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The Archaeology of the Spiritual and Working Lives of the Muslim Cameleers of Western Australia in the Late Nineteenth and Early Twentieth Centuries

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The Archaeology of the Spiritual and Working Lives of the Muslim Cameleers of Western Australia in the Late Nineteenth and Early Twentieth Centuries

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A herd of wild dromedaries (above) and a camel pad (left) at Bummer's Creek, near Leonora in the goldfields of Western Australia, photographed in September 2020.

In the late 1890s, Bummer's Creek was an important waypoint for Afghan cameleers in the goldfields.

Photographs Roger Bateman 2020

DECLARATION OF AUTHORSHIP

To the best of my knowledge, this thesis contains no material previously published by another person, except where due acknowledgement has been made.

This thesis is the candidate's own work and contains no material which has been accepted for the award of any other degree or diploma in any institution.

Roger Bateman

May 2023

ABSTRACT

This thesis describes the lifeways of cameleers (also identifiable as males, Muslims, Asians, 'Afghans') who worked in Western Australia's transport industry in the period 1887 to 1920. With their camels' unique capabilities in the dry and sandy terrain of Western Australia's arid and semi-arid areas, they provided a critical service in the early mining and settlement history of Western Australia. This research has been done through the archaeological record of their campgrounds, other sites, and the historical record. The research's four aims were to gather and compile archaeological evidence associated with the Afghans and their religious lives as Muslims; describe their lives in permanent campgrounds; their working lives; and the collapse of their industry. Research on this topic has minimal precedent in Western Australia.

Seven sites comprising campgrounds, burial grounds and mosques were surveyed. Two other sites provided criteria to distinguish Afghan and European Australian occupation. The physical remains of mosques show both traditional Asian practices plus modification to Australian conditions. The archaeology of campgrounds reveals a complex society and economy with an intricate relationship with European Australians. Mosques and other religious symbols with varying functions reveal a complex Islamic life. Historical data showed that some transplanted cultural elements, such as *purdah*, seclusion of women, were imported unmodified. Food cans were the dominant artefact but have been greatly disturbed by contemporaneous campground clearing and metal recycling. However, outside of the camps, artefacts related to their working lives on the road were sparse. Almost all artefacts and features dated from the period 1887 to 1920, with very little post-dating this period, indicating a clear decline in activity. Declining output from mining and the introduction of railways limited Afghans' work in Western Australia, and eventually ended it.

ACKNOWLEDGEMENTS

My earlier geological career gave me the financial security to commit myself to a project like this, and to give up an income, no trivial choice. As a member of the Geological Society of Australia in Western Australia, I edited the state newsletter, the West Australian Geologist, and I wrote a variety of articles on subjects where geology was only one component, many with archaeological themes. This is how my interest really stated to grow.

Work of this type is never done alone, even if it feels to be so at times. María José Romero Segura patiently listened to my prattling and detailed accounts of what I was doing with no more protest than to refer to my project as research on camel poo. María José, being a Spanish geologist from near the ancient mines of Rio Tinto, was a catalyst in my interest in Spain, hence in matters of Islam. It was in this way that this project developed, combining archaeology, mining, and the Muslim world.

Dr Shane Burke, my supervisor at the University of Notre Dame Australia, gave his time generously and without stint to discuss any aspect of the work. This was especially important to me as I was not an experienced student of archaeology, and so I was trying to catch up on relevant aspects of a full Bachelor's degree of study in a matter of a few months. Dr Darren Holden, also a geologist, was the one that set me onto the idea of doing this study as a M.A. at the University of Notre Dame, and he served as co-supervisor.

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While I have had some fragmentary knowledge of Islam, I am not myself Muslim. Therefore, I needed to ensure that my interpretations concerning matters of Islam were correct. I turned to many Muslims to test my ideas against their thorough knowledge of Islam.

Dr Mohsen Keiany (Birmingham City University) assisted greatly, with his Iranian and archaeological background, in interpreting the details the architecture of rural mosques and other artefacts and features.

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INTRODUCTION

For a relatively short time, cameleering was a major industry in the goldfields of Western Australia. From 1887 through to the early years of the twentieth century (dates CE, Common Era), camels carried cargo to and from remote settlements and mines (Cigler, 1986). The goldfield of Halls Creek in the Kimberley was never a major field but was the first in Western Australia that anticipated larger finds in Marble Bar, Nullagine, and Yilgarn-Southern Cross. The extension of the railways linking the principal mining towns with Perth (Western Australia's main urban and commercial area) and other ports along the west coast, the improvement of the internal combustion engine for road transport during the second decade of the twentieth century, and the precipitate decline in gold production by 1920 largely finished off the industry. In this period of around 33 years, cameleers and their iconic beast of burden traversed uncountable kilometres to bring essential material to communities often in remote and arid areas. Western Australian mining would have developed regardless, but not as quickly.

The freight the camels carried could never be hauled effectively by other means because the heat, lack of water, camels' ability to forage on native vegetation, and in places the soft sand under hoof eliminated horses and bullocks as alternatives. The camel could and did cope with these conditions: the camel could maintain a pace of 30 kilometres a day for a month carrying 500 kilograms and live off the land and survive on weekly consumption of the water naturally occurring in water holes and soaks.

Inextricably linked to these animals are their handlers – the Afghans. The cameleers were recognised for their efforts (Philo-Afghan, 1897, February 4) but persistent antagonism dominated – at times virulent letters to editors, with the real threat of serious political and social consequences (Murray et al., 2008). The antagonism may have been mostly focussed on camels in the first instance, because Afghan pack camels could do what the European Australian teamsters' horses could not, often for a price the teamsters could not match, and because the camel was a malodorous and irascible beast (and not even this was the universal opinion). The men were condemned by association with the camel, for foreignness and skin colour, but their

Islamic faith seemed to be of lesser moment than it has become in the twenty-first century.

While research into the Afghan cameleers was particularly active during the 1980s due to Australia's Bicentenary in 1988, there has been little detailed published work focussing on the archaeology of their activities. The 'Asiatic campgrounds' (as they were known), their Islamic faith, and their work in the gold mining industry are themes that have been commonly referred to as part of other broader research topics, but little exists regarding the group's archaeological record associated with their living and working activities. Parkes (1997, 2001, 2009) and Bolton (2005, 2009) are prominent exceptions.

The thesis is structured in five Chapters, as follows:

- The Introduction presents the research question, research aims and terminology used;

- Chapter 1 is the critical literature review of the existing level of knowledge of the subject, and particularly where there are gaps that can be addressed in this work;

- Chapter 2 reviews historical material relating to Afghans, the background and context of their lives in Asia and in Australia, that assists in the interpretation of the archaeological remains found in field work;

- Chapter 3 discusses the sites chosen for study, the methods employed in the study, and the materials examined;

- Chapter 4 describes the artefacts and features found in the nine sites studied, with a short summary for each site;

- Chapter 5 presents an overall interpretation in terms of the research aims of all the archaeological, historical and textual information presented in the preceding Chapters;

- Conclusions are comprised of interpretations at the broadest scale. Additionally, a set of criteria are presented for identifying sites occupied during the period 1887 to 1920 by Afghan, Muslim, or itinerant peoples. Finally, some suggestions are made for further research.

Research question and aims

The question that this research seeks to answer is: what were the lifeways of the Afghan cameleers that worked in Western Australia between the years 1887 and 1920? What was the nature of the societies in which they lived, worked, and prayed?

To answer this question, the research has four aims:

- to gather archaeological evidence associated with the Afghans and their lives in sites occupied by them;

- to gather archaeological evidence associated with the Afghans and their work with camels in the transport industry;

- to gather archaeological evidence associated with the Afghans and their religious lives as Muslims;

- to compile historical information to provide context to the other aims and to comprehend the circumstances under which they came to Australia and to determine the reasons for the demise in the industry.

Terminology

I use the word ‘cameleering’ to refer to the commercial industry and individual employment in which the use of camels was the defining feature, where camels were used for the commercial transport of goods, personal transport, sport such as racing,

and ceremonial activities, in areas peculiarly suitable for camels by virtue of climate and terrain. Terminology has been used here much as it was in original sources and has not been changed for modern sensibilities on ethnicity. Except where distinctions are required, the cameleers are referred to here in general by the term ‘Afghans’ because of precedence. This is how they have always been known, even though it is a technically inaccurate term.

With tribal affiliations, I have commonly used the terms and spellings contemporary with their time in Australia as shown in newspaper accounts. Otherwise, for more often-used terms, I use Hindu (not Hindoo as used in some texts from the period discussed in this work), Balochi (not Baloochi, Beluchi), and Pashtun (not Pushtun, Puchtun, Pachtun, Pathan). Pishori (Musakhan, 1932) is a demonym referring to the Pishin district near Quetta in Balochistan, inhabited by Pashtuns.

The campgrounds used by Afghans were commonly termed ‘Asiatic campgrounds’ on cadastral maps of the time. Australians of Anglo-Celtic descent were commonly referred to as Australians and by implication British even before Federation in 1901, whereas ‘aliens’ was the common term used for Afghans as well as Chinese, Japanese and many others (Cleland, 2000; Scriver et al., 2016). The term ‘alien’ does not always appear to be pejorative and may have been a more neutral legal term.

A few terms for concepts and items that do not generally apply outside the field of Islam and originate from languages other than English are transliterations from the source language and are italicised here and defined. An example is *qiblah* for the direction to which Muslims must face during prayer toward the *Kaba* in Mecca. Where an entirely adequate and comprehensible English word exists, for example nose-peg for the pin inserted through a pack-camel’s nasal septum to hold the rope that connects each camel head to tail in a camel train, that term is used instead of the word used by Afghans.

