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## ARCHAEOLOGY IN NEW ZEALAND



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THE PIAKO COUNTY COUNCIL TRAMWAY (SITE T13/108):A PRELIMINARY DESCRIPTION

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The Waiorongomai Valley is situated in the Kaimai-Mamaku Ranges approximately four kilometres east of Te Aroha township. The valley climbs steeply for 4.5 kilometres to a height of 700 metres along the eastern side of Mount Te Aroha.

The Waiorongomai Valley contains remnants of historical gold-mining activity. Mining occurred on the western slope of the valley from the 1880s to the 1940s, based on the exploitation of the various off-shoots of the extensive Buck Reef, the main quartz reef which runs along the length of the valley.

Of particular significance in the Waiorongomai gold-mining landscape is a well preserved example of a tramway. Between the 1880s and 1910s it was a means of conveying ore from mine workings high on the valley slopes to the four batteries located in the valley. The main tramline, known as the Piako County Council tramway, ran the length of the valley. At different times, the Bendigo, Ferguson and the New Find-Three Fools branch lines connected to the central Piako County Council tramline. A variety of methods was used to get ore from the mines to hopper on the tramway, including narrower gauge tramways for mine trucks, aerial tramways and chutes. For example, on the New Find property, there are four levels of benches for mine trucks side-cut across the Diamond gully hillside between mine adits and a chute. This chute falls downhill to the property's hopper situated on the New-Find Fools branch line.

A Brief History

The survey for the Piako County Council tramway had been completed by September 1882 (Thames Advertiser, 30 September 1882, p.3, col.3), eleven months after prospector Hone Werahika took up the first claim in the Waiorongomai Valley called the New Find. A.G. Matheson (1978:34-40) states in his History of the Waiorongomai Goldfield:

"To connect the many claims with the (Waiorongomai) battery, the Piako County Council was persuaded by the Battery Co. and others to build a tramway, and a Mr Stewart and his surveying party spent three months of 1882 preparing plans and specifications. Construction commenced in November of that year, and the line started operating on

