



# STORIES IN THE PIPELINE



# Stories in the Pipeline - Public Research Project

Prepared by H+H Architects on behalf of Water Corporation.

## Acknowledgement of Country

We acknowledge the First Nations People of the land on which we live, work and create. We pay our respect to elders past, present and emerging.

We celebrate and embrace their continuing connection to land, water and community.

Aboriginal and Torres Strait Islander People are warned that this document may contain photographs and images of people who have died.

## Document Control

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*Cover images, clockwise from left: Pipeline in landscape, 2023; Reproduction plate of the well-known western marching ditty of the Coolgardie goldfields in the 1890s made by Vic Dale; Feature window at No. 3 Pump Station; Local names on pipe at Meckering; Overland water flume at Karalee Rocks.*



## *Background & Project Overview*

The National heritage-listed Goldfields Water Supply Scheme (GWSS) is an operational inter-basin transfer water system extending 566kms from Mundaring Weir in the Perth hills and terminating in Kalgoorlie-Boulder in the eastern Goldfields region of Western Australia.

WA Water Corporation is responsible for the ongoing operation and maintenance of the main conduit of the GWSS. Two non-operational Pump Stations (No. 1 and No. 8) are vested with the National Trust of Australia (WA) and two (No. 3 and No. 4) are jointly vested with NTWA and local governments.

Water Corporation has identified that sections of the main conduit are reaching the end of their service life and is preparing to upgrade the pipeline by removing the extant above-ground pipeline and installing new pipe below ground, progressively over the next 70 years.

Water Corporation has received Commonwealth approval under the EPBC Act to undertake the GWSS Project and as part of the conditions of this approval, are required to take measures to manage, interpret and record the impacts of this work on the National heritage values.

H+H Architects were engaged by Water Corporation to undertake a Public Research Project to identify the community history and memory associated with the Goldfields Water Supply Scheme, in accordance with the conditions of the EPBC Act referral.

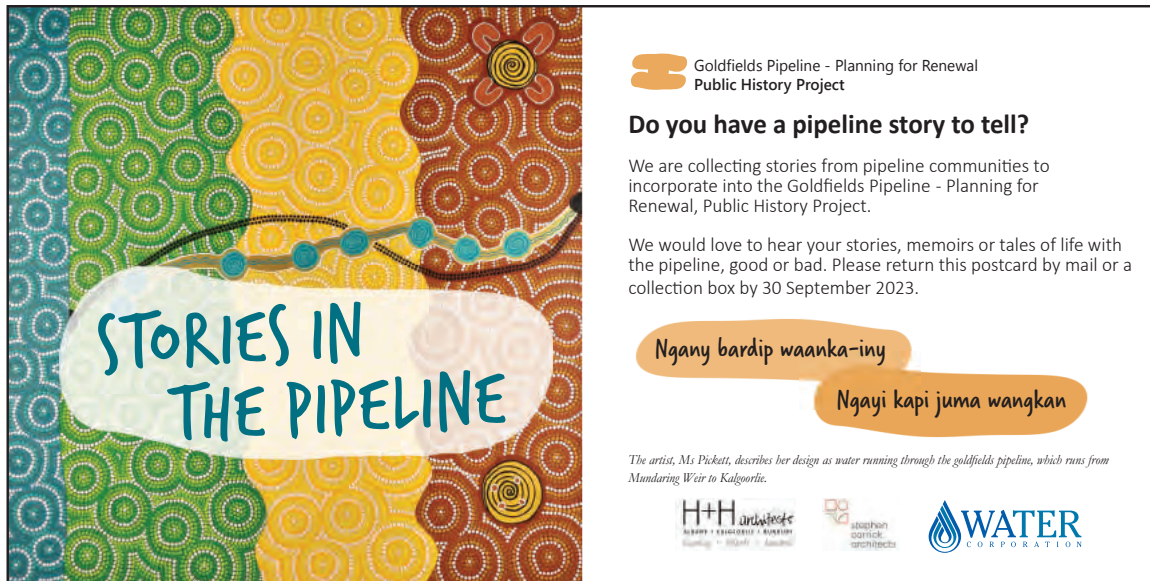
The scope of this community engagement has been to consider the recognised National Heritage values of the place, but also take into account other elements of community significance, in particular Aboriginal community cultural significance around and associated with the main conduit. There are numerous registered Aboriginal cultural heritage sites in close proximity to the GWSS pipeline, and these include corroboree grounds and water sources associated with trade routes, wells and gnamma holes, granite outcrops, birthing rocks, cave and rock paintings as well as a number of secret/scared sites. The intent of this Research Project is to capture all the 'water stories' that are associated with the Pipeline and the Goldfields Water Supply Scheme, acknowledging the varied meanings that this engineered water system holds for the community of Western Australia, and how these meanings might be retained and interpreted over the next 70 years as the main conduit is once again buried underground.

# Methodology

In consultation with Water Corporation, H+H Architects and their sub-consultants, Jouerdine Consultancy and Goldfields Aboriginal Language Centre Aboriginal Corporation, developed a community engagement strategy which was focused on pro-actively seeking submissions and stories from around the State, with targeted consultation to maximise engagement with a wide variety of people and organisations who have an association with the GWSS and the Pipeline.