CHAPTER 1

LITERATURE REVIEW

In the 1980s and 1990s much was written on the lives of Afghans in Australia in the nineteenth century (CE), the culture they brought from their homelands, and other historical events that shaped the Afghans' work and life experiences in Australia (Cigler, 1986; Jones & Kenny, 2010; Loois, 1988; Rajkowski, 1987; Stevens, 2002). However, the literature on the archaeology of these peoples, and on their residence specifically in Western Australia, is sparse. While the archaeology described in this research contributes to making good this deficiency, a better interpretation of cameleers' lives will also require an assessment of documentary information about these peoples and their lives. In this literature review, I explore what is known, and unknown, of these peoples.

Identification of ethnicities via archaeology

A premise of the research aims of this study is that Afghans were recognisably present in the archaeological record of Western Australia. The following literature review and the photographic record amply substantiates that, but the question of ethnicity in the archaeological record immediately arises: who of these peoples were Afghan, who described them as Afghan, how can Afghans be recognised, who could be present alongside Afghans but should be ethnically distinguished?

'Afghans' is an imperfect term because they were from many parts of modern India, Pakistan, and Afghanistan. Some cameleers wished to be seen as Indians and hence British subjects (Jones & Kenny, 2010; Scriver et al., 2016), whereas others sought patronage from the Emir of Afghanistan. Their homelands, including Balochistan, were part of various empires until some areas came under British India rule when the 1893 Durand line was drawn (Ehsan, 2017). The demonym Afghan changed in strict

definition throughout the nineteenth century, therefore no single term can be strictly correct or adequate, but the term Afghan is used here because of precedence.

Self-identification as an ethnic group is the fundamental 'we-feeling' of Jones (1997), and the definition of an ethnicity defines boundaries. Self-identification (Barth, 2010; Jones, 1997; Renfrew & Bahn, 2016) may be based on several or all of several criteria: an accepted and shared ethnonym; the contrast of ethnic identity with 'others'; common descent or genealogy; a shared mythology of history and origin; shared territory; common language; culture and customs; beliefs and religion. Ethnicity is not biological, but it is genealogical. A person may identify as a broad ethnic group in one situation, as a subset of that, or as some other group, depending on context (Diaz-Andreu, 2001). Ethnicities are not permanent or inherent, ethnic groups may appear, evolve in self-identification, and disappear through time. As observed by Demoule (1999) 'There is no reason to think that national or ethnic identity has any meaning more than two or three centuries back'.

Misinterpretation of artefacts may follow from a glib and superficial application of ethnic concepts, and by consciously malicious or political (nationalist) ethnic concepts. A one-to-one correlation of material culture with ethnicity is flawed. Artefacts may constitute a cultural group (Childe, 1929), but the people using them may not. Some components of a culture may be shared amongst status classes in several ethnic groups, and others withheld. Changes in artefact characteristics of a 'cultural group' may take place via migration of peoples such as in invasions, or through diffusion of ideas through cultural contacts more than movement.

Pashtun ethnic identity is well defined and strongly held despite the fact that some Pashtun domains are fragmented (Barth, 1969, 2010). Barth (1969), an anthropologist, gives patrilineal descent, Islam, and Pashtun culture (*pashtunwali:* language, hospitality, egality, seclusion) as the diagnostic features of a Pashtun. There are mechanisms for changing ethnic affiliation, yet the contrast between ethnicities remains important. Barth points out varied and even conflicting lifeways of Pashtun groups, thus providing no simple cultural/archaeological criteria for identifying Pashtuns. Islam is the archaeologically most accessible of these features, yet Islam is a characteristic for many peoples of very diverse ethnicity, from rural *Pashtunkhwa* to today's metropolitan African American society.

There are no studies explicitly of people of Afghan ethnicity identification in nineteenth century Australia. A study of ethnic origins in modern Pakistan (Zahir, 2020) strongly criticised a connection drawn in early work between Pashtun ethnicity and Islamic faith (Barth, 1969) and an imagined Aryan ancestry in Gandhara (part of the Persian Achaemenid empire before 539 BCE). Zahir (2020) saw this as simply perpetuating ethnic myths that were important to both the new Islamic state of Pakistan and to the Italian archaeologists after Italy's fate in World War II. The destruction in 2001 CE of Buddhist Bamiyan (Afghanistan) shows the inescapable link between the archaeological past and the political present in Afghanistan (Ehsan, 2017). The Buddha's alms bowl of Kandahar from before the second century CE (Dwivedi, 2017; Falk, 2001) presents another example. It is a stone bowl (1.25 m diameter) that has six bands of Persian language and Arabic script listing the rules of a local Islamic school, and etched onto the bowl later in 1490 CE (Dwivedi, 2017). Because of this Islamic connection, it escaped the destruction in the Kabul Museum by the Taliban in 2001 CE. It is also an object of interest to India: thus, an archaeological artefact is mostly known because it is at the nexus of competition, Islam, and Buddhism, modern Pakistan, and India.

Successful case studies illustrate the real complexities. The Chalcolithic-Bronze age transition in Cyprus may have occurred via Anatolian invasions/migrations, idea diffusion, or by indigenous innovation (Knapp, 2001). The sparse and indistinct parallels in the material cultures of Cyprus and Anatolia, and the fact that all the innovations can be traced across a vast area can be an argument for inspiration for local innovation, accompanying increased copper production and export from Cyprus.

Pottery from the village of Llíria (Edeta tribe, eastern Iberia, ~200 BCE) was used to identify Edetanian ethnicity, but diverse characteristics invalidates this simple correlation (Diaz-Andreu, 1998). Iconography on the pottery could be interpreted to indicate very diverse cultural or ethnic affiliation. Ethnicity here is a multidimensional function of how 'the potters in Edeta and their clients perceived various types of identity: gender, status, the Mediterranean world, Edetania, the eastern area of Iberia and the whole Iberian area' (Diaz-Andreu, 1998). Pots are not people.

More relevant to Western Australia are studies of Chinese railway worker camps in North America. In both Western Australia and western U. S. A., the general paucity of

texts from the emigrant groups means that archaeology is the principal source of information on relationships (Voss, 2015), such as distinctively Chinese opium use, faunal/foodways remains and ceramics. Polk (2015) described various worker groups, European and native-born Americans, African Americans, indigenous Americans, Chinese and Mormons who had segregated campgrounds, commonly by their own choice. Four Chinese worker camps were defined on the basis of Chinese artefacts such as rice bowls, condiment jars and opium paraphernalia (Polk, 2015), but the possibility – or improbability - of native-born Americans using them was not addressed. Some camps had distinctively Chinese structural elements that included wok and barbeque hearths for communal cooking (Baxter & Allen, 2015). Sunseri (2015) described alliances between marginalised groups (indigenous and African Americans) to the extent that indigenous Americans gave armed protection to the Chinese, or at least refrained from attacking them. Transience and kinship connections were other features of the Chinese experience.

In a South Australian example of a somewhat similar situation (Burke et al., 2018), Irish Australians were distinguished from British Australians. These emigrants had evolved in accordance with the Irish in Ireland, in relation to famine and extreme poverty. Jewellery and personal items depicted the rosary and the game of cricket and included clay pipes. Catholicism, manual and rural labour status, small-scale fields, cottage architecture in family clusters, and ornamentation of headstones all gave indicators of Irish identity. The gap between artefacts and the people that used them is never really bridged.

Afghan and Muslim homelands and culture

According to some writers, the lives of the cameleers in Western Australia were framed by many distinctive characteristics: they were almost all male and Muslim, and their cultural background was distinctive on a variety of scales: a century under British rule, first through the East India Company and later the British Raj; recent fighting along the Durand Line in the 1890s; their personal Islamic faith and tribal culture; and their personal experiences in Australia of racism, work, and in some cases new wealth

and status in the Australian goldfields (Korvin, 2004; Stevens, 2002). Afghans who migrated to Australia, initially as cameleers but often with time spent in other fields of work, found themselves as Asians and Muslims in a country fast becoming dominated by English speaking Europeans with Christian faiths. To interpret the archaeological record left by people with cultures outside of the Eurocentric norm, it is necessary to recognise and understand how the relationships were modulated by these contrasts - a topic few have treated in Australia. The existing record allows various avenues of inquiry such as the rare examples of Bradbury (2016) and Simpson (1995) with research on deviations from orthodox Islamic practices amongst tribal and ethnic groups.

In their homelands, Afghans and Indians lived in a fundamentally tribal society governed by *pashtunwali*, the Pashtun code of life: independence, hospitality, egality, and revenge (Barth, 1969), and the edicts of the religion of Islam (Khan, 2018). According to Musakhan (1932), they brought to Australia historic tribal rivalries that may have caused certain tribal groups to occupy separate campgrounds or separate sections of one camp. Schimmel (1980), Edwards (1996), Haroon (2011), and Khan (2018) described the role of prominent *mullahs* (a Muslim especially learned in Islamic theology and law, recognised by the Muslim community as having that knowledge, and using that knowledge in a career with payments in some form, part-time or full-time) in society and how they achieved their religious, spiritual and political influence. Some *mullahs* reached a status as a type of *pir* (‘saint’: this is strictly not Islamic because only Allah should be prayed to and worshipped. Every Muslim has direct access to Allah and there is no need to pray to for intercession. A criterion for ‘sainthood’ is the ability to transmit the blessings of Allah to other mortals). The accounts of Afghan cameleers in Australia give few details of these aspects of religious faith.

