company), in 1875 the three companies together established what was initially a log dam on the Waratah River above the Waratah Falls to keep up the supply of water.[4] In a later form this became a holding dam for the Mount Bischoff Co's water supply and was known as the Town Dam.[5]

By 1880 plans were well developed for an escalation of mining and production. In anticipation of the establishment of the 40-head 'Queen of the Mount' battery and his patented ore dressing appliances at the Waratah Falls, mine manager Ferd Kayser took steps to ensure a larger water supply. He chose a site on Falls Creek, a tributary of the Waratah River to the east of the township of Waratah. The Stone Dam on Falls Creek and connecting water race were finished at the end of 1881. 'With this result', Kayser later wrote, 'reservoir-building became the order of the day, and now it is finished we have six reservoirs, covering about seven miles of water, along the line of the creek when they are full'.[6] The Falls Creek dam system was supplemented by the Fossey Flume (1885–86) which brought water more than six kilometres from the foot of Mount Pearse into the Fill 'em Dam (part of what is today called the Bischoff Reservoir). From 1884 water from the upper dams on Falls Creek travelled via the 1.2-km-long water culvert or water tunnel and a water race into the Town Dam on the Waratah River behind the mine manager's house. This water was released over the Waratah Falls as needed to drive the stampers and ore dressing machinery.

[1] Nic Haygarth, *Baron Bischoff: Philosopher Smith and the birth of Tasmanian mining, the author*, Perth, 2004, pp.14 and 98.
[2] Geoffrey Blainey, *The rush that never ended: a history of Australian mining*, Melbourne University Press, 1963, p.209.
[3] Heinrich Wilhelm Ferdinand Kayser and Richard Provis, 'Mount Bischoff tin mine, Tasmania', in *Minutes of proceedings of the Institution of Civil Engineers* (ed. James Forrest), London, 1896, vol.CXXXIII, 1895–96, Part I, p.384.
[4] 'Visit of His Excellency the Governor to the northwest coast', *Cornwall Chronicle*, 8 March 1875, p.3.
[5] Keith Preston, 'Mount Bischoff tin mines: pioneers of water power in the Tasmanian mining industry', *Journal of Australasian Mining History*, vol.8, September 2010, p.150.
[6] HW Ferd Kayser, 'Mount Bischoff', *Proceedings of the Australasian Association for the Advancement of Science* (ed. A Merton), Sydney, 1892, vol.IV, p.349.

The Fossey Flume bringing water 6km from the Fossey River
under Mount Pearse into the Fill 'em Dam (Bischoff Reservoir).
Photo courtesy of Liz Harris, Longford.



The Ringtail Flume discharging flood water into the Waratah River, 1906.
JH Robinson photo courtesy of the late Nancy Gillard.

Much has been written about the Mount Bischoff Company being a pioneer of hydro-electricity. In 1882 the Mount Bischoff Co began discussions with the Australian Electricity Company in Melbourne, which was already lighting the Ellenborough Mining Company mine at Sandhurst (Bendigo), about establishing a hydro-electric lighting system for its mining plant.[7] A 50-lamp dynamo was installed on the Waratah Falls in June 1883, this being supplemented by a 100-lamp

[7] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 14 September 1882, NS911/1/3 (TAHO); editorial, *Brisbane Courier*, 5 August 1882, p.7.

apparatus to light the lower dressing sheds in 1886.[8] Clearly, this was not, as has often been claimed, the first Australian industrial plant lit by electric light, but it appears to have been the first Tasmanian plant to be lit permanently by electricity. The electric light was extended to the Mine Manager's house (1885), to St James' Anglican Church (for Sunday services only) in 1888, and later to other Waratah public buildings.[9]

**Extension of electrification and modernisation**

By the early twentieth century Mount Bischoff's once state-of-the-art waterwheels and stampers seemed outdated. By now the rock being treated was harder and poorer.[10] In 1904 Kayser recommended installing a hydro-electric plant lower down the Waratah River in order to power the mine. Kayser's then assistant John (JD) Millen supervised electrification in 1906–07. The water from the Falls Creek dam system which formerly drove the waterwheels at the Waratah Falls was now redirected around the falls and carried by almost 2 km of water race and flume to a holding tank (known as the Black Tank) on the eastern slope of Mount Bischoff high above the company's new power station in the Ringtail Gully. Water rushed steeply down a pipeline, crossing the river, to drive the turbines. The new power station required 4 million gallons of water daily, but no extra water storage was provided for it.[11] All the water driving the turbines when the Power Station opened came from the existing 1880s Falls Creek dam system.

[8] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 1 February 1886, NS911/1/5 (TAHO).
[9] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 17 September 1885, NS911/1/5; and 31 December 1888, NS911/1/6 (TAHO).
[10] DI Groves et al, *A century of tin mining at Mount Bischoff, 1871–1971,* Geological Survey Bulletin, no.54, Department of Mines Hobart, 1972, p.46.
[11] 'The world's greatest tin mine', *North Western Advocate and the Emu Bay Times*, 22 September 1911, p.4.

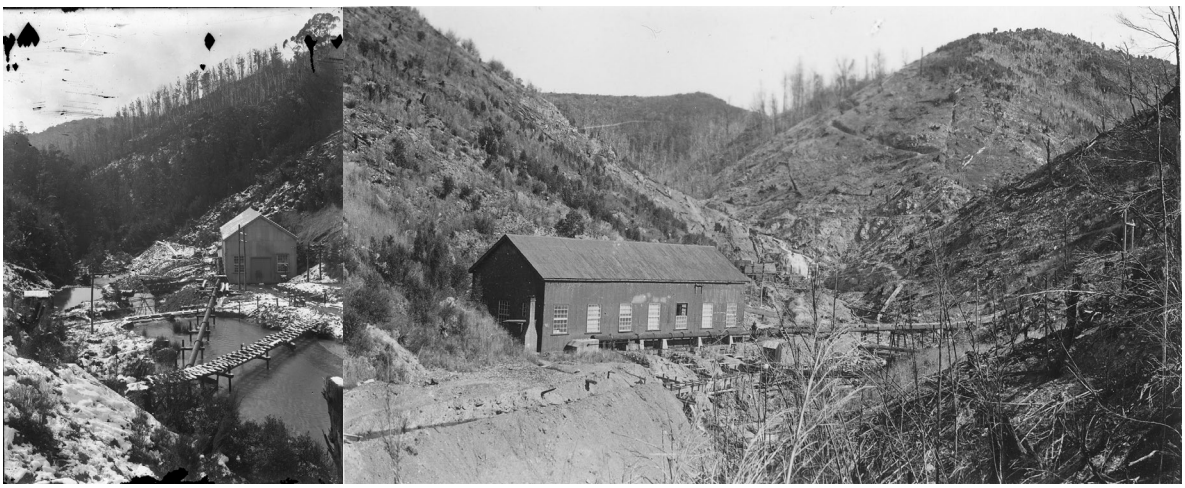
This c1919 photo shows (at right) the water race from the upper dam on the Waratah River bringing water beneath Smith Street into a flume. This was the means by which water stored in the Waratah Dam supplemented that from the upper dams on Falls Creek. The flume entering the picture from the left brings water from the Stone Dam lower down Falls Creek into the main flume from the upper dam complex higher on Falls Creek. Between the two flumes is a bay for skips or bogies on the electric tramway.

JH Robinson photo courtesy of the late Nancy Gillard.