The team utilized a variety of engagement methods, which ultimately aimed to attract submissions using a range of different mediums to suit the varied demographics of the general public. The engagement was undertaken over the month of September in 2023 and can be summarized as follows:

- Customised printed and electronic posters and flyers advertising “Stories in the Pipeline” public research project and inviting public contributions, distributed to all local governments along the Pipeline, and displayed in Shire offices, Visitor Centres, Libraries and Community Resource Centres as well as participating shopfronts. Local Govts were asked to share the electronic posters and flyers through their community newsletters.
- Advertisement placed in West Australian Newspaper, “Can You Help” section, inviting submissions from the general public.
- Customised printed postcards with nominated postcard delivery boxes held at locations in Mundaring, Northam, Meckering, Cunderdin, Tammin, Kellerberrin, Doodlakine, Merredin, Westonia, Mukinbudin, Bruce Rock, Moorine Rock, Southern Cross, Coolgardie, Kalgoorlie and Boulder.
- Online submission portal and designated email inbox hosted by H+H Architects to allow electronic submission of stories, pictures, etc.
- Early morning radio interview by Eddie Smith from the ABC Breakfast program with Project Director, Julie de Jong, allowing “talk-back” style engagement on-air with listeners and inviting people to contribute their stories through the postcards or online portals.
- Personalised email correspondence from consultant to all local Government CEO’s and Shire Presidents/Mayors along the Pipeline inviting them to participate in the project and engage with the community research project.
- Week-long “roadshow” conducted by three community engagement personnel travelling eastward from Mundaring to Kalgoorlie-Boulder during September 2023 including pre-publicised visits to local community hubs situated along the Pipeline to facilitate casual and informal meetings and interviews.
- In-person interview with journalist from *Kalgoorlie Miner* newspaper and subsequent article inviting contributions from readership.
- Targeted meetings and interviews with key community members with an established association with the Pipeline and the GWSS, including members of local Historical Societies and descendants of former employees.
- Visit and tour of No. 1 Pump Station Museum with NTWA personnel and volunteers.
- Visit and tour of No. 3 Pump Station Museum, including meeting with Museum manager and volunteers, as well as the Cunderdin Men’s Shed (who are co-located on the site) and the local Sit & Sew Club who attended on the day.



- Visit to Bilya Koort Boodja, Aboriginal Cultural Centre in Northam and meetings with local Aboriginal people.
- Visit to Westonia Museum.
- Morning tea hosted by Eastern Goldfields Historical Society with local history enthusiasts, volunteers and residents from the local aged-care home to share stories and memories of the Pipeline.
- Opportunistic and invited in-person meetings with individuals and community groups in each town along the Pipeline.
- Onsite walk-overs and yarning “on country” with Aboriginal elders.
- In-class sessions conducted with local students at Cunderdin District High School, Southern Cross District High School as well as teacher-led Pipeline activities contributed by West Northam Primary School. These activities included artistic and literary activities to allow contributions by youth.
- Fabric canvas with Pipeline motifs allowing to record a range of handwritten contributions and signatures of people the consultants met on the Pipeline “roadshow.”
- Pro-active research and investigation of ‘leads’ to pursue stories and narratives that were revealed along the way, often with follow-up interviews.
- In-house invitation to current Water Corporation personnel encouraging them to participate in the project and share with their network.
- In-house workshop conducted by Water Corporation with Water Corporation staff to discuss the scope of the Project and the future plans for the Pipeline.

During the month-long consultation period, H+H Architects received many submissions and leads from the general public, some of whom also shared their memorabilia, family photos and newspaper clippings delivered to H+H locations in Albany, Bunbury and Kalgoorlie. Follow-up interviews were conducted either remotely or in person by the consultant team, to ensure that we captured as many personal stories as possible. All information collected as part of the project and reproduced in this document was subject to declarations of informed consent to use the information supplied as part of this Public Research Project.

As well as the work undertaken by H+H Architects and Jouerdine Consultancy during the 'roadshow' phase, GALAC also undertook some targeted consultative workshops and meetings with representative groups who hold knowledge to encourage sharing and truth-telling. This consultation extended beyond the main conduit, to communities serviced by secondary lines of the GWSS in the outer Goldfields, including Norseman. All engagements with Aboriginal people was undertaken in accordance with GALAC's Truth Telling Policy, ensuring that those individuals and families who share stories and memories do so with informed consent and the support of Elders and knowledge-holders.

The work of the team undertaking community engagement was supported by a research team, who assisted in framing the historical context of the GWSS, as well as fact-checking and general research, particularly where stories varied from the public record. The text was written jointly by Murray Arnold and Julie de Jong, with internal review and editing undertaken by the remainder of the team.

This document records the contributions of the community, and many interviews and submissions were based on personal oral history, remembered stories and likely some family folklore. These contributions should be read in the spirit in which they were received – for the meanings and memories they convey, if not always their technical accuracy.



Delivering Postcards and submission box to Bilya Koort Boodja



Engagement at Northam Visitor Centre



Sit & Sew Ladies at No. 3 Pump Station



Kurrawang Christian Community, former Woodline town



Community engagement at Westonia Shire

## Study Team

The Public Research Project was delivered by H+H Architects and their sub-consultants, Jouerdine Consultancy and Goldfields Aboriginal Language Centre Aboriginal Corporation. The process of sourcing and developing the content was collaborative and involved the sharing of knowledge and tasks to optimize the outcomes.