The British Empire fought various wars in south Asia: the Indian Mutiny of 1857 (Spilsbury, 2008) and three Afghan Wars between 1839 and 1898 (Coughlin, 2014), in which Pashtuns fought both as allies and foes of the British according to their perceptions of where their interests in independence lay (Qaiyum, 1945). These conflicts occurred in living memory of both Britons and Afghans, and there may have

been members of both groups in Western Australia who were involved in the conflict and with experiences that determined aspects of their lives in Western Australia.

An underused set of data (yet inevitably incomplete) consists of about 1300 very short biographies of cameleers with birthdates, dates of arrival in Australia, and the area and tribe of origin (Jones & Kenny, 2010; Musakhan, 1932). This dataset has not been analysed in detail previously to show where Afghan cameleers came from, their ages, when they arrived in Australia, and when/if they left.

Literature about the archaeology of Afghans in Australia

Afghans came to Australia in the first instance as skilled workers under contract, most commonly for managing camel trains in remote and arid parts of Australia. Jones and Kenny (2010) and Stevens (2002) gave detailed accounts of many aspects of the Afghans' lives, but their books are not detailed archaeological works, and cover all of Australia and with a focus on Afghans in South Australia.

It is anachronistic to interpret material with a twenty-first century, Western and Christian perspective. The Afghans themselves left a very small documentary record of their presence in Western Australia. Korvin (2004) published portions of a biography of Khawajah Bux, but Bux was a retailer in Perth and Fremantle and never a cameleer. An itinerant *mullah*, Sayed Jalal Shah, sent six letters to the Kabuli newspaper 'Siraj al Akbar' in 1914 and 1915, describing his travels in Australia (Sayed Jalal Shah, 1914, September 20, 1915, June 17, 1915, June 27, 1915, November 22). These two sources are of special value as they were written in Urdu and Dari, respectively, were intended for an Asian audience, and should therefore comprise uncensored writing. There is biographical information on Abdul Wade (Stevens, 2005) but he did not live in Western Australia. The brothers Faiz and Tagh Mahomet left textual details of their business dealings (Rajkowski, 1987; Stevens, 2002) but not of their early time in Australia as cameleers (and that was mostly not in Western Australia). These documents provide general observations, but historical details that relate to Western Australia are scant and descriptions that may be relevant

to interpreting the archaeological record are absent. In general, there is a dearth of historical primary source information about Afghans' working lives.

Specific documents containing information about the archaeology of Afghans is equally sparse, but there are two theses that discuss the Afghan cameleers (Bolton, 2009; Parkes, 1997). The work of Bolton (2009) was in Western Australia, and mentioned the Coolgardie campground used by Afghan cameleers, but her primary research focus was the construction of the Coolgardie pipeline from Mundaring to Kalgoorlie, not the Afghans. However, she was unable to identify a Coolgardie campground location and so was unable to survey the site. Parkes (1997) completed Bachelor of Arts (Honours) level work where she carried out archaeological research on several sites in South Australia and New South Wales, comparing Afghan and European occupation, with only the briefest references in her literature review to Coolgardie, Kalgoorlie, and Western Australia. A few works discussed the archaeology of mining areas (Holmes, 1989; Parkes, 1997) and emphasised the research lacunae. The works that discussed all Australia (Jones & Kenny, 2010; Stevens, 2002) provided detailed historical information on the general or potential nature of archaeological evidence in Western Australia.

Some work assessed the changes through time in the working lives of Afghans in Australia. Some Afghans had direct experience of railway building and mining work in British India (Hanifi, 2011; Singh & Kaur, 2015). Many Afghans who initially went to South Australia for work in cameleering later found employment in various railway related roles (Jones & Kenny, 2010). Similarly, the spread of railways through the southwest and goldfields regions of Western Australia was central to the rise and demise of camel transport. Such experience in their homeland, and connections and experience in the British military in India, may have been factors in their employment in Western Australia.

Archaeological research on railway construction was done by Bolton (2009) who examined camps along the construction of the Eastern Goldfields Railway from Northam to Kalgoorlie completed in 1896 ("Opening of the Coolgardie railway," 1896, March 25), but her work did not deal directly with Afghans. Schinasi (1980) referred to Afghan work in constructing the Transcontinental Railway completed in 1917 from

Port Augusta to Kalgoorlie (Stevens, 2002), but no archaeological work has been carried out on the people, their lives, or their work in Western Australia.

Islam and Afghans in Australia: archaeology

Even in contemporary circumstances, with living informants and known histories, the analysis of religion presents formidable obstacles to the archaeologist (Insoll, 1999). Prominent in the historical record of cultural characteristics of Afghans who came to Australia was their Islamic faith that contrasted fundamentally with the Christian faith of European Australians (Ahmed, 1984; Cleland, 2000; Haroon, 2011; Khatun, 2018). However, research considering the archaeology of sites associated with Afghans may reveal a distinction between the two groups in the form of places of prayer and in the manner with which people were buried (Milwright, 2010).

Musakhan (1932) wrote a history of the Perth mosque that contained little description useful for archaeological work, while Sayed Jalal Shah (1915, June 27) gave a very flattering, contemporary description of the Perth mosque. Stevens (2002) and Australian Department of External Affairs (1910) noted several mosques in 'ghantowns' (Stevens' term, here termed campgrounds for Afghans) throughout Australia, but no archaeologically useful details were given for any of them.

Death in remote locations was common for Muslim cameleers and, because Islam requires that a body is buried within 24 hours of death, burial also occurred in these remote places (Outback Graves Markers, 2022). The archaeology of gravesites – including orientation, materials used in grave construction, and the languages employed in epitaphs (where present) – make it reasonably straight-forward to identify Islamic burials (Insoll, 1999). Thus, burials in the goldfields offer archaeological opportunities, but no archaeological examination of these burials, or interpretation in terms of Muslims living in these areas, has been published.

As the sole relevant archaeological work, Parkes (1997) discussed the features that characterised Afghan campgrounds. The features she noted included the fact that campgrounds used by Muslims should have no beer or spirits bottles, and because

pork is ritually unclean in Islam, fish cans should be common. The location of a campground out of sight of European Australian settlements and on the opposite side of railways and roads to European camps hints at an Afghan presence, and this also may have been the Afghans' preference: Polk (2015) discussed this situation where separation was the preference of all parties. The peripatetic lifestyle of the transport industry means that structural material indicating permanent housing should be rare. However, there may be features in campgrounds that echo family compounds in Afghanistan. Some tools and domestic artefacts may exhibit an Islamic character in decoration or script (Parkes, 1997).

In summary, the existing literature on Afghans living in Australia and working as cameleers during this period has provided a moderate level of detail, particularly documentary. However, there is very little archaeological work done in Australia on these peoples, and none specifically in Western Australia. Nevertheless, this existing information provides a degree of understanding that does provide general principles to guide the new archaeological research reported here.

CHAPTER 2

AFGHAN CAMELEERS, LIVES AND FAITH IN WESTERN AUSTRALIA, 1887-1920

The Afghans and Indians that came to Australia as cameleers

Afghans and pack camels (camels were not normally used as draught animals by Afghans) first appeared together in Western Australia, albeit in small numbers, during the 'heroic' age of Europeans' exploration of Australia (Rajkowski, 1987). In Western Australia, large scale exploration commenced with John Forrest in 1868 and 1870, but Forrest used horses rather than camels and cameleers. Saleh Muhammad worked in crossing Western Australia with Peter Warburton in 1873 starting from Alice Springs on the Overland Telegraph Line, and Ernest Giles in 1875-1876 from Adelaide (Rajkowski, 1987). Brothers Tagh and Faiz Mahomet were early arrivals in Australia and worked on the Overland Telegraph Line (built in 1872) as foremen (Rajkowski, 1987).

Afghan migrants were almost all male, Muslim, and tribal in the sense that the principal social structuring factor was genealogy (Deen, 2012). They were mostly Muslims of the Sunni branch but a branch of the Orakzai are Shias while the Turi tribe are entirely Shia (Haroon, 2011), but very few of these two groups were in Western Australia. The cameleers were from modern Pakistan and Afghanistan from around Lahore, Kabul, Kandahar, Peshawar, or Karachi, and Bengal (Jones & Kenny, 2010). Their tribal origins were Balochi and Sindhi (in the south) and Pashtuns and Punjabis further north (Figure 1). These areas had a long history using pack camels for travel, nomadic herding, and for conveying loads along trade routes.

The Pashtun and Balochi were the dominant tribal groups in western India and Afghanistan. Amongst the Pashtuns, there were many tribes of varying size and importance, many of them listed by Cigler (1986) and Stevens (2002). The Durrani and the Ghilzai were the most important of the Pashtun tribes (Jones & Kenny, 2010),

and they have a long history of rivalry (Ehsan, 2017). Figure 1 shows major tribal areas as they were at the end of the nineteenth century. Some tribes had well-defined tribal areas, whereas others were larger and not entirely restricted to a 'tribal homeland'.