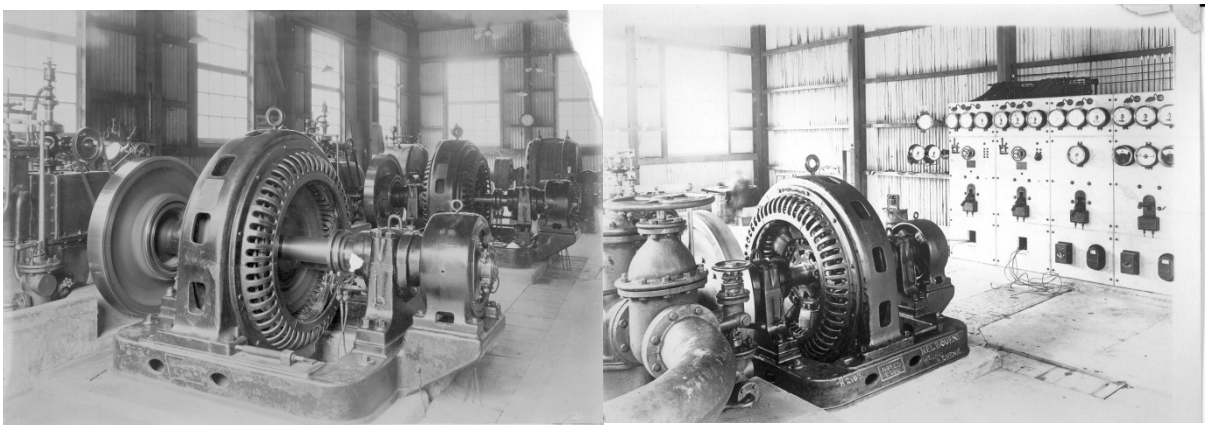
The flumes crossing the Waratah River (background, at far left) pass behind the old Queen of the Mount plant, becoming a single pipeline which carries the water past the 1911 Forty Head Mill, and then re-emerging as a flume (foreground) *en route* to Mount Bischoff. The Forty Head Mill was built to deal with the harder rock now being mined at Mount Bischoff.

JH Robinson photo courtesy of the late Nancy Gillard.

(Left) The laborious job of water race construction around the slopes of Mount Bischoff for the Power Station. Probably a JH Robinson photo, from the *Weekly Courier*, 6 June 1906, p.22. (Right) The Black Tank, showing the pipeline and haulage way down to the Power Station. Photo courtesy of the Waratah Museum.



The Mount Bischoff Co Power Station in the Ringtail Gully, Waratah River, showing the water pipeline from the Black Tank crossing the river and entering the building.
JH Robinson photos courtesy of TMAG and the late Nancy Gillard respectively.



Turbines at work inside the Power Station. These drove and lit the Mount Bischoff Co mills and its locomotive, although miners continued to use candles underground into the 1930s.
JH Robinson photos courtesy of Liz Harris and the late Nancy Gillard respectively.

Further plans for modernising and upgrading operations involved installing a new crushing plant adapted to the harder rock which now defeated Kayser's old 'Queen of the Mount' battery. All plant was now driven by electricity from the two Escher Wyss Pelton wheel turbines at the power station, each coupled to a 140 KVA AEG generator.[12]

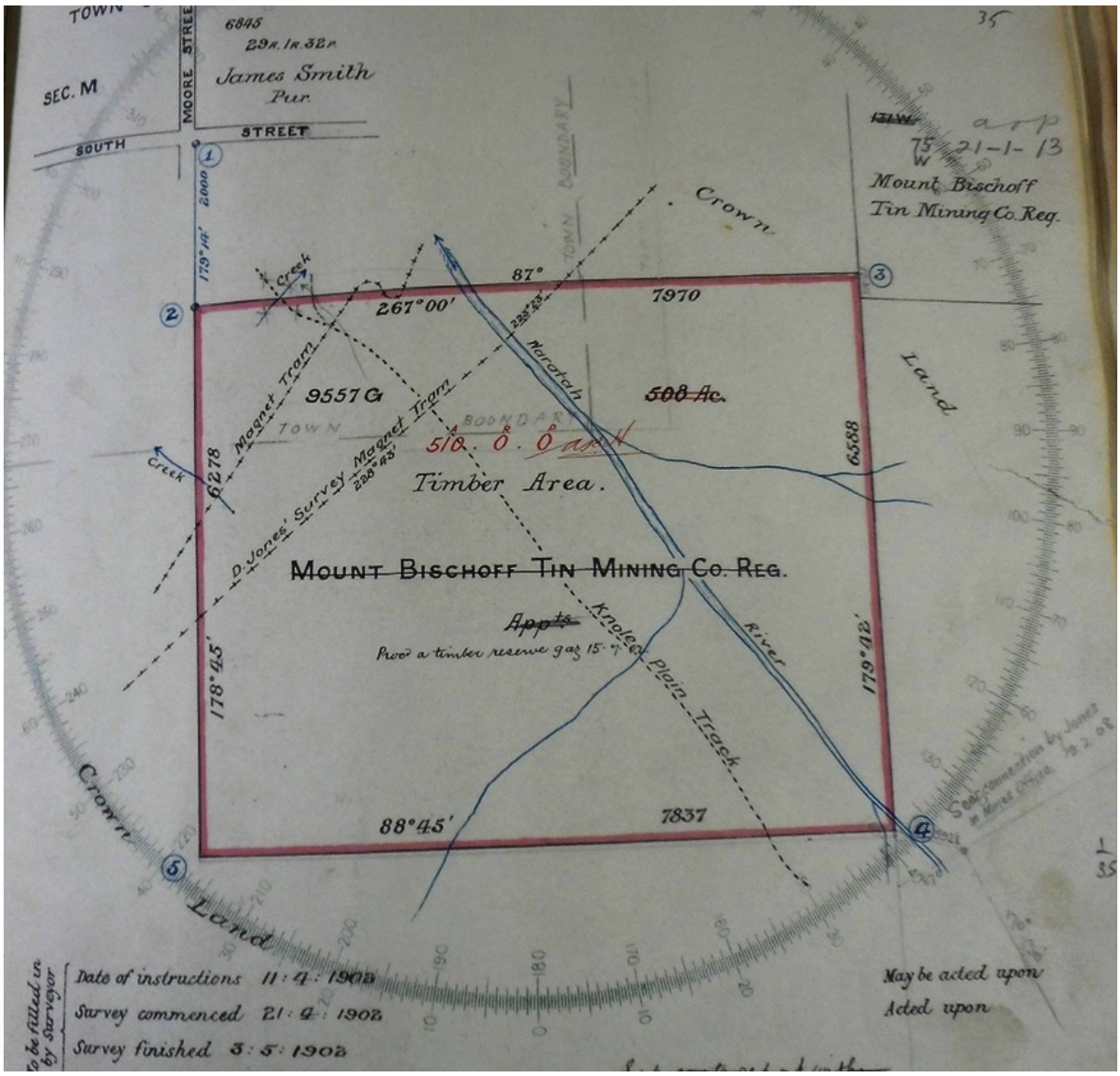
The directors did not believe that the existing system of water supply and power generation offered enough capacity for the new crushing plant. In July 1908, new mine manager Millen was instructed to attend a special meeting of the board of directors to discuss the immediate erection of the new plant and the procuring of an increased water supply to drive it.[13] The Hadfield (Hatfield) Marsh, and the Hadfield, Coldstream and Hellyer Rivers, were investigated as potential water sources, but when this scheme proved prohibitively expensive, Millen and the directors turned their attention to the idea of building further dams on the Falls Creek system.[14] Such a scheme would have necessitated leasing or buying part of the Van Diemen's Land Company's Surrey Hills block. [15] A third generating unit, consisting of a Voith turbine and a 375 KVA AEG generator, was installed in 1909 to increase power output.[16]

A severe water shortage which curtailed production in the first half of 1910 forced the Mount Bischoff Co into action. [17] In April 1910, Millen announced details of the proposed new dam, which would cover 800 acres in all, 50 within the town boundary and 750 acres outside. The dam's capacity when full would be 200 million gallons, taking the company's total storage to 700 million gallons.

---

[12] Peter Read, *The organisation of electricity supply in Tasmania*, University of Tasmania, Hobart, 1986, pp.10 and 29.
[13] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 28 July 1908, p.103, NS911/1/13 (TAHO).
[14] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 21 June 1909, p.273, NS911/1/13 (TAHO); 'Mt Bischoff Company', *Examiner*, 27 July 1909, p.7.
[15] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 16 March 1909, p.228, NS911/1/13 (TAHO).
[16] Read, *The organisation of electricity supply in Tasmania*, pp.10 and 29.
[17] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 22 March 1910, pp.6 and 7, NS911/1/14 (TAHO).