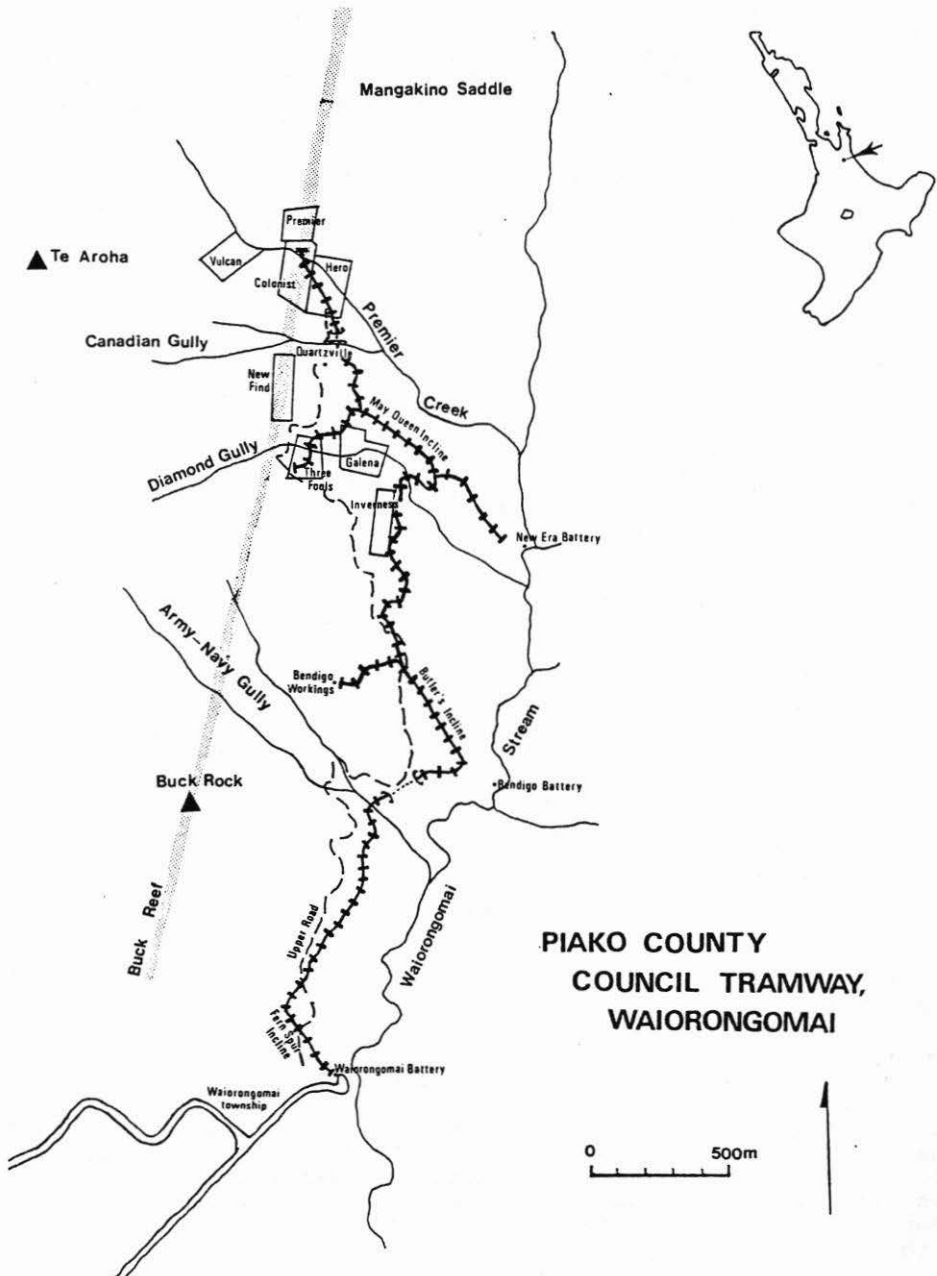


Figure 1. An above ground hauling system, Waiorongomai Valley goldfield, based on the use of gravity and horses.

November 1st, 1983. The final cost was about \$18,000, the Government contributing \$9,000 and the use of 156 tons of iron rails. The tramway was a little over three miles long ...falling a total distance of 1,400 ft."

The tramway went as far as the Hero property (north of and near Canadian Creek) circa 1884 (Map of Licensed Claims, Te Aroha, Geological Survey, Otago). The full length of the tramway was evidently last used in June 1910 when Hardy's Mines, Limited took down a half ton of sample ore from its mines to the battery at Waiorongomai (National Archives, MD N21/2/4 No.1 of 10 June 1918). In 1918 the Piako County Council, which had been maintaining the tramway, sought to uplift rails from the tramway for use at its quarrying operations in the Waiorongomai Valley (National Archives, MD N21/2/4 No.1 et seq.). The application was declined on a submission from the Bendigo Gold Mining Company and on the Inspector of Mines's (Matthew Paul) recommendation. A revival in Waiorongomai mining (which would not take place) was anticipated once the First World War had ended. The Bendigo Gold Mining Company was using the Bendigo branch line and Butler's Incline at this time to transport ore to its battery. The Company's tramline plant comprised 23 trucks of 32 cubic feet capacity. The Mines Department was prompted into financing basic maintenance of the tramway between 1919 and the mid-1920s, with some input received from the Piako County Council (the Mines Department had offered to take control of the tramway, but the County Council decided not to concede its interest). By 1932, J.F. Downey, Inspector of Mines, in response to the idea of putting the neglected Piako County Council tramway in repair again, saw the concept as being redundant. He maintained that companies would instal an aerial tramway down the valley which would enable ore to be transported at much less cost. E.J. Scoble, Inspector of Mines, reported for June 1942 that upon inspecting the lower end of the "Waiorongomai tramway", he had found all rails dismantled and removed.

### Description

The Piako County Council tramway extends from above the Waiorongomai Battery site to above the north bank of Premier Creek (Fig. 1). It follows the contours around the hillslopes along the west side of the Waiorongomai Valley for two miles 47 chains (National Archives, MD N21/24 No.1 of 25 July 1918). Along the tramway's formation there are deep block-cuttings, tunnels, embankments and a trestle bridge. A feature of the route is three self-acting jigs, where descending full trucks with ore pulled empty trucks uphill.