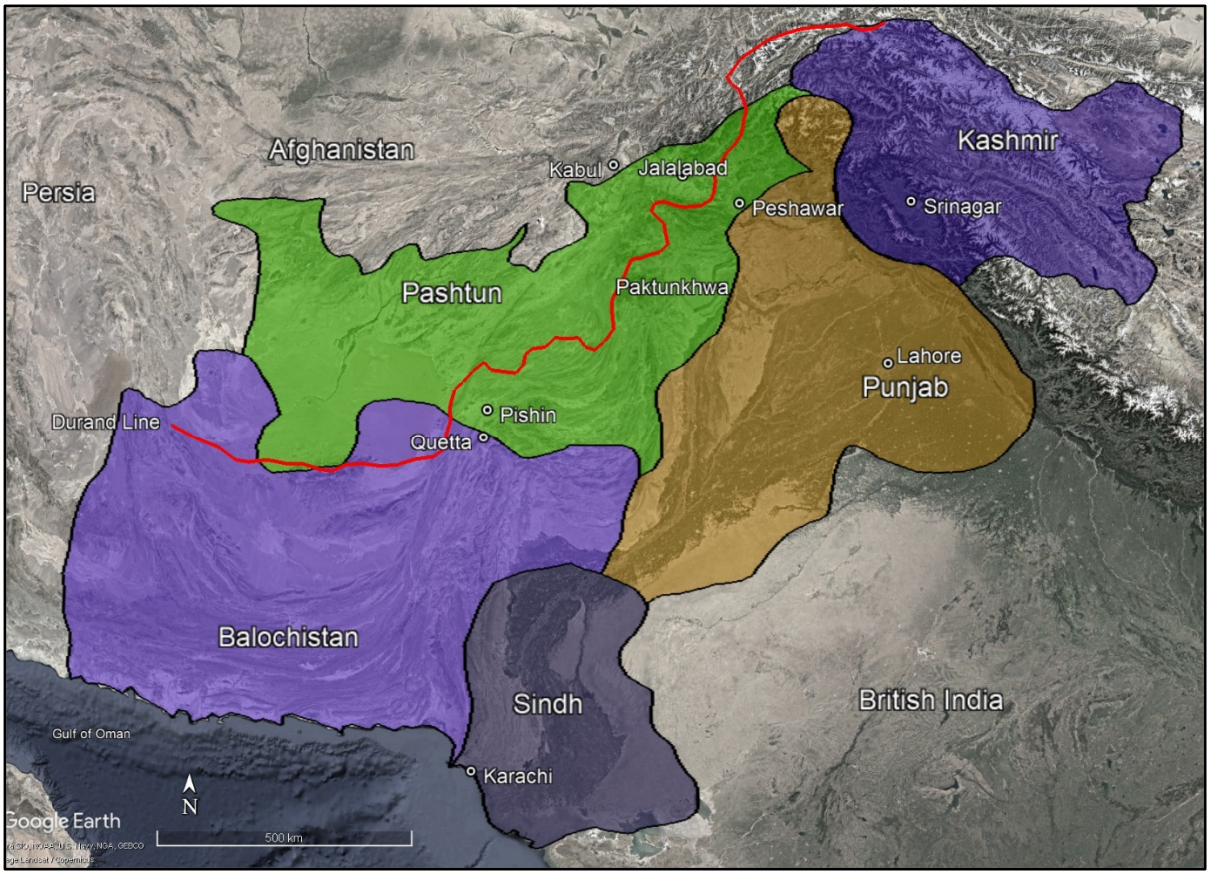

Figure 1: Map showing the extents of the major tribal regions and cities discussed in the text. Based on data from Afghanistan Information Services and a 1985 map of the Central Statistics Office of Afghanistan. Pakhtunkhwa was formerly known as the federally Administered Tribal Areas

The Afghan's principal loyalty was to family and faith. However, those coming to Western Australia chose to leave family behind, in many cases for life, and some families were entirely abandoned at home, perhaps in destitution (Stevens, 2002). Some Afghans venturing to Western Australia may have had no understanding of what they had signed up for, while others of an adventurous spirit may have fully understood (Korvin, 2004). Others may have seen Australia as a refuge from some personal consequences of *pashtunwali*, the Pashtun code of life. The famines through

drought and wilful British mismanagement in British India between 1891 and 1906 (Tharoor, 2017) would have been a strong impulse to migrate. Some were well educated in the western sense: Muhammad Hasan Musa Khan (born 1863 - died after 1932) studied at Bombay and Karachi universities, worked as a teacher in India, a bookseller in Australia, spoke English, Pashto, Urdu, Persian, Sindhi, and some Arabic (Musakhan, 1932). He was a literate and impassioned champion for the cameleering community against racism and abuse (Musakhan, 1932).

Tribal rivalries and loyalties were imported to Australia but not to a great extent. Tagh Mahomet (a Durrani tribe member) was murdered in 1896 in Coolgardie by Goulam Mahomet, a Ghilzai ("The murder of Tagh Mahomet," 1896, January 20). Tribal rivalry was an alleged factor, but this is unclear (Stevens, 2002). Goulam Mahomet claimed in his police statement that Tagh Mahomet had threatened him and that he committed the killing as ‘justifiable, pre-emptive self-defence’ (Stevens, 2002).

The two Coolgardie mosques were established on a tribal basis: one was a Pashtun mosque sponsored by the Mahomet brothers, whereas the other was for Balochis, sponsored by Dost Mahomed ("Afghan rejoicings after a fast of 30 days," 1897, March 8). Some of the cameleer settlements were preferentially occupied by groups from particular tribes (Musakhan, 1932): Durranis and Solaiman Khel Afghans were numerous in Cue, Mohmands in Bummers Creek, Pishori Pashtuns at Sir Samuel and Coolgardie, Balochi at Coolgardie, Punjabis in Perth, Bengalis in Fremantle. Other facts suggest that tribal and national conflicts were not a great problem, probably as supra-tribal unity against European Australian antagonism. In the list of contributions to the Perth mosque fund (Musakhan, 1932), nine Sikhs and Hindus contributed 32 pound sterling 10 shillings, a generous sum for men not of that faith.

Data from brief biographies of Afghans

The compilation of more than 1300 cameleer biographies (Jones & Kenny, 2010) from all Australia provides a statistical study of who the cameleers were. Data from Musakhan (1932) also gave details for between 1904 and 1906. Jones and Kenny’s

data are inevitably very fragmentary, with a birth year recorded for 30% of the biographies and year of arrival for 15%. There may well be systematic bias in the data recorded: those from British India may have been more likely to have a birth year recorded and more able to communicate it to English-only immigration officials in Australian ports. However, with this number of records, some observations may be attempted, and the data are presented here in graphs. Most importantly, the data were presumably given by the Afghans themselves, not ascribed by officials.

The cameleers were not exclusively Afghan in nationality - many were Indians. With 661 entries with country of origin, 43% were Afghan, 30% were Indian, and the remainder were Balochis, Bengalis, Punjabis, or Sindhis (4-7%). Some were Australian born (5%), including the offspring of Indigenous and European women who married Afghan men. In the first graph (Figure 2), not all categories are tribe or nationality, since Hindu and Jewish are religious affiliations. This is probably how they defined themselves, and that is the important point. Many of the Indians bore Muslim names. Most are Pashtuns (52%), with Balochis and Punjabis each about 16%, and 11% Sikhs. The single Jew described himself as born Jewish, raised as a Muslim, and as a former conjurer.

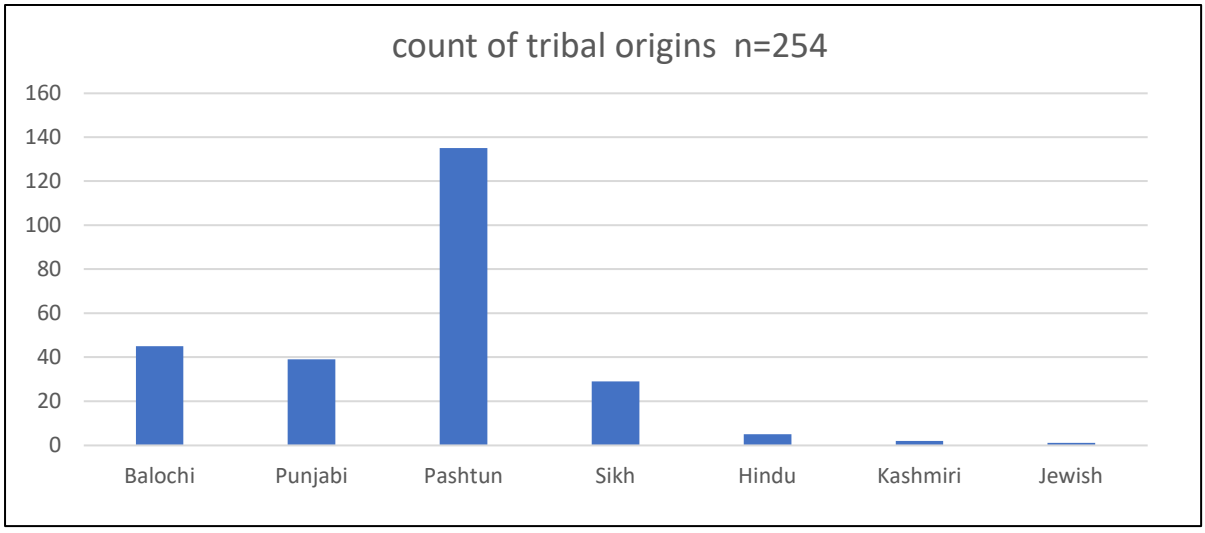

Figure 2: A plot showing the numbers by tribal origins of cameleers in Australia. Data from Musakhan (1932).

Figure 3 shows clans or subtribes of the Balochis (Mehrani, Pishin) and Pashtuns. Pishoris form a large minority (44%), and Durranis and Ghilzais about 10% each. Pashtun Pishoris are from Pishin near Quetta in northern Balochistan. Peshawar was dominated by the British after 1849, and remained relatively free of fighting for years, including during the Indian Mutiny (Coughlin, 2014; Spilsbury, 2008), and that would have mitigated anti-British feelings there. These figures are consistent with the preponderance of Pashtuns in Figure 2.

