Condenser, c1900

Description

This is a photographic print, measuring 17 cm x 12 cm, showing seven men and a woman (wearing a bonnet and carrying a waterbag) at a condensing plant set up alongside a well. The pipes, boiler and storage tank of the condenser are all clearly visible. One of the men is engaged in extracting water from the well and a second is working on the ash pile. A horse is harnessed to a dray loaded with timber and there is another loaded dray and two further stacks of timber at one side. The photograph was taken in about 1900.

Educational value

- This asset depicts one method of obtaining water on the gold fields - mining centres relied heavily on distilled saline or brackish water; dams were unreliable due to low rainfall and high evaporation rates, so water was obtained from underground or salt lakes until 1903 when the 560-km Coolgardie Water Supply pipeline finally provided a dependable constant source of water at a reasonable cost; on 26 January 1903, the 'Kalgoorlie Miner' carried a story about the pipeline's opening two days earlier, next to an advertisement for the sale of equipment from a large commercial condensing operation.
- It illustrates the relationship between underground water supplies and condensing plants - a condensing plant was usually set up directly alongside a well; practically all underground water in the gold fields was saline, so it was boiled and the resulting steam collected and condensed into potable if not palatable water; in 1896, only three of the 22 wells in Coolgardie produced a small quantity of fresh water which was already diminishing and becoming brackish.
- It shows the mechanism used to get water from the well - one of the men is turning a handle to raise the bucket emerging from the mouth of the well; the bucket is attached to a rope coiled around a windlass above the shaft; this man may be the owner or caretaker for this water treatment plant, as a hessian home is evident in the background.

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GOLD AND WATER

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- It reveals the large amount of timber used for construction and fuel in condensing operations - lengths of wood are stacked next to the condenser to be burned to provide the heat to boil the saline water, while two extra wagonloads of timber await unloading; the pile in the centre of the photograph is probably a pile of ash from the timber burned in the brick furnace under the saline water tank; timber poles have been used to shore up the shaft of the well and forked branches are supporting the pipe that directs the steam away from the heat.
- It illustrates the three basic processes used in converting saline water to fresh water - the processes are boiling saline water, collecting the resulting steam and condensing it back into a liquid form; a fire is set under the large square tank in which the saline water is boiled, steam rises through the funnel at the top and is directed, through lengths of pipe joined together, into the circular corrugated iron tank as condensed fresh water; without distillation of salt water, the gold fields could not have been established; the total number of condensers over the field of all kinds and sizes cannot be estimated.
- It is evidence of the accuracy of a first-hand description from the period of use of a condenser - in 1895 prospector John Aspinall travelled east along the track to the gold fields and described such condensers, 'The condensers usually consist of two square 200-gallon [910-L] iron tanks built with a sort of oven underneath. A pipe 5 or 6 inches [12.5-15 cm] in diameter and about 60 feet [18.3 m] long leads from each tank, being doubled back with a bend so that the end comes back close to the tank. The steam gets cooled going along the pipe and the water drips from the pipe into a galvanised iron tank'.
- It includes a woman in the photograph, which is unusual - the overwhelming majority of photographs of the time on the gold fields do not have women in them; one of the reasons for so few women on the gold fields in the early days was the harsh conditions, and the shortage of water was the main contributor to these; letters from men living on the gold fields at the time regularly mention the lack of water and problems associated with it; engineer William de Mole wrote in May 1896 to his wife in Melbourne about the prohibitive cost of water and how worried he would be about their children contracting typhoid if they moved to the fields.

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