Estimated cost was £3093-10-0.[18] The site may have been chosen by RC Hales, chief surveyor for the Mount Bischoff Co.[19]




Crop from survey 057208 of the Mount Bischoff Tin Mining Co's 510-acre timber area, proclaimed in 1902, showing the position of the Magnet Tramway and the original 1870s cart track to Waratah via Knole Plain. The David Jones survey for the Magnet Tramway marked on this map was never acted upon.

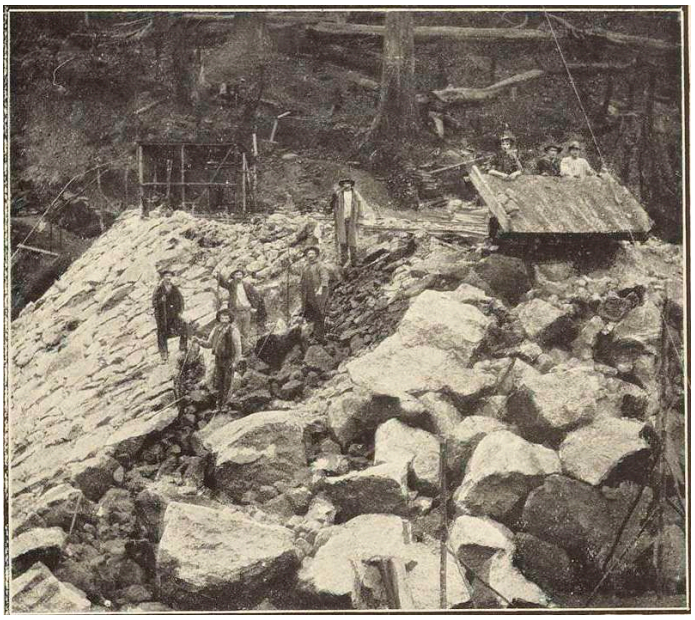
The proposed dam was not on Falls Creek, but on the Mount Bischoff Co's old timber reserve on the Waratah River, proclaimed in 1902. In February 1911 the *Daily Post* reported that

[18] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 26 April 1910, p.26, NS911/1/14 (TAHO).
[19] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 1 March 1910, p.388, NS911/1/13 (TAHO).

> The Mt Bischoff Co's new dam is steadily rising and is being made to last for at least the life of the mine. When completed it should enable the company to ignore the driest summer.[20]

Work was delayed as the company negotiated with the government in order to acquire the 50 acres within the town boundary, but in April 1911 Millen was able to announce completion of the dam at cost of £3211-16-8.[21]

The Mount Bischoff Co's 1880s dams on Falls Creek appear to have been dolerite-faced earthfill dams. The Magnet no.1 (Arthur River) Dam, built nearby in 1908 for the Magnet Silver Mining Company, appears to have been an earthfill dam. Design of such dams had traditionally lacked 'rational design methods', that is, rather than coming out of a textbook, stable earthfill embankments often owed their design to the individual experience of the designer, using little if any mathematical stability analysis.[22]



Building the walls of the Frome Dam, 1908.
TRG Williams photo from the *Tasmanian Mail*, 4 July 1908, p.21.

On the other hand, the Frome Dam, completed in 1908 for the Pioneer tin mine's Moorina Power Station, was the first rockfill concrete face dam built in Australia. More than forty other dams of this type followed across Australia, including the ill-fated Briseis Dam near Derby, built in 1928. Both these north-eastern dams had spillways designed to help dissipate flood events.[23] In the case of the Frome Dam, water was allowed to discharge over the crest and down the unprotected rockfill on the

[20] 'Waratah district', *Daily Post*, 15 February 1911, p.6.
[21] Minutes of Mount Bischoff Tin Mining Company directors' meetings, 23 August 1910, p.99; and 25 April 1911, p.220, NS911/1/14 (TAHO).
[22] Bob Watt, 'Earthfill dams', in *Dam technology in Australian 1850–1999*, (ed. Bruce Cole), Australian National Committee on Large Dams Inc, Penrith, NSW, 2000, p.113.
[23] Frank Kinstler, 'Rockfill dams with concrete faces', in *Dam technology in Australian 1850–1999*, pp.133–34.

downstream face.[24] Although rockfill concrete face dams generally proved economical to build, reliable and low maintenance, the breaching of the Briseis Dam in 1929 prompted the only loss of life due to dam failure in Australian history.[25]

The Waratah Dam appears to be an earthfill dam with a concrete spillway, on top of which was a wooden weir and walkway. To begin with, the area would have been scrubbed and cleared of vegetation. In construction of the Frome Dam, the next step was to sluice away the loose top soil. Then the river was diverted through a side race.[26]

Many earthfill dams had little foundation treatment, with only the organic topsoil and a 'nominal amount' of underlying material being excavated. A cut-off trench under the impervious zone of the embankment was often used to minimise foundation seepage.[27] In the early part of the twentieth century, equipment used was based on manpower and horsepower, as can be seen in photos of the construction of the Magnet no.2 (Magnet Creek) Dam in 1918.[28] Horse-drawn scrapers are pictured helping to compact the floor of the impoundment as it sloped up to the embankment, and sandbags were stacked laboriously by teams of two men carrying these on stretchers in order to reinforce the sloping floor. Hand-held barrows were also used. Bob Watt states that at the Yan Yean Dam built in Victoria in 1857, layers of fills 150 mm thick were laid down, with the finer material being placed towards the puddle clay core of the dam. Each layer was compacted by running loaded carts or barrows or a heavy roller over it.[29]

[24] Frank Kinstler, 'Spillways', in *Dam technology in Australia 1850–1999*, p.191.
[25] Frank Kinstler, 'Rockfill dams with concrete faces', p.131; 'Spillways', p.191.
[26] AJ Debenham, 'Frome Dam, Moorina, Tasmania: a paper read before the Sydney University Engineering Society, on June 16th, 1910', p.19, https://openjournals.library.sydney.edu.au/index.php/SUES/article/view/2140, accessed 17 May 2018.
[27] Bob Watt, 'Earthfill dams', p.115.
[28] Bob Watt, 'Earthfill dams', pp.118–19.
[29] Bob Watt, 'Earthfill dams', p.119.

Construction of the Magnet no.2 Dam on Magnet Creek, 1918, for the Magnet Silver Mining Company. This earthfill dam, like the Waratah Dam, was built to provide extra water for a mine's hydro-electric power plant.
JH Robinson photos courtesy of TMAG.

The outlet of the Magnet no.2 Dam below the dam wall, with water being released through a valve into a water race that emptied into a storage tank on a hill above the Magnet Silver Mining Company Power Station. Note that this dam had no spillway.
JH Robinson photo courtesy of TMAG.

The Waratah Dam showing the wooden weir above the concrete spillway.
Courtesy of the late Alf and Betty Clark, Waratah.

Like the Magnet no.2 Dam, the Waratah Dam was an earthfill dam, but it differed in having a concrete spillway and a wooden weir. According to Frank Kinstler, spillways

> serve the essential purpose of conveying excess flood water from the reservoir to the river downstream of the dam … Most spillways consist of a fixed weir crest at full storage level, a chute or tunnel to convey the rapidly accelerating water past the dam, and an energy dissipator to slow the water down before it enters the river, thus minimising erosion downstream.[30]

However, until the beginning of the twentieth century spillway design was mostly intuitive. Energy dissipators were only developed later, in the period 1924–57, and the so-called 'ski jump' or 'flip' bucket spillway which threw discharging water clear of the dam was not proposed until 1947.[31] The present Waratah Dam wall contains a valve which allows for the release of water, but a photo of the original dam with its original spillway in place does not make it clear whether a valve then existed. It is possible that the design of the original dam made no provision for the avoidance of water erosion at the foot of the dam wall. Such a design would have been typical for the period 1850–1900 in Australia, when spillways 'discharged directly onto rocks without any protection against erosion'.[32]

The Waratah Dam from within the impoundment, looking towards the dam wall, wooden weir and concrete spillway. Many trees have now died. The photo was probably taken to illustrate a particularly dry period at the mine.
Photo courtesy of Liz Harris, Longford.

[30] Frank Kinstler, 'Spillways', in *Dam technology in Australian 1850–1999*, pp.185–86.
[31] Frank Kinstler, 'Spillways', p.186.
[32] Frank Kinstler, 'Spillways', p.187.