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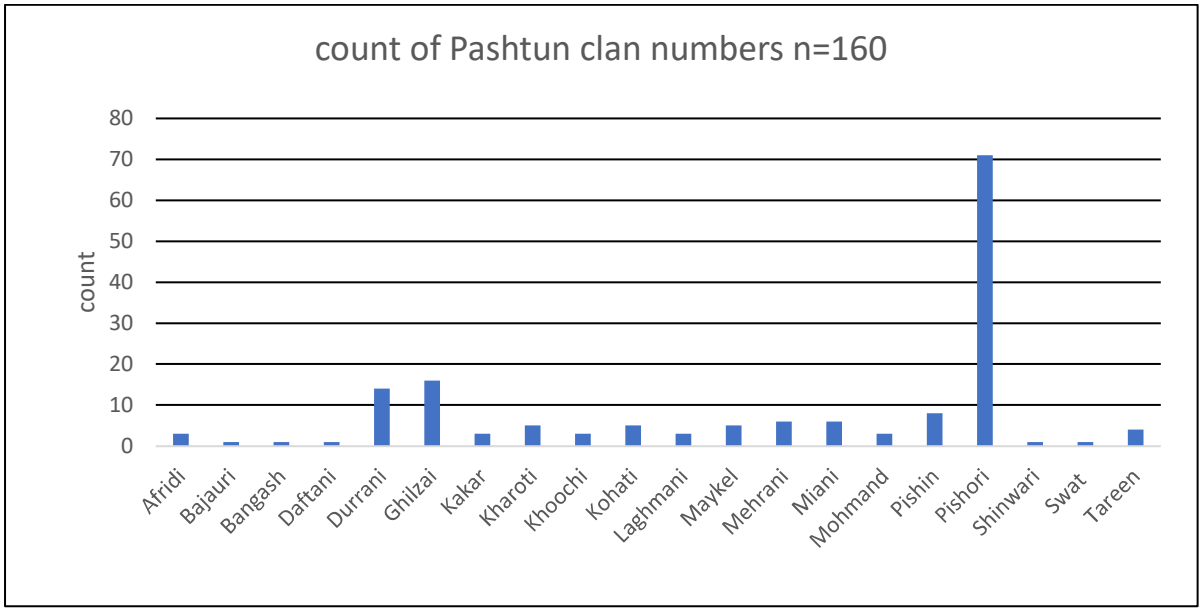

Figure 3: A plot showing the numbers of clan or sub-tribe affiliations. Data from Musakhan (1932).

Figure 4 shows a well-defined peak in arrivals in 1896. This corresponds with the height of new gold rushes in the Western Australian goldfields three years after the discovery of deposits at Mount Charlotte and Fimiston (Kalgoorlie) that together form one of the great gold deposits of its type (Bateman & Bierlein, 2007). The decline in the number of Afghans arriving after 1896 is precipitous.

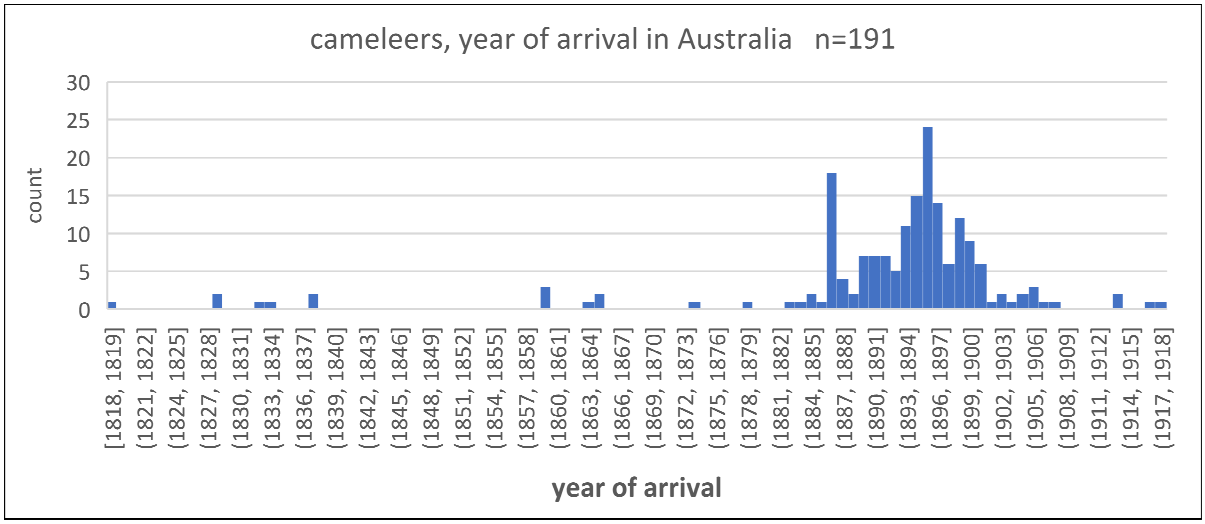

Figure 4: A plot showing the years of arrivals in Australia of individual immigrant Afghans. Data from Jones and Kenny (2010).

There was a wide range in the age of Afghans on arrival (Figure 5), the youngest at 10, a peak in the range 17 to 27, and a decline to 48. These numbers suggest much about family relations operating amongst the immigrants, the very young accompanying older brothers and fathers. Khawajah Bux (Bux, 2017; Korvin, 2004) brought his father to Australia when he, the son, had become successful. This scenario may account for the older group.

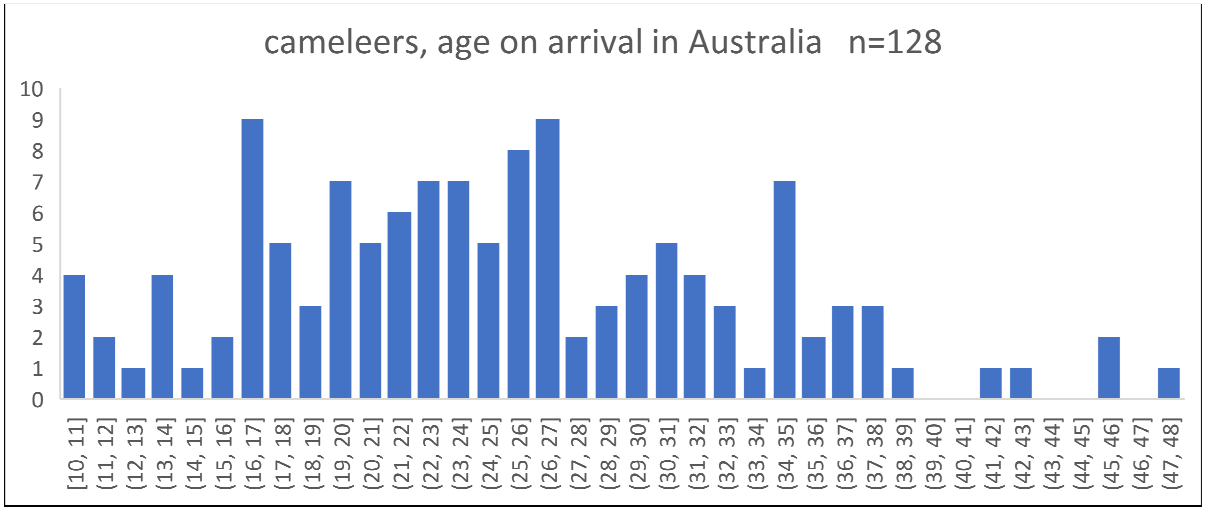

Figure 5: A plot showing the age of the Afghans on arrival in Australia. Data from Jones and Kenny (2010).

In Figure 6, the years of arrivals are plotted for Balochis, Punjabis, and the more numerous Pashtuns. The first two groups continue beyond 1900, but the last Pashtun (in these data) arrived in Australia in 1898, the year after the resurgence of fighting between the British army and rebellious Pashtun tribes (Churchill, 1898). It is tempting to ascribe the cessation of Pashtun migration to this fighting, due either to difficulty of leaving the Pashtun homelands or to young men staying home to fight the British or re-join their Native (as they were known) regiments.

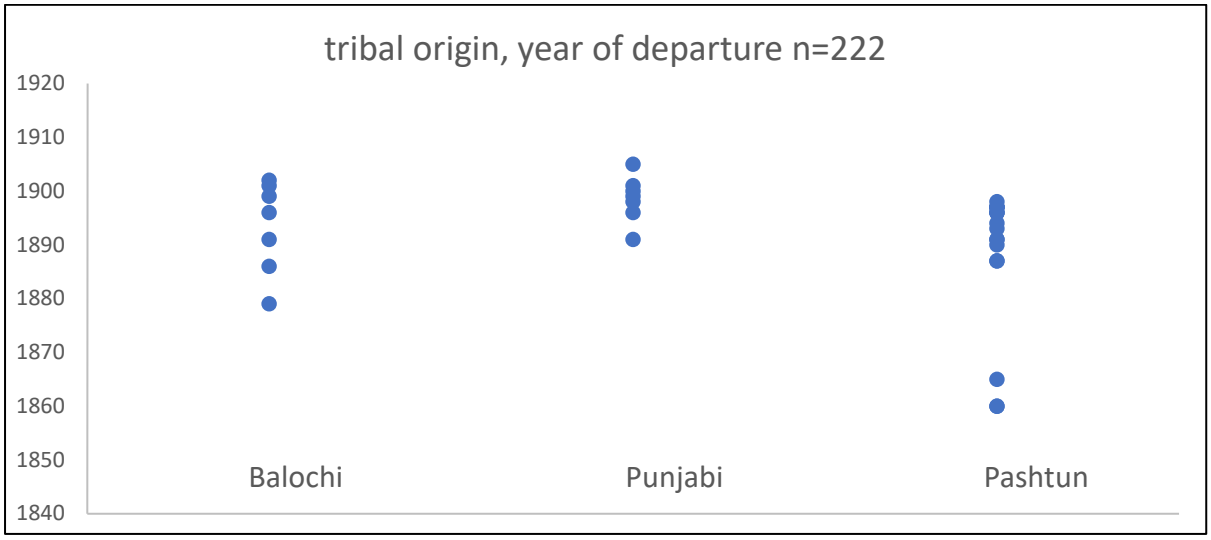

Figure 6: A plot showing the years of arrivals, divided between the dominant tribal groups. Data from Jones and Kenny (2010).