The Study Team for this project is summarized as follows:

### H+H Architects

- Julie de Jong – Project Director, community engagement, report content & research
- Jessica Dobson – Graphic design, community engagement, research & report publication
- Emily Price & Declan Hayward – research & project support

### Jouerdine Consultancy

- Briony Arnold – Community engagement lead, report content & research
- Murray Arnold – report content & research
- Carolyn Willshire – community engagement & report content
- Suzie Sprigg – research

### Goldfields Aboriginal Language Centre Aboriginal Corporation

- Sue Hanson – Community engagement, report content & research

Julie de Jong, Carolyn Willshire & Briony Arnold





## Acknowledgements

The preparation of this Public Research Project was greatly assisted by contributions from the following organisations and individuals:

- National Trust of WA, particularly Diana Frylinck
- Les Schultz
- Brian Champion
- Rosie Stroud and the Eastern Goldfields Historical Society

Please also refer to the end of the document for a full list of public contributions and support received for the Project.



## Nomenclature

It should be noted that the Goldfields Water Supply Scheme was originally known as the Coolgardie Water Supply Scheme in its early days of planning, design and construction, but for clarity and to better represent the full extent of the Scheme, we use “Goldfields”, as it was known at the time of commissioning.

The WA Water Corporation was originally known as the Public Works Department, then the Water Authority, before its current day title. In quoting the public, we have used the names that they used, and where we have included historical information, we used the names that were used at the time.

The Pipeline is also known as the Main Conduit, the ‘line and the Golden Pipeline.

### Note on Spelling of First Nations Words

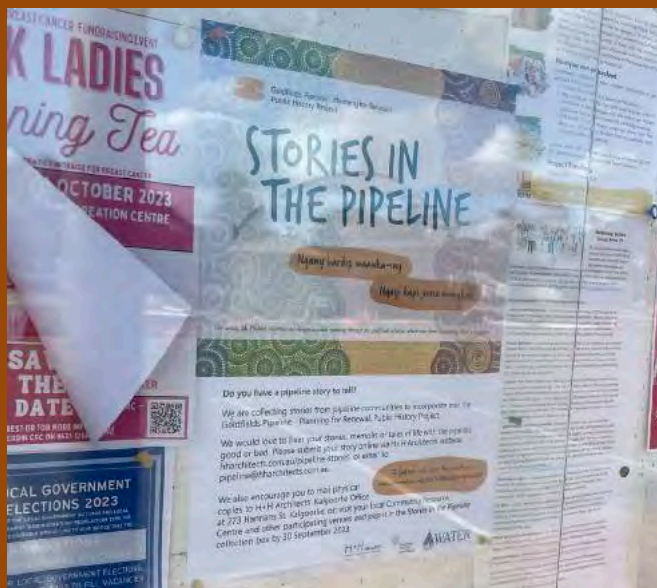
Each Australian First Nation language uses a spelling system suited to that particular language's sound system. This means that words may be seen to be spelt differently when they come from different languages. Spelling systems in WA have been standardised by the First Nations for their language, and it is important that the standardised system is respected. If you are not sure of the standardised spelling system for a First Nation's language, contact your regional Aboriginal language centre to find out the standardised spelling system. The Goldfields Aboriginal Language Centre Aboriginal Corporation have provided the spelling of First Nations language used throughout this report.



Kalgoorlie Miner Article, September 9, 2023.




Carolyn and Briony at Southern Cross DHS



Poster on display in Cunderdin.



West Australian News - Can You Help Pages



## Introduction

For more than 120 years, generations of Western Australians have grown up with the Goldfields Pipeline. At the time of its completion in early 1903 it was the world's longest overland pipeline with more steel used in its construction than in any other structure on Earth<sup>1</sup>, and even today it is regarded as a great engineering achievement. C Y O'Connor, the engineer in charge of the project, as well as Lord John Forrest, the State's Premier who led the visionary project, are well recognised in the history of the State for their association with the impacts of the Goldfields Water Supply Scheme.

Today, the pipeline continues to supply water to communities throughout WA's Wheatbelt and Eastern Goldfields regions and is highly valued by West Australians as well as people visiting the State with an interest in history and engineering. The Goldfields Water Supply Scheme is valued by people who rely on the water supply for their everyday lives, as well as by groups in the community who value the pipeline as a landmark historic structure and engineering achievement. The pipeline is a recognised heritage place with exceptional aesthetic, historic, social and scientific values that are protected at State and Commonwealth levels through its inclusion on the National Heritage List and the State Register of Heritage Places. This public research project, Stories in the Pipeline, was developed to better understand the strong or special meanings that the pipeline holds for everyday individuals and groups in the community because of these social, historic and cultural associations.

## Early Water Stories – before the Goldfields Water Supply Scheme

The main conduit of the Goldfields Water Supply Scheme travels eastward across the Noongar Nation, though the clan group lands of the Wadjak, Baladong and Ngaji-Ngadjji peoples. It then crosses the border to the Kaprun Nation for the final third of its length, before reaching Karlkurla, the traditional name of Kalgoorlie.

A number of Dreamtime stories pass over the Pipeline including the *Wati Kutjarra Tjukurrpa* (Two Men's Dreaming) and the *Karlkurla Tjukurrpa* (Silky Pear Dreaming). These stories contain information about finding water sources in the Kalgoorlie region and many of the locations mentioned in each Dreaming are gnamma holes, soaks and springs. The *Mingiwa Tjukurrpa* (Echidna Dreaming) passes through the Coolgardie region and this water story centres around local landmark Mt Burgess and a number of gnamma holes and water sources. The *jila* or *pimira* (water snake) in each water source represents an important aspect of Aboriginal people's ceremonial and physical obligations to care for these water sources<sup>2</sup>. Stories abound of the water sources drying up when the water snake was disturbed by destructive activities that affected these natural water sources when colonial settlers and surveyors began to penetrate the inland from the 1840s onwards, including the blasting of gnamma holes and bricking up of springs to form wells.