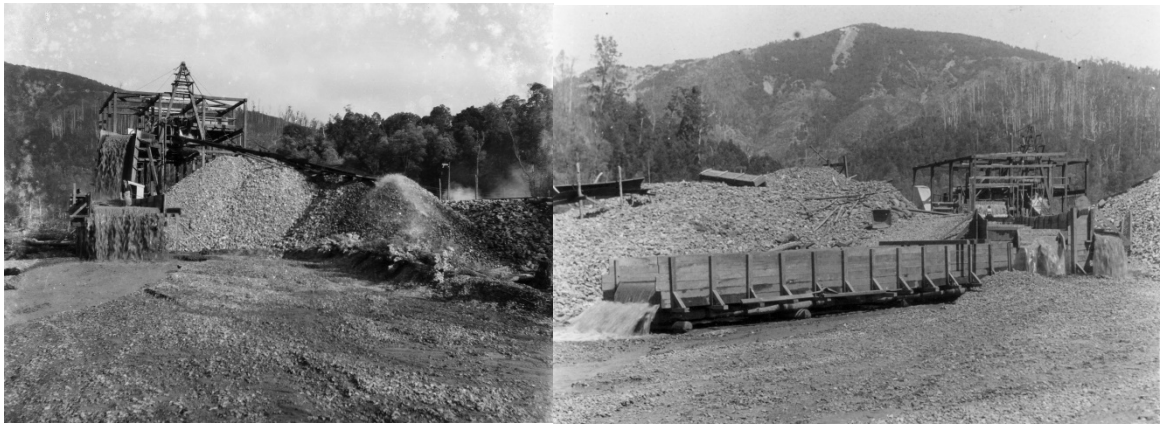
**Use of the Waratah Dam by the Mount Bischoff Company**

Although the Mount Bischoff Company referred to it as the Waratah Dam, some locals named it the Magnet Dam because of its proximity to the Magnet Tramway and Magnet Siding, where the Magnet Tramway met the Emu Bay Railway. This caused confusion because by 1918 the Magnet Silver Mining Company had two large dams of its own, as discussed above.

The Waratah Dam did not drought-proof the Mount Bischoff Co. In May 1913 dam levels were so low that work was stopped, men were laid off and prayers for rain were offered at St James' Church.[33] Men were again laid off for the same reason in May 1918.[34]

However, the scale of Mount Bischoff Company mining operations gradually reduced after World War One, as the old faces of the mine were exhausted and hopes of revitalisation were pinned on tin deposits in the North Bischoff Valley. On the other hand, by the 1920s the company supplied the power for the street lights of Waratah as well as lighting its churches, halls, hospital and the police and municipal offices. Electric power was also extended to the Bischoff Extended plant in the Tinstone Creek valley in 1926, and in the years 1928–29 power was supplied from the power station along a new transmission line to operate a dredge and associated facilities in the North Bischoff Valley. The dredge broke down frequently, and the small settlement in the valley was soon abandoned.

The Waratah Dam was vandalised in October 1927, when Mount Bischoff Co storesman JH Robinson reported to police damage which released about half a million gallons of water 'and which could easily have flooded the calcine works and power station, causing extensive damage'. Four men were apprehended by police—although, strangely, no further mention of this event was found in police, company or newspaper records.[35] Was this damage to a valve or to the dam wall? There were several other attacks on the company's property, including theft of explosives and obstruction of water races, at around this time.[36]



[33] 'Men discharged at Mt Bischoff', *Daily Post*, 15 May 1913, p.4.
[34] 'Bischoff water shortage', *North Western Advocate and the Emu Bay Times*, 9 May 1918, p.3.
[35] Entry for 17 October 1927, Crime and occurrence book, Waratah, POL655/1/3 (TAHO).
[36] See entries for 26 May 1928, 6 and 20 May 1930, 20 August 1930, Crime and occurrence book, Waratah, POL655/1/3 (TAHO).

In the years 1928–29 the Mount Bischoff water system powered a centrifugal dredge mounted on a wooden pontoon in the North Bischoff Valley. The trommel of the dredge now sits in a Waratah playground. JH Robinson photo courtesy of the late Nancy Gillard; RE Smith photo courtesy of the late Charles Smith.

**The Waratah Dam through the tribute era**

In April 1929 a freak weather pattern caused extensive flooding in northern Tasmania. The inundation of the Briseis tin mine at Derby by dam failure was the catalyst for closure of the Mount Bischoff Company's Launceston smelter. With the Mount Bischoff ore body nearing exhaustion, smelting rather than mining had long been the company's main breadwinner. The sudden loss of the Briseis and other customers, coupled with the slump in the tin price, prompted simultaneous closure of both the smelter and the Mount Bischoff tin mine.[37] Never again would the Mount Bischoff Company work its own mine.

The mine became a tribute operation. The expense of carting ore (especially from the North Bischoff Valley) to the mill at the Waratah Falls was mitigated by erecting a small auxiliary mill on site for tribute parties. The Mount Bischoff Company left an electrician in charge of the Power Station to maintain it, while the company's local book keeper, JH Robinson, doubled as maintenance man on the water system.[38]

The Waratah Dam continued to play a significant role in power generation, and not just for the mining tributers. During the 1930s lighting was extended to the residents of Waratah, whereas many outlying districts of Tasmania received electric power only in the post-World-War-Two era. The residential power cost two shillings per week and was available until midnight.[39] The effects of a dry spell in early 1934 were compounded by fire destroying a flume.[40] With no significant rain following, in early March 1934 the calcining plant had to be shut down, and later in the month only one of the company's dams was said to be holding any water, with the power station continuing to run principally to light the town.[41] The continuous flow of water for power supply was threatened at various times by vandalism, drought, landslips and flooding.[42]

**The advent of fishing in the Waratah Reservoir**

'Fishermen' were among the vandals. The Waratah Dam became a popular fishing site. Waratah resident Harry Reginald Paine believed that the first fish in the dam were poisoned by the sap of the myrtle trees still standing in the water, but as these trees died the fish began to thrive. Paine wrote that local man George Bester made the discovery:

[37] Minutes of Mount Bischoff Tin Mining Company directors' meetings 8 November 1929, p.173, and 22 October 1929, p.169, respectively, NS911/1/22; undated newspaper report attached to minutes of Mount Bischoff Tin Mining Company general meeting 24 February 1931, p.281, NS911/1/22 (TAHO).
[38] JH Levings, 'Waratah Municipal Council and the electric light', *Advocate*, 9 April 1930, p.8.
[39] Ken Harrington; quoted by Margery Godfrey, *Waratah: pioneer of the west,* Waratah Council, 1984, pp.27–28.
[40] 'West coast news and views', *Advocate*, 17 January 1934, p.8.
[41] 'Tasmania', *Advocate*, 8 March 1934, p.2; 'At Mt Bischoff', *Advocate,* 21 March 1934, p.3.
[42] 'Waratah blacked out', *Advocate*, 26 June 1952, p.2.

> As there was much bush still growing around this dam, very few if any, would visit. One Sunday afternoon he thought he might take a stroll out there, and, to Mr Bester's amazement, as he looked into the clear water from an embankment, he saw lovely big fish. For a long time he kept this to himself, going out and returning most times with a fish of 10–12 lbs. But his secret leaked out somehow and the dam was very heavily fished.[43]

The 1926 annual report of the Northern Tasmanian Fisheries Association described a chain of fishing sites at Waratah:

> There appears to be two kinds of trout in the Waratah district. No. 1 is long and narrow, with a beautiful silver sheen and bright red spots. No. 2 is deep-set fish, a little on the hump-backed style, with a beautiful brown sheen and brown and dark red spots. No. 1 keep in the dams, and the others are mostly found up the stream. Places of fishing Nos. 1 and 2 dams [Bischoff Reservoir], Mount Bischoff Company, Williams Creek running into them, No. 3 dam Mount Bischoff Company [Waratah Reservoir], on the Waratah River; thence by Waratah River to No. 4 dam [Town Dam]; distance between these dams about 1½ miles; Magnet Company's dam on the Waratah–Corinna road.[44]

In 1929 6000 brown trout fry were liberated in the 'Mt Bischoff Magnet dam [Waratah Reservoir]' by Lance Glozier and F Schell, acting on behalf of the North West Fisheries Association.[45] The fish caused the Mount Bischoff Company considerable grief. In 1931–32 'poachers' armed with 'strong explosives' caused such damage to flumes and dams that the company established evening patrols and appealed to the police for protection. Mine superintendent JH Levings wanted police to offer a £5 reward for evidence leading to a conviction.[46] It is easy to imagine that the dire economic circumstances of the time might have made a large catch of fish a more attractive proposition than usual.