The final plot in Figure 7 shows the year of final departure from Australia of cameleers. Peak departures were in 1905-1915. In the tabulations of data by Jones and Kenny (2010) and Stevens (2002), about 62 Afghans came to Australia in 1892 in the employ of Faiz and Tagh Mahomet, two brothers that had 92 Afghans working for them in 1893. None of the 62 Afghans were recorded as leaving Australia, even though they typically came on three-year contracts. Not all cameleers who arrived in Australia went straight into employment (Stevens, 2002), and some were abandoned by their employers as business fluctuated. Moreover, as many cameleers grew older, they made trips to their homeland lasting for a year to 10 or more years (Jones & Kenny, 2010). Cameleers returning to their homelands for short trips or permanently became more common after 1910.

> A census review of the population of Baluchistan by Mr R. Hughes-Buller, C.I.E., (who) states that it is no uncommon occurrence for a political officer visiting an Afghan village to be addressed in English modified by a broad Australian accent. The speaker will tell one that he has spent many years in Australia, generally as a camel driver. Sometimes he adds that he has 'made his pile' and does not intend to return, and at others that he proposes to go back as soon as the money that he has brought with him is spent. ("Local and general," 1903, February 14).

There is no certainty that the data accurately recorded who left temporally or permanently – many Afghans probably did not know if they would return as they boarded ships homeward.

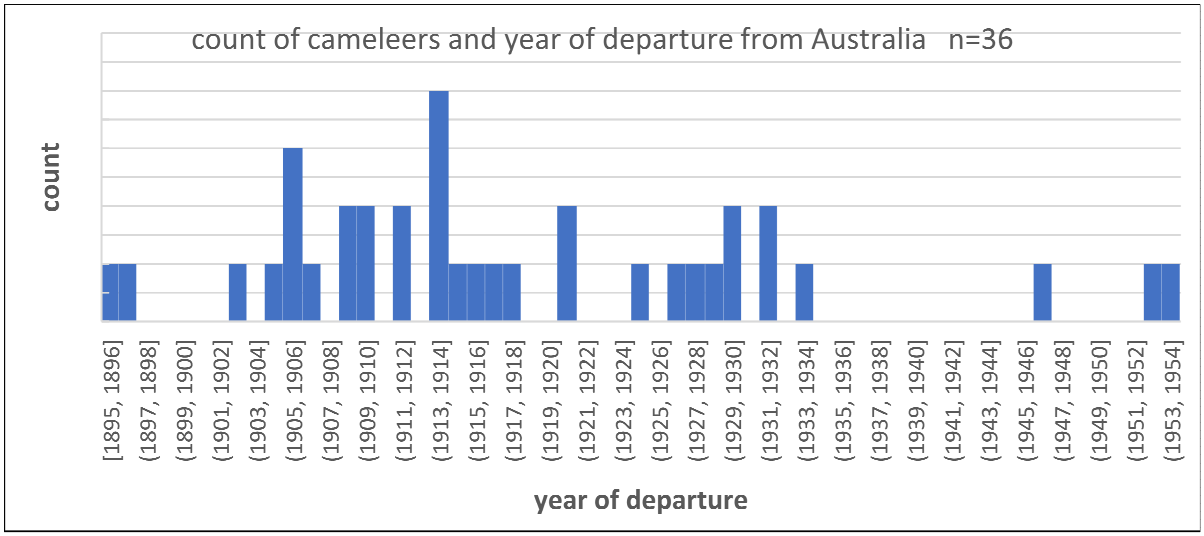

Figure 7: A plot showing the years of final departure from Australia of cameleers. Note the small number of data. Data from Jones and Kenny (2010).

Afghans in Australian and census data

It is difficult to establish reliable data for the number of Afghan cameleers that migrated to Australia. Customs officials compiled records with limited detail and categorised the migrants in various ways: Afghan or Indian for nationality, workers in the cameleer

business and those in other activities. Furthermore, not all those entering Australia were entirely legal and documented migrants (Bux, 2016b).

The primary sources for Western Australia's population are the census data for 1891 (Gale, 1892), 1901 (Fraser, 1902), 1911 (Knibbs, 1914), and 1921 (Wickens, 1926). Furthermore, there is data about the birthplace of those entering Western Australia for all these years, but not for other descriptors such as race, nationality, and occupation. Figure 8 shows these data, together with national figures (Lyng, 1935). The graph shows four Afghanistan-born residents in 1891, a figure predating the major Western Australian gold rushes. The figures for those born in Afghanistan peaked around 1901 and declined from 261 in 1901 to 38 in 1921. The number of Afghanistan-born people in Western Australia is not an accurate measure of those studied in this research as many cameleers and Muslims came from British India that included the Punjab and Lahore (under British Imperial rule from 1850) but predated the Durand line of 1893 (illustrating the insoluble complications in choosing the best terms for denominating these peoples). British India stretched from Bengal and Kolkata on the Hooghly River to Lahore in the Indus River catchment.

The 1911 census (Knibbs, 1914) gives details of 'Non-European Races' and includes their occupation. For those from Afghanistan and British India, there were about 60 in road transport and 60 in pastoral-agricultural-forestry work. Amongst Afghanistan-born residents, 120 were engaged in this work out of 153 listed breadwinners. However, for those from British India, another 325 worked in waterborne transport: British-Indians were overwhelmingly *lascars* (sailors on British ships from south and southeast Asia) and not cameleers. Bengalis, another group in British India, mostly worked in Western Australia as drapers and tailors (Jones & Kenny, 2010).

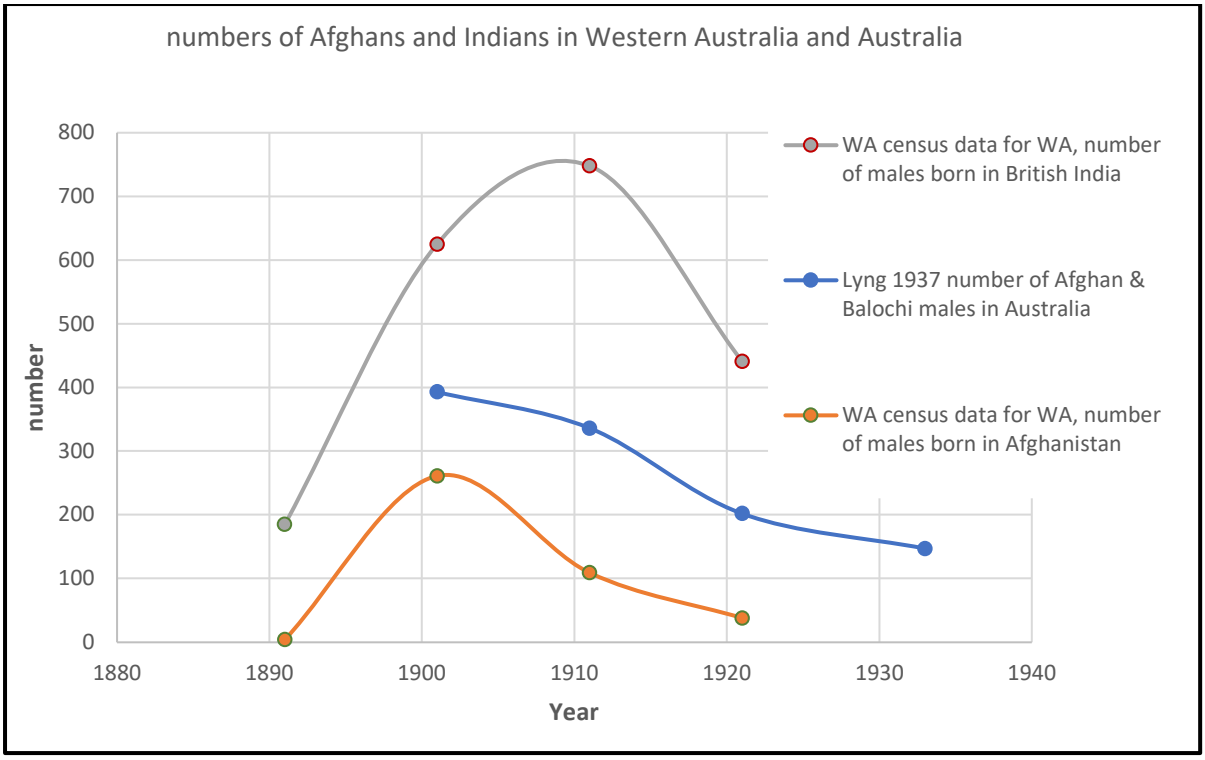

Figure 8: A graph showing the population in Western Australia of Afghanistan-born and British India-born residents from census data for 1891 (Gale, 1892), 1901 (Fraser, 1902), 1911 (Knibbs, 1914), and 1921 (Wickens, 1926).

