

Leak in a wood stave pipe, c1950



Description

This is a black-and-white photograph showing a leak in a section of wooden pipe in the pipeline supplying water to Western Australia's eastern gold fields. The photograph measures 5.4 cm x 5.3 cm.

Educational value

- This wooden pipe was used at one time in the Coolgardie Water Supply Scheme, a 560-km pipeline that has been delivering water to WA's inhospitable gold fields since 1903. The Scheme was an engineering feat that attracted worldwide attention at the time, and has subsequently been declared an Australian national engineering landmark.
- In the 1890s, prospectors rushed to what became known as Coolgardie and Kalgoorlie following rich gold discoveries, with many literally dying of thirst in the arid gold fields, or from diseases spread by lack of sanitation and clean water. Water was also needed so the gold mining industry could develop. Attempts to obtain water from local underground sources and dams proved unsustainable and finally a pipeline was built from a dam to the east of Perth.
- Wooden pipes were used to save the pipeline when it seemed that it would no longer be able to operate due to leaks caused by corrosion. By 1932-33, a quarter of the water being pumped from Mundaring Weir, 1.7 million cubic m, was being lost along the route. The Western Australian Government made refurbishment of the pipeline a priority in order to save the Scheme and to create jobs for the unemployed during the Great Depression. The pipeline was lifted out of its trench and relaid above ground, clear of wet and corrosive soils. Sections of the steel pipeline were so badly corroded they had to be replaced, particularly in areas where there was high soil salinity. Between 1933 and 1937, 64 km of wood stave pipes were installed in low-pressure sections of the pipeline.



Categories: The Pipes

- Wooden pipes were made from random lengths of karri timber that were shaped into staves measuring 12.7 cm by 3.2 cm (similar to those of a wine barrel). Strong galvanised steel wire was bound around the staves and secured with staples. The pipes were then heavily coated with bitumen and rolled in clean sand and the various sections joined with steel collars. It took a few days for the pipes to 'proof', or swell, because of the moisture. The gaps between the planks were filled by this swelling and the pipes became leak-proof. Remnants in the form of rotting staves and coils of the wire that bound them are still evident today on many stretches of the pipeline's route between Southern Cross and Kalgoorlie.
- At the height of the Great Depression, which affected the entire developed world in the 1930s, the Western Australian Government was under pressure to use wood stave pipes, not only to repair the pipeline but also to help stimulate the local economy, including the timber industry, and to create jobs. It was cheaper to use a ready supply of local timber than to import expensive materials such as steel. The manufacturers lobbied state government ministers and made the use of wooden pipes a political issue. Factory workers and even their families became involved, writing to the Minister of Water Supply and describing how difficult life was without a regular income.
- Although the wood stave pipes were even more prone to damage than steel pipes, leakage was the prime reason for the Goldfields Water Supply Department discontinuing their use, despite continuing pressure in the 1930s to use them. Although these pipes were laid on supports above ground, termites attacked them and leaks were caused by the staves drying out and by breaks in the wire binding. Wild donkeys were also said to kick holes in the timber pipes to get at the water within. Although relatively uncommon, vehicle accidents also resulted in major leaks, because a car hitting a wooden pipe caused much more damage than it would to a steel pipe. Despite their unsuitability, the last wooden pipes were only replaced in 1971.

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