The gauge of the tramline is 2 feet 9 inches (0.840 metres). The flanged rails are 40 lbs to the yard up to the

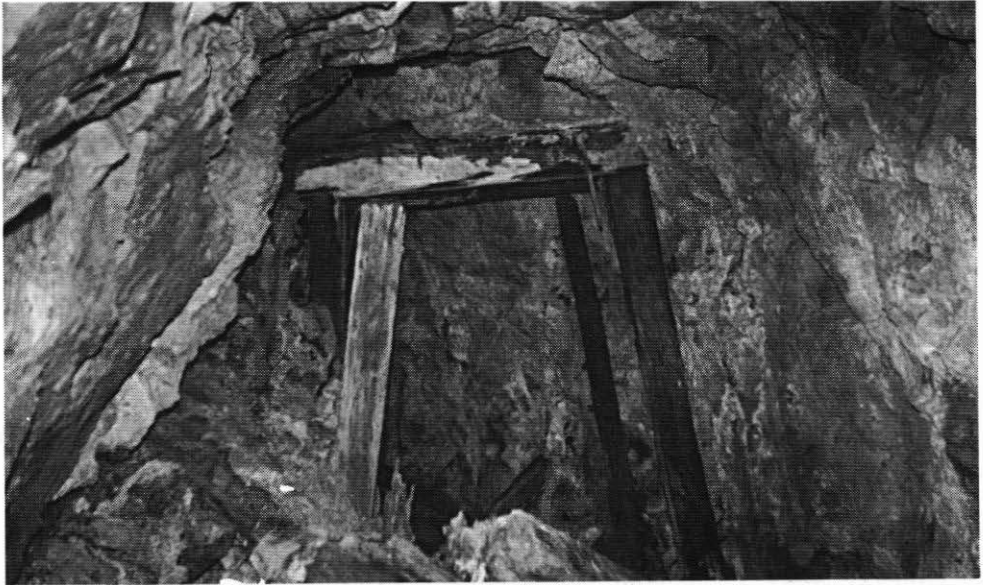


Figure 2. Splayed props inside the lower tunnel on the tramway's route.



Figure 3. Looking south: point lever (left corner) for the Bendigo Battery siding. "Workshops NZR Auckland" is embossed on the lever.

May Queen Incline (National Archives, MD N21/2/4 No.1 of 25 July 1918). Beyond this third incline rails 30 lbs to the yard have been laid, although Downey stated that they are 24 lbs (National Archives, MD N21/2/4 No.1 of 25 July 1932). The rails are joined with fishplates, and spiked to wooden sleepers. The sleepers are visible only intermittently along the debris-covered route. The distance between sleepers is approximately 1 metre, but this spacing can vary. A dislocated sleeper found on the second level measured 1.48 metres long by 0.130 metres wide by 0.090 metres thick.

The following description goes from the Waiorongomai Battery site to the tramway's terminus at Premier Creek (see Figs. 2-5):

(i) There is a 32 metre long side-cutting between Fern Spur Incline and the Waiorongomai Battery site. Fern Spur Incline is 12 chains long (National Archives, MD N21/2/4 No.1 of 8 April 1915). The rails have been uplifted from this line, but a point lies in a paddock near the base of the incline. The base of the first incline is a block-cutting 4.3 metres wide. Further uphill, beyond the block-cutting, the incline's route becomes indistinct and the area is presently covered in thick gorse. A road, which linked Waiorongomai township to the mining camp of Quartzville, crosses the incline route. From the head of Fern Spur, the first level remains overgrown and impassable in places up to the vicinity of the tunnel. It is not known whether any winding gear survives at the head of Fern Spur Incline. An impressive trestle bridge can be expected to have been built over the Army-Navy Creek, although no sign of it remains. Paul reported in 1918:

"For the whole distance this tramway is overgrown with gorse which I understand was planted in the early days to keep the cuttings from slipping. In some places it has grown to a height of five feet, making an accurate inspection of rails, ropes and sleepers, difficult."  
(National Archives, MD N21/2/4 No.1 of 25 July 1918)

(ii) Butler's Incline: The formation widens at the base of Butler's Incline to accommodate a loop and siding. This section is 4.5 metres to 5.3 metres wide and 78.7 metres long. Three complete points remain *in situ*, one for the Bendigo Battery siding and two for the loop at the incline base. The point lever remains intact on the Bendigo Battery point. This is the most complete surviving layout at the base of the three inclines along the tramway route.