One other set of census data tabulates religion. People were classed as 'Mohammedan' and 'Hindu' in 1921 but not in 1911, and elsewhere 'Hindu' is used here as an ethnic term. Thus, adherents to Islam in Western Australia (male plus female) peaked at 1517 in 1911 and declined to 826 in 1921. However, Muslim is also a poor measure of those involved in the goldfields cameleering industry, as this category also included Muslim Javanese, Malayans, Filipinos, 'Cingalese' (Ceylonese) and Timorese who were more commonly employed in the pearling industry in Broome, Roebourne, and Exmouth. The decline is most likely related to the Federal Immigration Restriction Act of 1901, one of the first Commonwealth laws passed after Federation. Its purpose was to limit migration, especially Chinese and Asian, and to maintain the British character of Australia.

Most troops that fought in India for the British Empire were Indian and many were Muslim. There are records of eight Afghans serving in the British army (Jones & Kenny, 2010). Khatun (2018) stated that many wealthy Indian families involved in trading sided with the British during the mutiny or uprising, and it is likely that these

families engaged in contracting cameleers and exporting camels. It is possible that some immigrant Afghans had fought against the British, but none are known to have boasted of such loyalties and military exploits while in Australia.

Cameleers and their working life

The sole archaeological study devoted to cameleers, especially with regard to mining that was the on-going work that first attracted them to Australia in numbers, is from Parkes (1997, 2001). Work by Afghans related to mining was delivering machinery and supplies, timber carting to provide fuel for the steam engines and timbers for the mines ("Political," 1906, March 30), and fuel for water condensers. However, cost-efficient carting required backloads from the mines, and examples include the carrying of ore from Metzke's Find to the State battery at Mount Ida for crushing (Western Australian Department of Mines, 1912), the carting of copper ore to the Cloncurry railhead or to Burketown wharf in Queensland as described by Barker (1964), and cameleers carting tungsten ore (a relatively low value metal except during wartime) in the Northern Territory (Paterson et al., 2003). Barker (1964) and Cigler (1986) referred to the importance of supplying remote pastoral stations and backloading the stations' wool clip in South Australia, New South Wales and Queensland. Rajkowski (1987) noted that the change from wool to beef in the pastoral industry in some regions eliminated backloading as cattle were herded to market. This economic change must have had a big impact on cameleering. Drewery (2008) commented on the importance of saddle maintenance, and Barker (1964) on how the Afghans worked better with pack-camel strings and saddles, but Europeans better and more patient with harnessed draught camel teams.

As mining operations advanced into country unexplored by Europeans, so too did the railway network. Cameleers were directly involved in transport work required for railway construction. Camel routes commonly started at railheads. British India built an extensive rail network that reached Peshawar just as construction started in Western Australia (Singh & Kaur, 2015). Many cameleers probably understood the

significance of railways, the initial opportunity for work and of the subsequent threats from that mode of transport to their livelihoods.

Cameleers pursued a variety of careers (Jones & Kenny, 2010). Some initially worked as cameleers and later became owners, dealers, and breeders. Others earned a living as hawkers (especially the Sikhs) or as tailors and drapers in Perth and Fremantle (especially Bengalis). Their involvement in the construction of rabbit-proof fences is attested to by:

> The latest example of the utility of the camel is the fact that they are much sought after to do the carrying in connection with the contracts for the rabbit-proof fencing, and I may mention that there are over 200 camels on the line of fence at present, as also at Laverton, where the carrying of stone to the public battery is done by them, teams being unable to compete owing to the dryness and barrenness of the country to be traversed. ("Taxation of camels," 1903, April 10)

There were Afghan postmen for a while:

> The mails on the Mount Malcolm route will in future be carried by a white man. The Department has made the alteration in response to a complaint of Mr J. W. Hall, who protested against the system of despatching the letter-bags by an Afghan and a camel, neither of whom could read English. ("Between ourselves," 1896, July 11)

Other activities were recorded – explorers, railwaymen, poulterers, market gardeners, shopkeepers, halal butchers, farm and station labourers, sportsmen (wrestling and camel racing), excavating wells and dams, clearing ground for roads, railways and eventually airstrips. Between 1908 and 1910 many worked on the Canning stock route in Western Australia (Schinasi, 1980).

Most Muslim clerics serving the regional mosques were commonly also working men, but visiting and professional itinerant *mullahs* also drew monetary support for travel amongst the local Afghan populations.

The utility of the camel in Western Australia

While this study concerns cameleers, it is worth considering the camels they brought to Australia. It was clear from a very early date that camels had a unique capacity for work in Australia when the first of these animals arrived in Australia on the *Calcutta* in 1840 (Cigler, 1986). The Royal Society of Victoria and the Victorian government organised the Burke and Wills expedition of 1860, including the importation of 24 camels. This choice was perhaps the most successful part of that entire enterprise (Cigler, 1986), and the capacity of camels in the Australian interior was established. Work in South Australia included the transport of goods to and from mines and pastoral stations, and in 1870 Afghans worked on the construction of the Overland Telegraph Line from Port Augusta to Darwin.

Camels have great strength and stamina. A bull dromedary can carry over 500 kg. In a cross-country race ("Local and general: a novel bet," 1906, January 6), one animal maintained a speed of 20 km/hr for four hours. An expedition to the Tanami Desert with loaded camels covered the distance of 2000 km in 58 days with an average daily traverse of 34 km ("Billy Benstead's wanderings," 1910, March 20). The Western Australian Department of Parks and Wildlife (Parks and Wildlife Service, 2014) gave the following figures for camel endurance: able to travel 70 km in a day; survive a week without food or water; can drink 200 litres in three minutes when necessary; and a 50 years lifespan.

The camel imported into Australia was *Camelus dromedaries,* the one-humped camel (Yam & Khomeiri, 2015). Dromedaries can regulate their body temperature over a range of 6 C, and a manageable higher body temperature allows for a greatly reduced loss of body moisture. They have a leathery lining in the mouth that allows them to eat very tough vegetation, and their long necks allow them to eat foliage up to 3.5 m above the ground. Yam and Khomeiri (2015) considered the animal’s capacity to eat salt-tolerant vegetation that is spurned by all other animals as one of their outstanding attributes and especially advantageous in Australia. Horses required fodder to be carried with them, whereas camels can forage on almost any vegetation (Faye, 2014).

According to Bulliet (1975), some in the United States of America also experimented with using camels, but it failed partly because the American Civil War distracted attention before the animals became established. Bulliet (1975) and Faye (2014) attributed the unique success in Australia to Afghan people migrating to Australia in large numbers as cameleers to manage the herds and the pack strings, and that breeding studs were introduced early in Australia. Elsewhere, Europeans working directly with camels achieved little success. The German army used camels to transport fuel in Asia in the Second World War, while in southern Africa, camels were used by the police, military and postal service from the late nineteenth century (Bulliet, 1975). Camels and cameleers were uniquely suited to transport and carrier work, and camels were successfully bred, in the Western Australian goldfields.

It was a frequent comment in the newspapers of the era ("Mining Commission," 1897, September 24; Murray et al., 2008) that camels could be tolerated due to their nearly undisputed utility, despite the disgust the animals generated with their smell. However, their Afghan attendants were unwelcome ("Afghan camel teams," 1904, May 10). European Australians could and did do the same job (Barker, 1964; P.A.K., 1898, February 3), but generally very few chose to take up the demanding, isolated lifestyle. The minimal load rates charged by Afghans, with which European teamsters could not or would not compete, was one of the fundamental criticisms of the camel industry ("Roads Board election," 1897, February 20).

There was near unanimity amongst European Australians about the smell and the irascibility of camels. Some of the antagonism toward Afghans appears to stem from the detestation for their camels. Camels could cause serious injury by biting or by vigorous and unexpected tossing of the head while led on a rope.

> SIR, — Allow me to call attention to the "nostril-scalding” stench emanating nightly from the heterogeneous and abominable intermixture of vile and plague-dealing odors which pollute the breeze coming from Gunny Khan's camel camp. This camp stands on a rocky eminence just on the edge of the town boundary, and is so closely situated to the dwellings of the whites that it is already become an intolerable nuisance and a menace to public health and comfort. What is our Town Council doing to allow this kind of thing to continue? The next move of the Afghans will no doubt be to pollute us from the other side

> of the town, and then Coolgardie will become a veritable valley of horrors, even without the assistance of Mahomet's camp on Fly Flat.— Yours, etc. (Pick and Shovel, 1895, January 3)

Barker (1964) provided more details than any other account of working with camels (he used harnessed teams and carts, not pack camels) in the early twentieth century, and he considered that patience and teamwork was required in draught work, less so in pack work, for both animal and driver.

The Tasmanian-born concert pianist Eileen Joyce grew up in the 1910s in Boulder, and her uncle's camel was kept in the back yard of her family home. To get to the back yard toilet the child had to find her way past the tethered camel (Davis, 2001). Camels were a fact of daily life for everyone in the area at that time.

Race and the Anti Asiatic League

Murray et al. (2008) tabulated a large selection of newspaper articles and letters indicating the largely (but not exclusively) negative sentiment of the time. Many authors (Cleland, 2000; Deen, 2011; Kabir, 2004, 2005; Khatun, 2018; Stevens, 2002) gave a twenty first century perspective on the matter of race relations. As a contrast, I give a few quotes from the time of the cameleers to illustrate the variety of sentiment expressed at the time. The Anti-Asiatic League and F.C.B. Vosper were the prime movers of antipathy.