**The Waratah Dam in the post-Mount Bischoff Co era**

The Mount Bischoff tin mine was operated by the Commonwealth Government during World War Two, ostensibly for unemployment relief at Waratah. In 1947 the Mount Bischoff Tin Mining Company was wound up, the mine again being given over to small operators who continued to use the calciner and batteries.

[43] Harry Reginald Paine, *Taking you back down the track … is about Waratah in the early days*, the author, Somerset, 1994, p.29.
[44] Northern Tasmanian Fisheries Association, *Annual report*, 1926; quoted in file AA18/1/35 (TAHO).
[45] 'Waratah', *Advocate*, 2 October 1929, p.4.
[46] Legal manager, Mount Bischoff Tin Mining Company, to the Commissioner of Police, 13 January and 8 February 1932: Commissioner of Police to legal manager, Mount Bischoff Tin Mining Company, 25 January and 4 March 1932, NS911/1/35 (TAHO).

Waratah in the 1960s, after abandonment of the power station. The wooden flume remains over the Waratah River, but the metal flume (foreground) to the power station is decrepit.
Bery Fowler photo courtesy of Thomas Gunn.

It was not until 1951, when the Hydro-Electric Commission took over the Power Station from the Commonwealth Department of Supply and Industry, that the townspeople of Waratah gained their first 24-hour-per-day power supply. A power line was constructed to connect the Power Station to the state electricity grid, which received about three-quarters of the power generated.[47] The new power line proved Waratah's saviour when in June 1952 a landslip in front of the Waratah Hotel put the steel flume to the Power Station out of action, ending the station's working life.[48]

**Fishing revived in the 1960s**

Fishing in the Waratah Reservoir seems to have ceased in the 1950s, when stocking of all local reservoirs lapsed. However, the Waratah-Guildford Branch of the North Western Fisheries Association was revived in 1960–61, with 'fair' fishing being recorded.[49] Rainbow trout were liberated in Waratah dams in 1963–64, although the detail of exactly which dams was not recorded.[50] In 1965 Inland Fisheries Commissioner DD Lynch noted that the Mount Bischoff Company dams 'offered a great potential for development as recreational fisheries for use by residents of the West Coast'.[51] By 1968 two new mining towns, Luina and Savage River, had been established in the Waratah area, increasing the number of active fishermen and the need for

[47] 'Waratah feeding hydro power into state system', *Advocate*, 12 February 1952, p.5.
[48] 'Waratah blacked out', *Advocate*, 26 June 1952, p.2.
[49] North Western Fisheries Association of Tasmania, *Annual report*, 1961, p.17.
[50] North Western Fisheries Association of Tasmania, *Annual report*, 1963, p.65.
[51] DD Lynch, 'Waratah Dam', 9 April 1965, AA18/1/35 (TAHO).

fisheries. The North Western Fisheries Association encouraged the Inland Fisheries Commission to investigate the dams of Waratah for possible stocking with rainbow trout, but eventually, in 1970–71, the association liberated 10,000 brown trout fry in each of the Waratah and Magnet no.1 Dams.[52]

In 1973 Inland Fisheries Commissioner DD Lynch noted that the Waratah Reservoir was being fished for brown trout. He also noted that 'a by-pass road was cut to the north of the dam wall when it was feared part of the wall might break and flood would run through the town'.[53] Lynch supported Waratah Council's efforts to restore the Town Dam in order to create an additional fishery.[54]

DAM BURSTS NEAR WARATAH: MINE HIT

INSIDE
Reps nod to Family Law Bill divorce clause — P. 2

The Advocate
SERVING NORTH-WESTERN & WESTERN TASMANIA
20 PAGES TUESDAY, MAY 20, 1975 *11 Cents

A water storage dam near Waratah burst yesterday, isolating the town for several hours and stopping production at the ill-fated Ringarooma tin mine.

Residents said the wall of the dam, which had taken a battering during a week of heavy rain, burst about 10.30 a.m., sending millions of litres of water racing towards the town.

The Corinna Rd Bridge was damaged and the Main St bridge swept away as a wall of water surged down the Waratah River.

The section of Waratah north of the river was cut off from the main highway till the Corinna Rd bridge was opened to light traffic at 4.30 p.m.

The Waratah Council will have an early meeting to decide what action is necessary to repair the dam and road, and the bridge damage.

Floods recede in the South

The main street into Waratah now has a 25-metre gap where gushing floodwaters from the broken main Magnet dam washed away the culvert and road behind the Waratah waterfall.

TWO DIE IN N.W. SMASH

A man and a woman were killed and a second woman injured in a head-on collision on the Bass Highway near Montumana yesterday.

FORECAST — N.W. and West Coasts: Rain.

Berlei & Hestia WINTER SPECIALS

SATISFACTION

Priced at $4.99

EGO BRAS and SLIPS

Bra's from $4.99 - Slips from $7.99

CHEEKY PANTS

Priced at $8.99

Remember we have a trained corsetier in attendance at all times at

CRUICKSHANKS
Reibey St. ULVERSTONE

Page 4 — The Advocate, Tuesday, May 20, 1975

Waterlogged Waratah

More than 250 mm of rain has fallen in the Waratah area in the past 10 days. Yesterday, it came to a head.

The number one Magnet dam wall broke, sending water cascading down Corinna Creek towards Waratah.

"Advocate" photographer, DON CARTER, was on the scene, and captured this pictorial account of the results of the flood.

The Advocate records the damage at Waratah in May 1975, showing the missing Smith Street bridge, the damaged William Street bridge, the breached dam wall and the emptied reservoir.

[52] North Western Fisheries Association of Tasmania, *Annual report*, 1969, p.7; *Annual report* 1972, p.67.
[53] DD Lynch, 'Waratah Dam', 17 February 1973, AA18/1/35 (TAHO).
[54] Lloyd Costello, Minister for Agriculture, to Waratah Council Clerk, 21 February 1973, AA18/1/35 (TAHO).

The aftermath of the Waratah Dam burst in May 1975, with the Smith Street road bridge being destroyed. Photos PH30-1-4875 and PH30-1-4876 courtesy of LINC Tasmania.

Fears for the Waratah Dam were vindicated in May 1975 when, during heavy rain, the wall was breached. Millions of litres of water rushed down the Waratah River, damaging the Corinna Road (William Street) Bridge, destroying the Main Street Bridge just above the Waratah Falls and disrupting two tin mining operations in the North Bischoff Valley: that of Ringarooma Mines; and Stan Tatlow's one-man venture.[55] The dam's wooden weir and concrete spillway were destroyed.

The Waratah Council sought government help for repairs, asking that the damage to the two bridges and the dam wall be regarded as natural disasters. MHR for Braddon, Ron Davies, negotiated with Minister for Defence, Lance Barnard, whose portfolio included the Natural Disasters Organisation, to send an army engineer to assess the damage.[56]

Brett Chatwin of Burnie recalled spin fishing the Waratah Dam soon after this event as a seventeen-year-old, and fishing this water on and off for the last 40 years. He and Len Radford fished both arms of the reservoir from a 'tinny', finding that the brown trout loved orange spinners. Chatwin also fished the Bischoff Reservoir, but found that Waratah Dam held bigger fish. He stated that 'the Waratah Dam has leaked as long as I have known it'.[57]

In 1980 the Inland Fisheries Commission visited the rebuilt Waratah Reservoir and decided to maintain it as a brown trout fishery. At this time, Penneys Dam and the Magnet no.1 Dam were also being fished, although the use of conflicting names for the dams makes deciphering some of the description very difficult.[58]

[55] 'Dam bursts near Waratah: mine hit', *Advocate*, 20 May 1975, p.1; 'Waterlogged Waratah', *Advocate*, 20 May 1975, p.4.
[56] 'Government dam aid', *Advocate*, 23 May 1975, p.2.
[57] Interview with Brett Chatwin, 19 May 2018.
[58] DD Lynch, notes on Lake Waratah, 10 June 1980, AA18/1/35 (TAHO).

