
EATON'S WATER RACE AND DAM WALL

Location

CRESWICK-BUNGAREE ROAD AND JACKASS ROAD CRESWICK AND SLATY CREEK ROAD CABBAGE TREE, HEPBURN SHIRE

Municipality

HEPBURN SHIRE

Level of significance

Heritage Inventory Site

Heritage Inventory (HI) Number

H7623-0338

Heritage Listing

Victorian Heritage Inventory

Interpretation of Site	<p>Constructed in 1857 by labourers (including Chinese) for James Robertson. The race brought water from Bullarook Forest to Robertsons sluicing claim at Humbug Hill. In 1860s Robertson sold his shares in the race and the race became known as the St Georges race, supplying the St Georges Sluicing Company claims at Humbug Hill. In 1862 the company adopted new patent bitumen pipe technology to replace the wooden flume built by Robertson. The upper part of the race was taken over by the Council in 1864. The remainder was still utilized by Chinese miners. By 1880 the Council had leased the whole race, presumably for augmenting Council water supply, however by the early 20th century it appears this race fell into disuse.</p> <p>Built in 1862 to supply water to miners along Back Creek, Eatons dam remained in use until the 1930's. The dam, built by the Eaton Brothers, was leased between the 1860's and 1930s by John Roycraft, after which time the dam fell into disuse. At times the dam supplemented the Creswick water supply, however the wall was often subject to flood damage and the establishment of Cosgraves Reservoir diminished any need for Eaton's Dam. Eatons Dam became a popular site for picnics, bird watching, shooting parties and fishing by the late 19th century until the dam wall was breeched in the 1920's.</p>
Archaeological Significance	<p>This site has a high <i>level</i> of archaeological significance.</p> <p>The race is well preserved for its entirety and is a representative example of an 1860s water race that was utilised over several decades for both mining and water supply purposes. Archaeological features include the race alignment, negative cut features, spoil and sediment deposits, dams, diversions, sluice points, and potential gauges, pipes, and sluice lining materials. Although water races are common on Victorian Goldfields very few races in Victoria have been documented and mapped in detail and the integrity of remaining goldfield watermanagement complexes is largely under researched.</p> <p>The dam wall is in an excellent state of preservation. The dam is unusual in the district for having been built with a substantial <i>vertical</i> stone facing downstream and a clay embankment on the upstream (water) side.</p>
Historical Significance	<p>The site has a HIGH level of historical significance at a local level. The site has a rich documentary record.</p> <p>Due to the excellent preservation of a large part of the Creswick goldfield, the intertwined narratives of mining, water supply, environmental consequences and rapidly evolving legislation can be read in the landscape. At a state level the site contributes to broader narratives of water supply and mining (Victorian Historical Theme 4.5 & 4.6) and informs the development of both mining and water management laws for the State of Victoria. The dam and associated race system is one of many on the Creswick alluvial goldfield that together make up an important and well preserved cultural landscape of water management. Combined with Creswick's strong forestry education facilities and proximity to Melbourne and Ballarat, an increased awareness in this well preserved mining complex could provide Creswick with excellent educational and tourism opportunities illustrating mining techniques and how mining shaped Victoria's water laws.</p>
Hermes Number	195113
Property Number	

History

Eatons No.1 Dam is located about 500 metres downstream (westward) from Cosgrove Reservoir, built on a rocky choke in the creek bed. The dam is unusual in the district for having been built with a substantial vertical stone facing downstream and a clay embankment on the upstream (water) side. The dam wall is approximately 70 metres long, about 8 metres wide at the base and generally 4-5 metres in height. The top of the dam wall is about 1.5 metres wide and was originally secured with a frame of heavy timbers (*Ballarat Star* 2 July 1862:4). The lowest courses of stone extend outward slightly from the base. Above these the masonry consists of large schist slabs laid horizontally and overlapping, with small rock infill. The central section of the wall features a steeply sloping buttress on the downstream side about 4 metres in height. There is a bye-wash at both ends of the dam wall, and a plan of the dam from John Roycraft's Water Right No. 950 (see below) indicates that water was discharged from the centre of the wall, probably through a pipe and valve.

In '1863 the dam was still under construction when it was damaged by floods, causing £400 worth of damage (*Ballarat Star* 19 October 1863:2; Semmens Collection, Box 7, p.139). The following year its capacity was described as approximately 15 million gallons (68 ML; Dicker 1864:180). In 1869 the dam was flooded again, while the smaller No.2 (Yankee) dam was destroyed (*Creswick Advertiser* 5 December 1933). By the late 19th century Eatons Dam (as well as Bragg's Dam) had become a popular site for picnics, bird watching, shooting parties and fishing (Graham 1987:124; Lindsay, 1965:24; Taylor 1998:29, 72). In 1933, however, the creek flooded and destroyed the dam: Flood started Wednesday 29th November. 6% inches of rain. Waters dissipated quietly after initial flooding. Again those who had been flooded began cleaning up preparations but by 1 pm they were disturbed by the ringing of the firebell.

Quickly the alarm had spread that Eaton's Dam had gone. Hundreds of people hurried down to the creek to watch for the on rush of waters but the alarm was false. Eaton's dam had gone but no one knows exactly when, for reports were most contradictory. Sifting them all through however, it seems that a small piece of the bank must have given way about 6 am and that throughout the day the cut wore deeper. There is ample evidence that at one stage the water was flowing over the embankment for its whole width. One man who went up to investigate reported that at 9 am the bank was still holding but a small hole had appeared in the top and further showers would probably cause the dam to burst. Another person saw the dam on Saturday when it still penned back a huge quantity of water. By Sunday morning however, the cut had eaten down to the bottom of the bank and the creek was flowing the old course (*Creswick Advertiser* 5 December 1933).

Eatons Dam is unusual in its design and construction. The Simplest gravity dams normally consist of a mound of clay heaped across a watercourse, with a roughly symmetrical profile (Smith 1971:195-207). Ideally the clay should be puddled to remove impurities and consolidate the mass, with a central clay core dug down and inserted into bedrock to provide a seal. The dam or embankment provides a physical wall to resist the vertical and horizontal pressure exerted by the depth of water stored behind. The profile of Eatons Dam, however, lacks the downstream (air side) clay mass to provide resistance. Instead, the clay is banked on the upstream (water) side against a stacked stone facing or retaining wall, providing only about half the mass normally found in a gravity dam wall. Hydrologist Leon Bren suggests this may have been a simple measure to economise on construction costs (L. Bren pers comm. 20 August 2012).

The Eatons utilised a water race which extended two miles (169 chains, or 3.4 km) downstream from their dam along the south side of Creswick (Back) Creek to Portuguese Flat via Lincoln Gully. Much of the area has been extremely disturbed by surface working over the years, which has destroyed some sections of the race. The archaeologically identifiable sections are recorded below in Figure 11. This race was held as Water-Rights License No.2 (the 2nd to be issued in Victoria), and appears to have been leased jointly by Benjamin Eaton and John Roycraft. The pair applied successfully for another license (No.30) to the race and reservoir in 1865 (*Government Gazette* 16 April 1866:818-19). In 1879, at the expiry of the No.30 license, Roycraft obtained another 15-year water-rights license (No.414), this time without the Eatons' involvement. The license specified a total quantity of water to be diverted *per diem* of 2 million gallons (Mineral Statistics of Victoria 1884:54). Roycraft renewed Water Right No.414 in 1894, which was renumbered No.701 (VPRS 7873/P/0001, Unit 1), as well as gaining a permit to sell surplus water from the race (VPRS 5936).

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