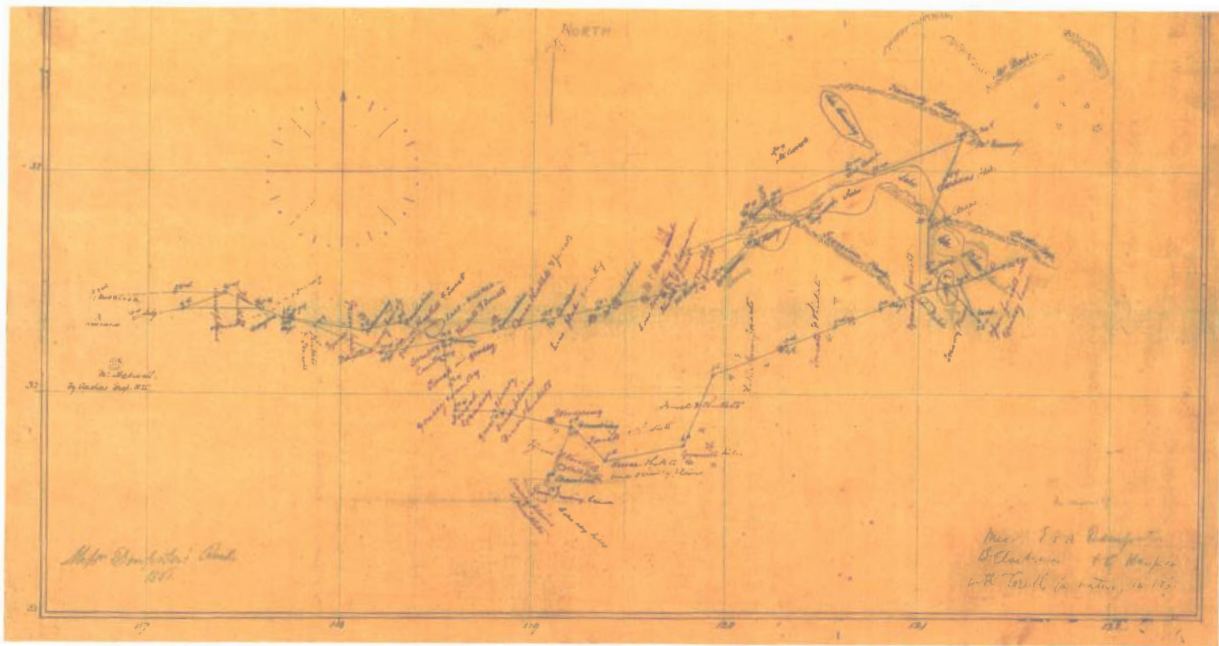
Similarly, the Ngadju people's *Yuntarn Tukurrpa* (Yellow Goanna Dreaming) and *Kurlanj Tukurrpa* (Black Goanna Dreaming) crosses the pipeline. This story is about salt lakes in the region, from south of Widgiemooltha, Lake Lefroy and westward. The Norseman Pipeline, a secondary branch off the main conduit of the Goldfields Water Supply Scheme, is also important for many Aboriginal people of this region and has been encompassed into dreaming stories about water.



Excerpt of painting by Allison Dimer of the Echidna Dreaming

Page opposite: Excerpt of painting by Allison Dimer, showing the pimira (water snake).





Map of "Messrs. Dempsters' Route 1861", held by the State Records Office Perth, and also republished in *Expedition Eastward from Northam by the Dempster brothers, Clarkson, Harper and Correll, July-August 1861* by Lesley Brooker.

For decades after the establishment of Perth in 1829, the Eastern Goldfields remained unknown territory to the colonial settlers. In July 1830 Ensign Robert Dale explored as far as York, and in October of that year he pushed out to Mt Stirling on the western fringe of Bruce Rock. Six years later, JS Roe reached what is now Narembeen – the eastern extent of exploration until 25 years later when Dempster, Clarkson and Harper’s expedition pushed further out to 100 kilometres north of Southern Cross in 1861. Two years later, HM Lefroy led the first European expedition to venture onto the Aboriginal lands of the Hampton Plains where Coolgardie and Kalgoorlie are now situated. The full length of the country through which the pipeline would later be built was finally, if patchily, explored by Europeans employing Aboriginal guides. The aim of these expeditions was to find large tracts of land suited to the running of sheep and cattle<sup>3</sup>. The explorers, disappointed by the minimal stock carrying capacity of the low rainfall bushland, would have been greatly surprised and gratified in later years to find that their actual role in history would be as pioneers of the route to the enormously rich Eastern Goldfields.

Over the following two years a government party led by Charles Hunt built a series of 26 wells, dams and tanks – frequently based on Aboriginal soaks and gnamma holes – between Cunderdin and the region later to become known as the Eastern Goldfields. This water route facilitated further European exploration for pastoral land. The party included six pensioner soldiers, 11 probationary prisoners and an Aboriginal guide<sup>4</sup>.