One angler described the fishing experience at 'one of my favourite fishing places' in the article 'Waratah Dams' in 2002. Although the author does not specify which dam he fished, his reference to logs lying in the water, rushes, a pool separated from the main lake and a southwest corner suggest the Waratah Dam:

> One particular trip to this area in late November this season and catching four nice trout was most rewarding. Especially catching one trout in particular. One of the attractions in this area is fishing to trout feeding on the large black spinners that are abundant at this time of year. After lunch I resumed fishing in a bay at the southwest corner of the lake. This area is reasonably shallow with many logs lying in the water. Walking among the rushes along the shore I managed to catch a fish that was spotted rising amongst the logs. Moving on I heard a fish rising somewhere behind me. On closer inspection the fish was to be found in a small roughly triangular shaped area which was separated from the main lake by logs and a thick wall of rushes. The fish was cruising around the pool leaping clear of the water and chasing black spinners flying above the surface. After watching the fish's movements for a few minutes I made a cast with my red tag and waited. The fish eventually swimming past my fly showing no interest but continued to feed.
>
> In order to get a better view I decided to move round onto the bank behind the fish. Standing behind a small bush out of sight I tried two different flies on the fish without success. As it was a bright day the next thing to do was try a finer tippet. After tying on a length of four and half pound nylon and a number 14 red tag, I cast the fly into the path of the fish which could be clearly seen swimming around the pool. The fish soon swam up to the fly and without hesitation slipped the fly into its mouth. After hooking, the fish was soon in the net.[59]

Hannah Ledger is an avid Waratah Dam user. She claims that the reservoir attracts not just for fishermen ('The spawning recruitment in there is phenomenal'), but kayakers, bird-watchers, bushwalkers, fungi hunters and animal watchers, stating that there is 'a lot of foot traffic' through the area. She believes Waratah Dam has often been fished as one of a chain of sites, which included Talbots Lagoon, the Bischoff Reservoir and the Town Dam as well. She recalled kayaking in one of the narrow arms of the reservoir amongst kingfishers, seeing wedgetail eagles and platypuses and, on a really calm day with southerly weather, the view of Cradle Mountain 20 km away. She claims that the lake is 'aesthetically stunning' and has sentimental value to those who helped stock it in the 1950s and 1960s. Ledger believes that recreational use of the dam has increased through social media and recent tourism interest in Waratah as a destination, especially now that people can get food, petrol and accommodation in the town.[60]

Len Radford has concentrated his fishing at the Waratah Dam over the last three or four years, claiming that the reservoir contains the best eating fish in the state. He speculates that this may be

[59] Rodney Stitz, 'Waratah Dams', *Coastal Angler* (newsletter of the Burnie Branch of the North Western Fisheries Association), April 2002, unpaginated.
[60] Interview with Hannah Ledger, 18 May 2018.

because of some sort of native yabby that the trout eat. He says that for him the fishing has improved since the water level was lowered, because he can now take his boat up to the junction of the two 'arms' of the reservoir, 'park' it, then walk up the sides of the 'arms' where the water is only three feet deep. He stated that the reservoir was stocked with rainbow trout a few years ago but he catches only brown trout. Radford called the Waratah Reservoir 'the best lake in Tasmania for fishing'.[61]

Robert Fifield supported Len Radford's contention that the Waratah Reservoir was the best lake in Tasmania for fishing, commenting that it is a 'phenomenal fishery' and that the colour of the trout was 'incredible'. Fifield said that, with its long 'arms', the Waratah Reservoir suited the fisherman's desire to avoid 'angling pressure', that is, it gave anglers the chance to escape to a place on their own. However, unlike Len Radford, Fifield fishes from a boat and finds the reduced water level 'crippling' (the 'arms' of the lake have been reduced from about 1.5 km in length to about 500 m), because he cannot move around much in the boat. As a result, he now fishes more at Talbots Lagoon. He also stated that the Waratah Reservoir has been restocked with rainbow trout, but that the brown trout were self-perpetuating. He said that the difference between the Waratah Reservoir and the Bischoff Reservoir as fisheries was that the former has more fallen timber behind and under which fish can shelter. It also contains bigger fish than the Bischoff Reservoir. One of the advantages of the Waratah Reservoir as a fishery is that you can drive right to it, whereas that is not the case with Talbots Lagoon. He quoted a page from Greg French's *Tasmanian trout waters*, the 2002 edition, (p.324) to the effect that 2 kg fish had been plentiful in the Waratah Reservoir. Fifield said that removal of the Waratah Dam wall would cause 'a significant loss'.[62]

## Significance of the Waratah Dam

By 1911 the Mount Bischoff Co Water and Power system consisted of about 36 km of water races, flumes (including one underground), dams, reservoirs, pipes, a holding tank, a power station and associated access tracks. Despite the company's liquidation in 1947 and some of these elements being reduced to a ruinous state, nearly all of them are easily identifiable today.

The fishing community and the local Waratah community have generally seen the Waratah Dam as one of a suite of mining waterways in the area which includes the Bischoff Reservoir and the Magnet no.1 Dam built by the Magnet Silver Mining Company. Mixing of the names of these dams and reservoirs has at times made it hard to decipher which waterway is being described. However, several interviewees during the course of this assessment expressed the opinion that the Waratah Reservoir is an outstanding fishing lake, distinctly better than the Bischoff Reservoir, which drops to a lower level in summer and provides less shelter for fish.

Elements of the system have been incorporated into everyday life at Waratah. The original track to the Ringtail Sheds, on the eastern side of the Waratah River, remains open as a walking track to the ruin of the Power Station, which is a popular site for photographers. The water race which emerges from the Water Culvert has become a water hazard on the Mountain View Golf Course. The water race from the Town Dam which once served the Power Station now turns a waterwheel built by

[61] Interview with Len Radford, 25 May 2018.
[62] Interview with Robert Fifield, 26 May 2018.

former Mount Bischoff miner Dudley Kenworthy. In recent years River Power Tasmania claims to have undertaken 'feasibility, redesign and recommissioning works' involving the Mount Bischoff Power Station 'as part of a wider tourism and renewable energy development in the Waratah area'.[63]

The Mount Bischoff Water and Power system has featured in tourism promotion of Waratah. The 'Town of tin' historic interpretation provided for the Waratah-Wynyard Council in 2008 featured six sites in Smith Street/Main Street: the Mine Manager's house; St James' Church; the former Waratah Court House and Council Chambers (Waratah Museum); the Athenaeum Hall; the former Waratah Post Office; and the Bischoff Hotel. In addition, an interpretation panel mounted overlooking the Waratah Falls explores 'Waratah's emblems: tin and water', describing the Mount Bischoff Co's use of water to drive machinery and raise hydro-electric power. In about 2012 an interpretive site was established at one of the maintenance hatches of the Water Culvert. Situated just off the vehicular track leading to the Waratah Dam, it describes the operation of the Water and Power system.

However, few Waratah visitors know to drive beyond this site to the un-signposted Waratah Dam, and few, other than fishermen, would have been aware of its existence or its part in the Mount Bischoff Co mine operation before its recent publicity.

In 2012 the Mount Bischoff Water and Power system was nominated for the Tasmanian Heritage Register. The system was permanently registered in 2016 as THR#11,963. Only one significance criterion needs to be met to qualify a site for listing on the Tasmanian Heritage Register. The Mount Bischoff Water and Power system met six criteria, that is, (a) (important to the course or pattern of Tasmania's history); (b) (possessing uncommon or rare aspects of Tasmania's history); (c) (having the potential to yield information that will contribute to an understanding of Tasmania's history); (e) (important in demonstrating a high degree of creative or technical achievement); (f) (having a strong or special association with a particular community or cultural group for social or spiritual reasons); and (g) (having a special association with the life or works of a person, or group of persons, of important in Tasmania's history.