Butler's Incline is 22 chains long (National Archives MD N21/2/4 No.1 of 8 April 1915) and is inclined at an angle of an estimated 25 degrees (P. Mahoney, personal communication). The



Figure 4. Stanchions placed across Diamond Creek crossing.



Figure 5. Butler's Incline brake and winding gear.



route is made up of block-cuttings approximately 3.4 metres to 3.8 metres wide, and two embankments, varying 3.6 metres to 4.5 metres wide on top. The depth of cutting lessens as the course progresses uphill. The mid-point passing loop is on an embankment. The distance between sleepers on the incline varies between 0.8 metres and 1 metre. Towards the head of the incline sleepers are usually placed together in pairs. The Upper Road crosses under this incline towards the top. Above here, rails have been uplifted. Near the incline's summit the formation widens to approximately 5.1 metres. Wire rope lies on the incline floor. Some rails and the collapsed brake and winding gear are still visible at the head. The formation widens to 11.2 metres in a side-cutting, to incorporate the loop and Bendigo branch line. Rails in this area have been lifted also, although one point-switch can be still seen.

Along the second level there are 24 curves and three creek crossings. There are several shallow block-cuttings, otherwise the tramline goes along a bench. The formation width varies through subsidence, slipping and root disturbance, but averages 2.6 metres. Rails are still intact along much of this level. Hoppers built below the Inverness and Galena mines stood along this level. The bench broadens to approximately 7 metres for 38 metres at the junctions of the Ferguson branch line, which served the New Era Battery and Reduction Works.

(iii) May Queen Incline: The base is a block-cutting 4.7 metres to 6.5 metres wide. This incline is 18 chains long (National Archives, MD N21/2/4 No.1 of 8 April 1915) and is of easier gradient than the lower inclines. It is formed of block-cutting, embankments and some side-cutting. The rails are still in situ. The only surviving trestle bridge on the tramway can be seen along this incline. The 19.8 metre long kauri bridge has on it part of the passing loop. Wire rope lies on the incline floor. The track layout and collapsed brake and winding gear for the incline survive at the May Queen Incline head. The third level tramway and the New Find-Three Fools branch line converge here. The loop at the top of the incline is on a bench 4.8 metres to 6.4 metres wide and approximately 20.3 metres long. The track is presently buried, but appears to be intact with one point visible.

The upper level continues to the Premier hopper, which is the tramway terminus. Side-cutting 2.3 metres to 3.2 metres wide predominates, with some shallow block-cutting. There is 15 curves and four creek crossings. Another tunnel 25 metres long is intact and can be walked through, despite some internal collapsing. The tunnel's south portal is 2.2 metres wide by 2.5 metres high. The tunnel curves underground 10 metres in from the south portal. Its north portal is 1.9 metres wide by 2.5 metres high. The bench widens to 5 metres south of Premier Creek for approximately 15 metres, then narrows to 3.4 metres



before the Premier Creek crossing. Several uprights and other timbering appear from a landslip and parataniwha on a narrow bench on the Premier Creek's north bank, and indicate the tramway's terminus. The Piako County Council tramway serviced the Premier, Colonist, Hero and Vulcan hoppers on the third level.

#### Acknowledgements

This paper is an outcome of an industrial archaeological survey of historical gold-mining sites in the Waiorongomai Valley, in the Kaimai-Mamaku State Forest Park, carried out by the writer in 1986-87 for the New Zealand Forest Service.

My thanks to Mr Alistair Isdale and Mr Paul Mahoney for critically reading the draft.

The map is based on one which appears on page 8 in Guide to the Waiorongomai Valley, Kaimai-Mamaku State Forest Park, and has been used with permission, Department of Conservation.

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