This line of water sources, and the track wide enough for a wagon that Hunt’s party cleared, formed the basis of the earliest route taken by gold prospectors. Eventually, the pipeline, the main road to Kalgoorlie and the transcontinental railway would follow along Hunt’s track for over 230 kilometres. Hunt’s mapping of water sources allowed prospectors to move eastwards from Southern Cross where gold had been discovered in early 1888. It would be difficult to exaggerate his importance in the story of the opening up of the Eastern Goldfields region, and his legacy is still valued by the community today.<sup>5</sup>



Karalee Rocks, natural water catchment.



Karalee Rocks, diversion walls installed along edge of original gutter used by Aboriginal people.

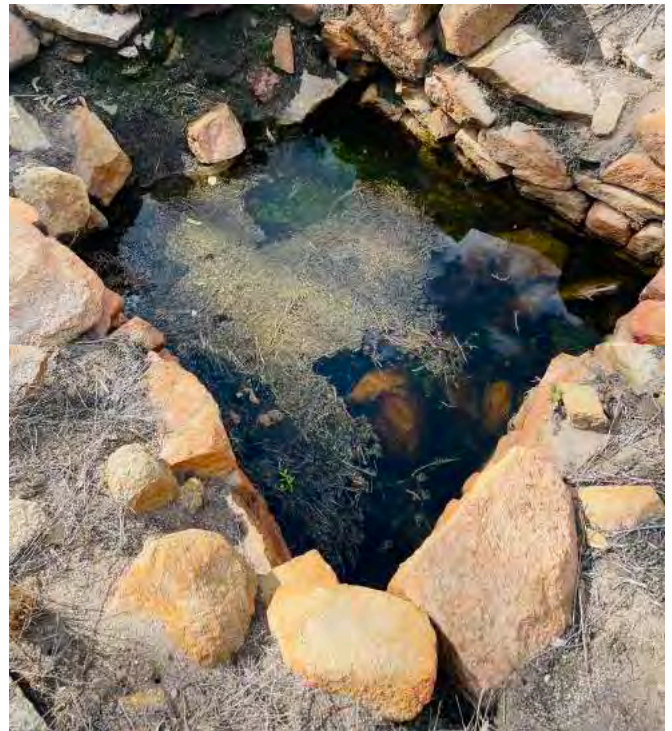
Well before the Goldfields Water Supply Scheme was introduced to provide fresh water to Coolgardie (and eventually to Kalgoorlie), water farming was undertaken by Aboriginal people to supply the needs of their communities. Whilst the Noongar country around Darling Scarp benefited from relatively high rainfall and river systems like the Avon (known as *Gogulgar* waterways by the Baladong people), inland regions relied on underground water systems and overland catchments. Karalee Rock was a major Aboriginal water farm where a gutter carved around the base of the rock diverted water into a number of soaks. This site was permanently modified during the late 1880s and early 1890s as part of the construction of the Government railway, with vast sections of the rock cut to create a larger channel which diverted greater quantities of water through an overland flume and into a railway storage dam.<sup>6</sup> Not only did this modification damage the traditional Karalee Rock water farm, it also caused soaks fed by the Rock to dry up, ‘and the *jila* left’.

Railway storage dams are found in many locations along the Pipeline and are often intertwined with local Aboriginal water stories, as the dams were frequently built on sites of natural soaks and springs Aboriginal people used for water. In Merredin for example, the old Railway Dam is located at the base of Merredin Peak, on the site of a traditional water soak, an important water source for Ngaji-Ngadji people. The railway dam was built in 1895 using the features of the natural environment with artificially constructed stone catchment walls and diversion channels to increase the quantity of water collected to service the demands of the steam locomotives. Many of these dams were retained even after the pipeline arrived, as the water quality was considered superior and more cost-effective than scheme water.

Ngaji-Ngadji Traditional Owner, Mick Hayden, explained how the large rocks and gnamma holes were all created by *jila* who protected the water supply, first exploited by Hunt (with man-made wells located immediately adjacent to the gnamma holes) and later the Government, in their endless search for water. Mick told of how the Aboriginal people tried to protect the water sources but were tied-up and denied water or force-fed salt, before being released and then



View of Hunt's Well



Typical Hunt's well



Natural granite watershed in Merredin, showing gnamma hole immediately adjacent to Hunt's Well



followed, leading 'white-fellas' straight to the water hole. The research paper, 'Blood for Water,' written by Sue Hanson further explores how Aboriginal people were mistreated to reveal these valuable natural water sources, and how once the water source was found, it was frequently fenced off and Aboriginal people were denied access. Not only did this affect their ability to survive in often arid environments, but it also prevented Aboriginal people from attending to their cultural obligations to care for these important places. Boondini Rock (also known as Boondi Rock), Mooranoppin Rock, Talgermine Rock, Moorine Rock (*Nulla Nulla*) and Duladgin Rock have all been identified as traditional Aboriginal water farms that used natural rock catchments to divert rainwater to soaks for drinking. These were later appropriated and modified by the Government for the purpose of building water supply dams for the railway.