Features registered were the 1906–07 Mount Bischoff Co Power Station; the 1907 Black Tank, including the line of the pipeline and haulage way connecting it to the power station; the 1.2-km-long 1884–88 water culvert or water tunnel south of Camp Road near Waratah; the 1880 Stone Dam water race, with its myrtle plantings, connecting the lower Falls Creek reservoir system to the Mount Bischoff Co mill site at the Waratah Falls; and the system of connected 1880s dams on Falls Creek, that is, the Stone Dam, the Railway Dam (Norths Dam), Penneys Dam and the Fill 'em Dam (Bischoff Reservoir). These features amounted to about 40% of the original elements of the system.

The reconstructed Waratah Dam was not included in the registration. The Waratah Dam appears to have retained its original form, with a concrete spillway and wooden weir, until 1975, when the dam wall was breached by a flooded Waratah River. Today a bulldozed earthfill embankment around which the river is diverted stands in the place of the Mount Bischoff Co dam. While its position on

[63] River Power Tasmania website, http://www.riverpowertasmania.com.au/waratah-power-station.html, accessed 17 May 2018.

the Waratah River recalls the part of the original dam in the Mount Bischoff Water and Power system, it cannot be said to demonstrate the operation of that system in the same way as the Power Station, the Black Tank, or the dolerite-walled dams on Falls Creek, for example, which retain more of their heritage fabric. The present Waratah Dam appears to meet no criteria required for listing on the Tasmanian Heritage Register at the state level, although it qualifies at a local level under Criterion (f):

**a) It is important in demonstrating the evolution or pattern of Tasmania's history.**

The Mount Bischoff Tin Mining Company Water and Power system is of historic cultural heritage because it demonstrates the evolution of industrial power supply and mining technology. It qualifies under significance indicator A4 (notable example of the harvesting and trade of natural resources; notable example of the development and applications of technology in Tasmania) at a state level.[64] Although the Tasmania gold mine at Beaconsfield was partly electrified in the 1890s, the establishment of an almost complete system of electrification (miners continued to use candles for lighting underground at Mount Bischoff) in 1907 foreshadowed developments at other Tasmanian mines. The Pioneer, Mount Lyell, Magnet and Federation mines all adopted hydro-electricity early in the twentieth century. The original Waratah Dam was part of the Mount Bischoff Water and Power system. However, the present dam is a 1975 rebuild, which differs from the original construction in having no concrete spillway or wooden weir. Flood dissipation in the present dam is achieved by having the Waratah River flow around the dam wall and by the use of a valve at the base of the dam wall. The present dam poorly demonstrates the working of the Mount Bischoff Co Water and Power system.

**b) It demonstrates rare, uncommon or endangered aspects of Tasmania's heritage.**

Although now a ruin, the Mount Bischoff Co Power Station is the earliest remaining power station built for a Tasmanian mine, qualifying under significance indicator B2 (evidence of a rare historical activity that was considered distinctive, uncommon or unusual at the time it occurred) at a state level.

The Waratah Dam was only the second Tasmanian dam (after the Frome Dam near Moorina) built specifically to supply a hydro-electric scheme. It was an unusual earthfill dam with a concrete spillway and a wooden weir. However, unlike the Frome Dam or the Magnet no.2 Dam, it was not the primary dam used for water supply: it was a supplementary dam. Moreover, the breaching of the dam in 1975 destroyed the spillway and the weir and prompted the diversion of the Waratah River around the edge of the dam wall. The present dam wall is a 1975 rebuild which was not designed to emulate the original but, perhaps, to continue to provide a water supply for the town of Waratah. The Waratah Dam recalls the Mount Bischoff power system, but the present dam wall contains few original features and has little integrity. It does not demonstrate rare, uncommon or endangered aspects of Tasmania's heritage.

---

[64] 'Assessing historic heritage significance: for application with the *Historic Cultural Heritage Act 1995'*, version 5, DPIPWE, Hobart, October 2011, http://heritage.tas.gov.au/Documents/Assessing%20Historic%20Heritage%20Significance.pdf, accessed 17 May 2018.

c) **The place has the potential to yield information that will contribute to an understanding of Tasmania's history**.

Leave for Greg.

**d) It is important as a representative in demonstrating the characteristics of a broader class of cultural places.**

The Waratah Dam was built 1910–11 to supplement the water storage available for the generation of hydro-electric power for the Mount Bischoff mine. Later it also helped power the town of Waratah, a function it fulfilled until 1952. The present dam is a merely functional 1975 rebuild without the distinguishing features of the original. More intact examples of early Tasmanian earthfill mining dams are common. These include the Mount Bischoff Co's dolerite-faced Penneys Dam and the Fill 'em Dam; the Magnet Silver Mining Company's Magnet no.2 (Magnet Creek) Dam; the Bischoff Extended Dam; the dam at Pryde's tin workings south-west of Waratah; and the Shepherd and Murphy Dam near Moina. Of early Tasmanian mining dams constructed specifically for hydro-electric generation, the Magnet no. 2 Dam and the Lake Margaret Dam near Queenstown have greater integrity than the Waratah Dam. To qualify at a local level under Criterion D, the Waratah Dam would need to be a 'particularly fine example of the class in a local area, demonstrating a range of characteristics that are typical of the class'; 'a particularly fine example of the class in the local area, demonstrating a range of physical characteristics that typify the class and which remain mostly unchanged since built and/or created'; or a 'fine, intact or pivotal example in the local area'. It is not representative in demonstrating the characteristics of a broader class of cultural places.

**e) It is important in demonstrating a high degree of creative or technical achievement.**

The Mount Bischoff Water and Power system was a complex one which used dams, aboveground flumes, water races, an underground flume, a holding tank, pipes and turbines to power the Mount Bischoff mine operation and ultimately the town of Waratah. This was a significant technical achievement. Amongst Tasmanian mines, Bischoff's only challenger for primacy in hydro-electric development was the Tasmania gold mine at Beaconsfield, which in the years 1885–97 established a hydro-electric system to power some of its operations.[65] The Mount Bischoff Water and Power system would qualify for the Tasmanian Heritage Level under significance indicator E3 (High degree of technical design) at a state level. While the Waratah Dam recalls the working of the Mount Bischoff Water and Power system, it is a merely functional earthfill dam wall. The original dam design may have represented adaptation to meet local needs, but the present, rebuilt dam wall does not demonstrate a high degree of creative or technical achievement.

**f) It has strong or special meaning for any group or community because of social, cultural or spiritual associations.**

[65] Janet Kerrison, 'Beaconsfield and its mine', BA Hons thesis, University of Tasmania, Hobart, 1962, pp.53–54.

The Mount Bischoff Water and Power system was found to meet this criterion when being assessed for the Tasmanian Heritage Register:

> For more than a century the Mount Bischoff water system has had significant cultural and recreational values for many people, who have used its access tracks for sightseeing and picnicking, and its dams for bathing and fishing. The damming of the Waratah River south of the railway bridge in 1979 to create Lake Waratah, a popular site for visiting motorhome enthusiasts, has continued this theme of recreational use of water storage. Community attachment to features of the water system continues. In 2014 the Mount Bischoff Co's Waratah Reservoir forms Waratah's water supply [water is actually taken from the river downstream of the reservoir], one of the company's water races is a hazard on Waratah's Mountain Vista Golf Course, and access tracks to the Mount Bischoff Co Power Station and dams are still used for recreational purposes and for sightseeing. Interpretation panels around the town and at the water tunnel explain how the water system worked.

That assessment of qualification under Criterion F would not stand up under the threshold guidelines (significance indicators) now applied to sites nominated for the Tasmanian Heritage Register. However, the Mount Bischoff Power and Water system would qualify at a state level under significance indicator F6 (important in linking the past affectionately to the present; a place that is known, used and valued as a link between the past and present by many Tasmanians).