Typically, Europeans did not understand the Aboriginal water management systems and therefore incidences of the destruction of waterholes continued to occur. John Michael Finnerty, Coolgardie Warden 1894-1900, recorded the instance of the destruction of a the gnamma hole in Coolgardie. Upon returning from a trek, Finnerty was angered at discovering the blasting of the gnamma hole (the Aboriginal rock-well after which Coolgardie was named). Only 100 yards from his residence, the gnamma hole which could hold 4000 gallons of water, had been blasted in a foolish search for more water, consequently destroying the historic hole and its usefulness.<sup>7</sup>

*the Avon River was salty when I was a kid. In the old days, the Aboriginal people would have dug wells to get fresh water -  
Deborah (Northam)*



During the community engagement tour Ngaji Ngadji Traditional Owner, Mick Hyden, introduced the research team to *wanyal* (water trees) and the importance and high value placed on them for the collection and storage of water, supplementing the sources from gnamma holes, springs and soaks. Mick described the technique used by Aboriginal people to modify the trees as they grew. First Nations people used large stones and clay placed in the centre of the fork of the primary trunk, forming a basin over time. Many of these trees were once located throughout the landscape but were often lost to land clearing undertaken for the woodlines, agriculture and mining.



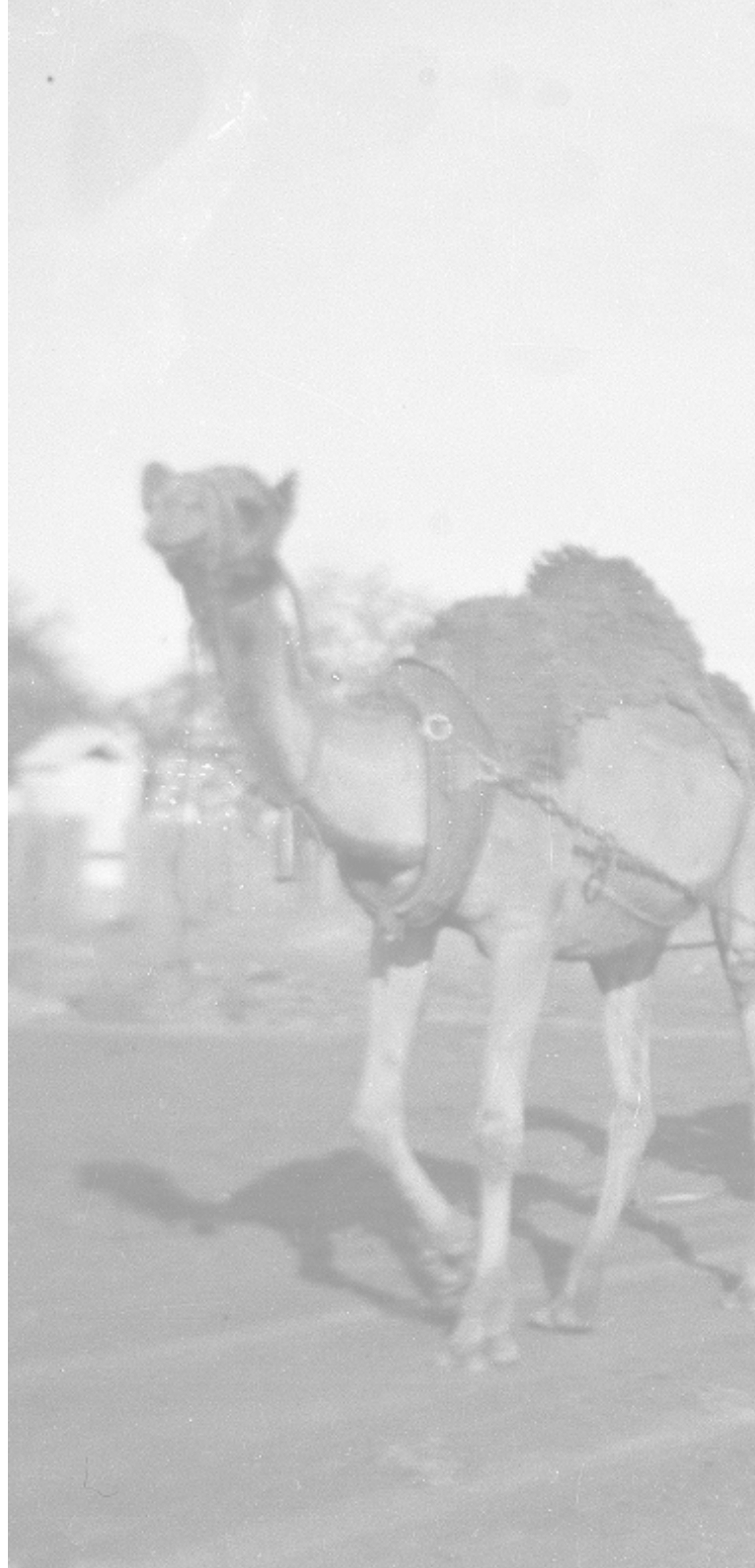
Mick Hyden identifying a traditional water tree near Merredin

## Gold Rush days & the establishment of the Government Railway (1880s-90s)

The establishment of the Hunt's Wells route from Perth eastward towards Kalgoorlie encouraged prospectors to travel to the region in pursuit of gold. In 1888, Riseley and Toomey discovered a reef of gold in Southern Cross,<sup>8</sup> four years later Bayley and Ford found rich deposits of gold at Coolgardie and the West Australian gold rush began.<sup>9</sup> The 1890s gold boom in the Yilgarn and Coolgardie areas saw an unprecedented number of people arrive in the Eastern Goldfields and demand for reliable water supply soon became a priority for the Western Australian government. Water had always been difficult to source and miners (and others who moved to the goldfields prior to the construction of the pipeline) suffered terribly from typhoid owing to the critical water shortage.<sup>10</sup>

Prospectors and settlers continued to stream into the region during the 1890s. Teams of horses pulled wagons from Southern Cross to Coolgardie. Johnny Aspinall's diary claims that there were 500 teams of horses as well as 2000 camels on the road.<sup>11</sup> To this day, cleared areas may be seen along the Great Eastern Highway although few know that these are where the camels grazed.

The Muslim cameleers who led this inland expansion typically had their homelands in Afghanistan, Baluchistan and other provinces in the region of north-west India (now Pakistan), although they were often generically referred to as 'Afghans.' Utilising animals with an inbuilt ability to survive in arid regions sparse of water, the cameleers represent an important part of the Goldfields water story at a critical time before scheme water arrived. Their contribution to those seeking gold was very significant, even if not always fully appreciated in an era when racial and religious discrimination was often quite open.



Newspaper reports from the time indicate that Muslim cameleers were commonly and often unfairly accused of polluting the few available water holes by camping too close, and by washing their dirty clothes in the soaks.<sup>12</sup>

Coolgardie local historian and bush poet, Vic Dale, noted that the drought was so bad in the early 1890s that for the first two summers, the prospectors were required to leave the goldfields until winter rains had fallen. Vic notes that Warden Finnerty considered that the scarcity of water represented an unacceptable risk to prospectors, many of whom were travelling long distances between gold finds without reliable water sources along the way.

Within six years Coolgardie had a population of around 15 000 people with at least another 10 000 in the wider goldfields district. Western Australia's population grew from 48 502 in 1890 to 179 967 in 1900 almost entirely as a result of gold<sup>13</sup>.



Prospectors's camel team, Kalgoorlie



Alluvial claim, Kanowna, 1900, SLWA 5816B/23

177  
Alluvial Claim

# *No one ever forgot that day!*

Submitted by Murray Arnold

*During the gold rush era Ivan Bozanic and two of his compatriot friends from the island of Vis, now part of Croatia, landed at Fremantle with a total of 15/- in hand. After buying a waterbag and boots they set out for Coolgardie, placing their swags on a camel wagon while they walked the track living on 'tinned dog,' bread and damper. In 1908, after stints working on mines and the woodlines, the three friends took up land at Korbel, southeast of Merredin, which they proceeded to clear with an axe. Eventually Ivan married and raised a family under conditions typical for the time on a new farm, but almost incomprehensible today. Many years later he wrote about living on emu, kangaroo, parrots and other 'bush tucker', with only a small, galvanised tank for water. Fortunately, things slowly improved, and one can only guess at the family's delight when their home was finally connected to the water scheme:*

*Before the 'scheme' arrived (and no one ever forgot that day!) water shortage played a major part in the lives of everyone either on a farm or living in one of the many country towns which had either a most unsatisfactory supply, or none at all.*

*A 1,000 or 2,000 gallon tank next to the house would fill in a good rainfall event, but in the Western Australian wheatbelt such falls could be several months apart. Imagine being a woman with a husband and several children living in a house without a flush toilet and with no running water. The weekly bath night would begin with Dad carrying steel buckets of water from the tank (after tapping on the exterior to check the level) and placing them on the top of the wood stove. When the water was hot, he would pour it in the tin bathtub for Mum to have first bath. He would follow and then the children in order of their ages. Baths were quick affairs – water cools quickly – and no one much enjoyed bathing in third- or fourth-hand bath water.*

*Dad then bucketed the water onto one of the very few hardy garden plants that had so far managed to survive the hot summer. He probably then filled an enamel basin from the tank and placed it on the kitchen table to wash the tea-time dishes. If the farm dam was full, talk may have moved to planning for a holiday after harvest at Mandurah (in the early 1950s, a town with less than 2000 people) or Albany. If the dam was getting too low, holidays were off because Dad had to be at home trucking water for the sheep. Even holidays could prove problematic. After a month by the sea with running water and all mod cons, it was very tough to arrive home on the farm only to find all three garden plants had died.*

*If the family went to visit a family member or friend who lived in a town already connected to the scheme, the children took towels so they could enjoy the absolute novelty of taking a shower, after which they might chase each other with a hose while the car was being washed. The visiting woman probably didn't much enjoy the walk around the lush garden watered from the Kalgoorlie pipeline...*

*At least she didn't have the experience of one woman in the 1950s who was asked by her perplexed hairdresser "what colouring are you using in your hair?" Her truthful answer? "Dam water".*

For families like this, and for countless others in areas served by the pipeline, the arrival of scheme water was a never-to-be-forgotten highlight of their lives.

Western Australia was profoundly and positively altered as its population and economy grew in a way that previously no one would have thought possible. However, the pressure put on the goldfield's extremely limited water supplies by prospectors and their animals proved disastrous for the Aboriginal inhabitants as their traditional sources ran dry. Several writers from the period describe how when the original inhabitants sought to protect their vital supplies through a show of force, they were frequently met with violence.