Does the Waratah Dam demonstrate the same values? The Waratah community has fished, canoed and bathed in the reservoir created by the Waratah Dam for decades. Members of the local community value the reservoir as a wetlands because of its bird, crayfish and platypus population.[66] Some value the Waratah Dam for its historic heritage, with its origins in the Mount Bischoff Company's mining operations.[67] Other reservoirs in the Waratah area, including the Bischoff Reservoir (Penneys Dam and the Fill 'em Dam), have also been stocked with trout, but the Waratah Reservoir appears to have become the best fishery.[68] One signatory to a petition to 'save the Waratah Dam', Brett Chatwin, claimed on Facebook that he had fished the reservoir for 40 years.[69] Other dams in the Waratah region also act as wetlands, such as the marshy Stone Dam on Falls Creek, while being less accessible than the Waratah Dam. Many old Tasmanian mining dams support a platypus population. There is evidence that the Waratah Dam has strong or special meaning for the Waratah community and the north-western fishing community because of social associations, that is, it qualifies under significance indicators F3 (a place that symbolically represents some aspects of the past that a local community or cultural group feels contributes to the local identity), F5 (public places that form the hub of local community services and cultural institutions) and F6 (a place that is known, used and valued as a link between the past and present by the local community) at a local level.

[66] Interviews with Chris Hawkins and Judith Lello, 5 May and 13 May 2018 respectively.
[67] Interviews with Joe Fagan, 4 May 2018, and Judith Lello, 13 May 2018 respectively.
[68] Interview with Judith Lello, 13 May 2018.
[69] Brett Chatwin, Facebook post, 19 December 2017.

**g) It has a special association with the life or work of a person, a group or an organisation that was important in Tasmania's history.**

The Waratah Dam was built by the Mount Bischoff Tin Mining Company, a pioneering Tasmanian mining enterprise noted for its innovation and its pivotal role in the development of the then colony's west coast mining fields. It is likely that no other Australian mining company made more use of the motive power of water, and in 1883 it was the first Tasmanian mining company and perhaps the first Tasmanian business of any kind to use hydro-electric power. The Mount Bischoff Co Water and Power system would qualify at a state level under significance indicator G4 (association with an organisation). The Waratah Dam is one of several elements (including dams, the water culvert, water races, the Black Tank and the remains of the Power Station) which recall the Mount Bischoff Co Water and Power system, but its integrity is poor, being a merely functional 1975 replacement of the original dam. For this reason, its association with the Mount Bischoff Co is not particularly strong.

**h) The place is important in exhibiting particular aesthetic characteristics.**

While several people interviewed during this assessment valued the rainforest at the southern end of the reservoir, and one described the reservoir as 'aesthetically stunning', the Waratah Dam itself does not appear to be valued for particular aesthetic characteristics. In fact, the only characteristic of the dam wall mentioned was its leakiness.

## Bibliography


'Assessing historic heritage significance: for application with the *Historic Cultural Heritage Act 1995'*, version 5, DPIPWE, Hobart, October 2011, http://heritage.tas.gov.au/Documents/Assessing%20Historic%20Heritage%20Significance.pdf, accessed 17 May 2018.

'At Mt Bischoff', *Advocate,* 21 March 1934, p.3.

'Bischoff water shortage', *North Western Advocate and the Emu Bay Times*, 9 May 1918, p.3.

Blainey, Geoffrey, *The rush that never ended: a history of Australian mining*, Melbourne University Press, 1963.

Crime and occurrence book, Waratah, POL655/1/3 (Tasmanian Archive and Heritage Office).

'Dam bursts near Waratah: mine hit', *Advocate*, 20 May 1975, p.1.

Debenham, AJ, 'Frome Dam, Moorina, Tasmania: a paper read before the Sydney University Engineering Society, on June 16th, 1910', https://openjournals.library.sydney.edu.au/index.php/SUES/article/view/2140, accessed 17 May 2018.

Editorial, *Brisbane Courier*, 5 August 1882, p.7.

'Government dam aid', *Advocate*, 23 May 1975, p.2.

Groves, DI; Martin, EL; Murchie, H; and Wellington, HK, *A century of tin mining at Mount Bischoff, 1871–1971,* Geological Survey Bulletin, no.54, Department of Mines Hobart, 1972.

Harrington, Ken; quoted by Margery Godfrey, *Waratah: pioneer of the west,* Waratah Council, 1984, pp.27–28.

Haygarth, Nic, *Baron Bischoff: Philosopher Smith and the birth of Tasmanian mining, the author*, Perth, 2004.

Inland Fisheries Commission, Waratah dams file, AA18/1/35 (Tasmanian Archive and Heritage Office).

Kayser, HW Ferd, 'Mount Bischoff', *Proceedings of the Australasian Association for the Advancement of Science* (ed. A Merton), Sydney, 1892, vol.IV, pp.342–59.

Kayser, Heinrich Wilhelm Ferdinand, and Provis, Richard, 'Mount Bischoff tin mine, Tasmania', in *Minutes of proceedings of the Institution of Civil Engineers* (ed. James Forrest), London, 1896, vol.CXXXIII, 1895–96, Part I, pp.377–87.

Kerrison, Janet, 'Beaconsfield and its mine', BA Hons thesis, University of Tasmania, Hobart, 1962.

Kinstler, Frank, 'Rockfill dams with concrete faces', in *Dam technology in Australian 1850–1999* (ed. Bruce Cole), Australian National Committee on Large Dams Inc, Penrith, NSW, 2000, p.131.

Kinstler, Frank, 'Spillways', in *Dam technology in Australian 1850–1999* (ed. Bruce Cole), Australian National Committee on Large Dams Inc, Penrith, NSW, 2000, pp.185–86.

Levings, JH, 'Waratah Municipal Council and the electric light', *Advocate*, 9 April 1930, p.8.

'Men discharged at Mt Bischoff', *Daily Post*, 15 May 1913, p.4.

Mount Bischoff Tin Mining Company, correspondence, NS911/1/35 (Tasmanian Archive and Heritage Office).

Mount Bischoff Tin Mining Company directors' meetings, minutes, N911/1/3, NS911/1/5, NS911/1/6, NS911/1/13, NS911/1/14 and NS911/1/22 (Tasmanian Archive and Heritage Office).

'Mt Bischoff Company', *Examiner*, 27 July 1909, p.7.

North Western Fisheries Association of Tasmania, *Annual report*s.

Paine, Harry Reginald, *Taking you back down the track … is about Waratah in the early days*, the author, Somerset, 1994.

Preston, Keith, 'Mount Bischoff tin mines: pioneers of water power in the Tasmanian mining industry', *Journal of Australasian Mining History*, vol.8, September 2010, pp.148–71.

Read, Peter, *The organisation of electricity supply in Tasmania*, University of Tasmania, Hobart, 1986.

River Power Tasmania website, http://www.riverpowertasmania.com.au/waratah-power-station.html, accessed 17 May 2018.

Stitz, Rodney, 'Waratah Dams', *Coastal Angler* (newsletter of the Burnie Branch of the North Western Fisheries Association), April 2002, unpaginated.

'Tasmania', *Advocate*, 8 March 1934, p.2.

'The world's greatest tin mine', *North Western Advocate and the Emu Bay Times*, 22 September 1911, p.4.

'Visit of His Excellency the Governor to the northwest coast', *Cornwall Chronicle*, 8 March 1875, p.3.

'Waratah', *Advocate*, 2 October 1929, p.4.

'Waratah blacked out', *Advocate*, 26 June 1952, p.2.

'Waratah district', *Daily Post*, 15 February 1911, p.6.

'Waratah feeding hydro power into state system', *Advocate*, 12 February 1952, p.5.

'Waterlogged Waratah', *Advocate*, 20 May 1975, p.4.

Bob Watt, 'Earthfill dams', in *Dam technology in Australian 1850–1999* (ed. Bruce Cole), Australian National Committee on Large Dams Inc, Penrith, NSW, 2000, p.115.

'West coast news and views', *Advocate*, 17 January 1934, p.8.

**Interviews conducted**

Brett Chatwin, Burnie, 19 May 2018.

Anne Dunham, Burnie/Waratah, 4 May 2018.

Joe Fagan, Waratah, 4 May 2018.

Robert Fifield, Burnie, 26 May 2018.

Chris Hawkins, Waratah, 4 May 2018.

Cobi Landry, Waratah, 24 May 2018.

Hannah Ledger, Burnie, 18 May 2018.

Paul Ledger, Somerset, 18 May 2018.

Judith Lello, Waratah, 13 May 2018.

Len Radford, Burnie, 25 May 2018.

Sue Walsh, Waratah, 4 May 2018.