Sue Hanson's research paper 'Blood for Water' documents many disturbing aspects of the interaction that occurred on the Eastern Goldfields as large numbers of people moved there in the 1890s to search for gold.<sup>14</sup> Inevitably conflict arose from a situation where the natural sources of fresh water became inadequate to meet the needs of both the local Aboriginal people and the growing number of new arrivals. Hanson quoted goldfields resident Clara Saunders who wrote in 1902:

*The blacks are in a bad way...it's a pity something can't be done to help them, water being scarce just now, all the soaks and gnamma holes are just about dry. There was a load of water arriving this afternoon from Raeside Soak over 30 miles away and it was dished out to the men at half a gallon. Each being 2/6d per gallon, so you see the poor blacks are robbed of their water. It's cruel.*

Government water condensers were set up in an effort to supply potable water distilled from salt water found in nearby lakes following heavier rainfall events, but this proved very expensive and far from a long-term solution. Tens of thousands of people,





mostly young men, living in tent encampments in appalling conditions with no sanitation and extremely limited supplies of water proved a recipe for disaster. In 1895, typhoid fever took hold on the goldfields as well as Perth. It is estimated that there were around 16,000 cases in the years 1895-1900 (close to one in ten of the colony's population) with 1,879 deaths caused by the disease which thrived in a society where water was scarce and personal cleanliness an impossibility.<sup>15</sup>

There was also a major political incentive for politicians based in the older areas of the Swan River Colony, to do something about providing water to the goldfields. It was becoming clear that the Australian colonies were going to federate and the largely ex-Victorian diggers might well agitate to form their own goldfields-based state if their fair demands were not met. A railway had been built to Coolgardie, but it was water that really mattered.

Those living on the goldfields did the best they could with very limited rainfall—many who failed to take water seriously perished from thirst as a result. For most however, life went on, but in a region where water could be more expensive than whisky almost everything they did revolved around minimising the amount of water used. Even the separation of gold from dirt was carried out by a 'dryblower', a machine that used air rather than water.<sup>16</sup>



State Government Condensers fed by timber from the woodlines, Coolgardie, 1902. SLWA 5001B/74

## Demand for water and wood

The demand for water heightened as the population of the Eastern Goldfields continued to grow and industry expanded. Gold mining became more and more sophisticated as availability of surface and alluvial gold quickly reduced. Mining companies were forced to begin crushing ore, a process that was energy and resource intensive, requiring steam-powered crushers that relied on firewood and water. Woodlines were first begun with the WA Goldfields Firewood Supply commencing operations in 1899, and by 1910 an average of 500,000+ tones of firewood was being delivered annually to Kalgoorlie mines and industry. Water was a critical component in the woodlines operation. The tramlines used to transport cut firewood from the bush to the main supply line, were also used to transport water tankers to the workers living on the woodlines. Almost all the wood cutters were European immigrants, renowned as hard workers and coped well with the adversity of life on the woodlines. A Western Australian Museum article titled *The Woodlines*<sup>17</sup> summarises the story as follows:

*The development of the goldfields created an insatiable appetite for timber.*

*A rapidly growing population soon began to wreak havoc on the environment. At first timber was cut for domestic use and to fuel the condensers supplying fresh water. However these needs were nothing compared to those of the big company mines. Vast quantities of timber were needed as props to support the ever-growing number of underground shafts, to power the steam winders that hauled the gold bearing ore to the surface and to feed the sulphide roasters processing the ore.*

*By 1900 the timber around Kalgoorlie had been cut out. Timber companies moved to hauling huge daily tonnages across a vast network of rail lines.*

*One of the largest rail systems in the country radiated out from the Golden Mile. At their peak the firewood companies were delivering around 1,500 tonnes of timber per day to the mines and towns. It was one of the largest industrial uses of wood for fuel anywhere in the world in the twentieth century.*

Many Western Australians today have links to the Woodlines story through their ancestors, large numbers of whom were Italian men keen to accumulate capital and make good in their new country. Their excellent work ethic and resilience enabled many of

Shifting Camp, Kurrawang Woodline. SLWA 282079PD



Train on Sons of Gwalia Woodline c1930s. SLWA BA944/27



these migrant families to eventually leave the woodcutting for other industries including carting, mining and farming. Many of their descendants continue to live in communities along the Pipeline:

*My dad worked on the woodlines. About one third of the wood cut was for boilers, the rest was for the mines because it was steam engines back then. The big wood was cut to shore up the mine shafts. My Mum would work beside Dad all day and then go back home and make dinner and do the stuff she had to do. Life was tough, but we didn't grow up skinny little buggers. I really admire her. We grew up healthy and active and free – Vic Dale (Coolgardie)*

Wayne Della Bosca from Southern Cross recounted the life of his grandfather, Antonio, who arrived in Western Australia from Italy in 1913 and became a wood-carter on the woodlines, supplying the No. 3 Pump Station at Cunderdin. In 1931 they moved to Ghooli and Tony secured the contract to supply the No. 6 Pump Station with firewood. His children attended the Ghooli school, which at that stage needed 11 children to keep it open, the Della Bosca family supplied seven! Tony's sons took over the carting business until they relinquished the contract in 1953, as it was no longer profitable. Instead they expanded into farming in the region, from their initial 1,200 acre block in Bronte (purchased in 1931), to an additional 17,000 acres near Koolyanobbing in the 1950s. Today Wayne Della Bosca continues to farm in Southern Cross and the local community is made up of many descendants of these original Italian immigrants.

It is highly likely that the clearing of over 3 million hectares of bush to deliver 21.6 million tonnes of timber between 1900 and 1964 would have a significant impact on local ecosystems and would certainly reduce the availability of water held in soaks and old water trees. Although the Pipeline passed directly through this landscape, by nature its delivery of water was targeted at townsites, and it represented a significantly different kind of water resource to the original natural sources that were distributed throughout the landscape.



Firewood stacks in the 1920s supplying the Pump Stations of the Goldfields Water Supply Scheme. SLWA 1355/13