> The principal address of the evening was given by Mr. F. C. B. Vosper, the goldfields' delegate. The Afghans, as they knew, were Mahommedans, and as such had to conform with the laws of their country. To assist them in carrying out these they, to a horrible extent, polluted the water which on a goldfield was the next important necessity to the air they breathed. Mr. Vosper minutely detailed their religion and methods of carrying it on. On arriving at a well, or wherever water was, their custom was firstly, to drink, then wash themselves, then their clothes, and after that perhaps their camels as well. They did not drink water after the white man, but they considered that the water was good enough for the

> infidel dogs that followed them. He referred also to the manner in which they drifted into other employment, after camel driving, and cited instances at Coolgardie where two aliens at present were actually in the police force. (Sason, 1895, April 26)

In defence of his fellow Asians, Hasan Musa Khan replied, and concluded a letter by saying that he,

> on behalf of my countrymen and Indians, strongly protest against such seditious agitations against us which tend to sow the seeds of discord and bitter feelings in the minds of the ignorant and narrow minded people. The consequence would be, as Mr. Vosper himself hinted, repetitions of Knowles' case (a murder). We appeal to a generous minded public to judge the fairness of our protestations against such agitations. — yours, etc. H. MUSA KHAN. Perth, April 22. (Musa Khan, 1895, April 26)

There were attempts at even-handedness. At the conclusion of another letter by an Afghan (A Friend to the Britishers, 1901, June 22), the editor added

> We have given the writer of the above letter very considerable latitude in regard to length for obvious reasons. We shall be glad to give publicity to letters sent in by Afghans or Europeans giving instances in support of their respective positions in regard to this matter. We want to get at the bottom of the facts of the teamster's case against the Afghan and the Afghan's case in rebuttal. We shall be glad to give publicity to the pros and cons of this important question, but with the distinct understanding that future letters must be brief. — ED

A touring mullah, Sayed Jalal Shah, and others gave several examples of European Australians showing respect for Islamic faith and ritual ("A high priest," 1897, July 30; Sayed Jalal Shah, 1914, September 20, 1915, June 27). Some European Australians did stoutly defend Afghans as a people, one stating (Anglo W.A., 1895, May 4):

> In comparison with the Afghan the majority of our own teamsters cannot "hold a candle" for sobriety, self-respect, kindness to their animals, and civility to strangers. The Afghan or Indian is not foul-mouthed, he is seldom before the police. The whites themselves have by their filthy habits in fouling watercourses,

> catchments, and tanks at Coolgardie and Southern Cross, rendered those places hotbeds of typhoid.

A facet of Afghan lifeways in Australia was the relationship between Afghans and Indigenous Australians. Many Afghan men married Indigenous women but no Afghan women were recorded as marrying Indigenous or European men (Jones & Kenny, 2010). Khatun (2018) recounts stories of harassment of Indigenous girls by Afghan men. Sayed Jalal Shah (1918), in a letter to a Kabuli newspaper, gave an exceedingly negative image of Indigenous Australian people, the equal of the worst images drawn by European Australians. This opinion is surprising, given the very positive picture he painted of Australia more generally. Sayed Jalal Shah wrote in Dari for Afghans, not English for Australians: he did not tailor his views for an Australian audience.

In a specific example of racism, the *Australia Workers Association* and the Anti Asiatic League of Frederick Vosper (Kabir, 2005) were similar to movements in Canada and the U. S. A. Afghans were victims of theories of racial superiority (Kabir, 2004) with accusations of taking jobs from European Australians, and of working at lower rates of pay ("Afghan camel teams," 1904, May 10; Crusoe, 1896, November 23; Willis, 1992). Conflict stemming from commercial competition did descend into violence ("An Afghan shot. A teamster arrested.," 1901, June 8). Afghans did take work from European Australian teamsters, but the teamsters did not generally wish to work with pack camels (Barker, 1964). The Afghan's Islamic faith was not a major point of conflict, but commercial imperatives in most cases overshadowed racial problems. The Chinese were reviled verbally, physically, and legislatively to a much greater degree. This may have been due to the Afghans' smaller numbers compared to other non-Europeans: 0.05% of the Western Australian population in 1896, and one Afghan for 400 Chinese in Australia in 1901 (Kabir, 2004).

The Afghans and Islam

The historical record shows that there are many features of Islam that may be detectable and interpretable in the archaeological record, from the global scale to the

very local. This serves to identify those who were Muslim, those who were not, and to detail the lifeways of the religious groups.

Global context

Muslims were visiting Australia well before the nineteenth century. Muslim maps of the north Australian coast exist from the ninth century (Cleland, 2000; MacKnight, 2011). From around the sixteenth century, Makassar (Sulawesi) Muslims annually visited the Kimberley and Arnhem Land, trading and collecting trochus shells and trepang for the Chinese market. These visits continued into the period of British colonisation.

Aggressive, worldwide expansion of the British Empire during the nineteenth century brought it into direct conflict with the Islamic world. This resulted in the intense and bitter fighting during the 1857 Indian Mutiny or anticolonial insurrection (Spilsbury, 2008) that was in part triggered by incidents that caused offence on religious grounds amongst Muslim soldiers in the British army. In Afghanistan, the uprising of 1897 in Afghanistan pitted local Muslim tribesmen against the British. Najmuddin, an Afghan *mullah* (Edwards, 1996; Qadir, 2015), and Winston Churchill (Churchill, 1898) were participants in these actions, and both left written records. Both Afghans and European Australians in Western Australia knew of this conflict between one side seeking a victory of religion and the other seeking a victory of secular military and economic power.

Mosques *in Islam*

Whereas a Christian priest must be formally trained and ordained to give a legitimate service or mass, the Islamic priesthood or *ulama* has no such institutional training or official ranking, and status is obtained mainly through one-on-one education that

earns the respect of other clerics and the *ummah* (Islamic community). The mosque *(*meaning a place for prostration) in Islam is like a church in Christianity. However, there are important differences: consecration fully dedicates the Christian church as the place of prayer and should be formally deconsecrated when it ceases to be a functioning church. In Islam, a mosque is consecrated by its use in prayer but cannot be deconsecrated. It is not entirely essential for valid prayer except for Friday congregational prayers: the prophet Muhammad said 'All the Earth is a mosque except for the graveyard and the washroom' (book 2 Hadith 169; Jami al Tirmidhi 317). A place may be considered to become a mosque if prayers are conducted in it. The primary features of a mosque (Frishman et al., 2002; Hillenbrand, 1994) that may be accessible to the archaeologist are:

- that it faces the *Kaba* (the Cube, House of God) in Mecca. This compass bearing is known as the *qiblah*. The *qiblah* is 295° magnetic in 2022 in Western Australia. Definition of the *qiblah* (Jiménez, 1991; King, 2019) is complex: it can refer to stars and the horizon, mathematical calculations, architectural precedent, or practicalities of preexisting street or graveyard layout. While there may also be approximations and errors, there is only one correct *qiblah*, and that is toward the *Kaaba* in Mecca;

- that an alcove (the *mihrab*) is built into the wall facing Mecca. This indicates the direction to be faced while praying;

- that this wall is commonly the longest wall;

- that a minaret, meaning place of light, is commonly present, even in vestigial form, to identify the building as a mosque. The minaret has one or more balconies for the *muezzin* (crier) who calls the faithful to prayer;

- that there is a convenient source of water for an ablutions font or pool for performing ritual ablutions;

- a courtyard (Mughal, 2015) and the entrance to the mosque are normally on the wall opposite (in Australia to the east) the *qiblah* (Frishman et al., 2002; Hillenbrand, 1994) and houses the ablutions font or pool;

- a pulpit and dome occur in large mosques, but the features are not critical;

- the absence of religious paraphernalia in Islam, except for the *Quran.* The *Quran* is the holy book of Islam, inspired by Allah via Muhammad who is therefore designated the Messenger of Allah. Objects such as alb and altar, chalice and chasuble are much more important in Christianity.

Thus, it was easy for Muslims to build a ritually adequate mosque in remote parts of the Western Australian goldfields in the nineteenth century.

Mosques *in Western Australia*

Six mosques were listed in Western Australia (Australian Department of External Affairs, 1910) at Coolgardie, Leonora, Malcolm, Bummers Creek, Mount Magnet, and Mount Sir Samuel. There was possibly a mosque and camp in Port Hedland (F.Z., 1911, May 6) from which many cameleers served the Pilbara goldfields. The Perth mosque was built in 1905 after a prolonged campaign starting in 1895 (Musakhan, 1932). A photograph in Fitzgerald (2012) showed a mosque at Braemore station (near Leonora) decorated with what appears to be pressed metal panels like those used in ceilings (the photograph is at low resolution and the original was not found). The pressed metal would be very suitable as decoration in a structure built for Islamic prayer due to the panels' typically geometric designs and without the animal or human forms that are strictly prohibited in Islam (Milwright, 2010).

A mosque was built in 1860 at Marree in South Australia that predates the Adelaide mosque of 1888 (Rashid & Antlej, 2020; Rashid & Bartsch, 2014). At Broken Hill, the mosque was built in 1887 and was described as 'the only surviving mosque built by cameleers in Australia' (*Broken Hill Mosque Museum*, 2021; Musakhan, 1932), even

though it had been moved from its original location. Photographs of the mosque in Cloncurry ("Pictures in the news," 1937, January 9; Rashid & Antlej, 2020) show a small, corrugated iron building with a water tank and veranda. The mosque in Broken Hill also had pressed metal decoration (Khatun, 2018; Stevens, 2002), but Parkes (1997) considered that this was added during 1968 renovations. These panels may be a significant feature of mosques and they may survive in the archaeological record.

Islamic burials

A Muslim grave is formally correct when aligned at right angles to the *qiblah,* with the body lying on its right-hand side and so facing Mecca. Strictly, a grave marker is a simple object without a long epitaph to commemorate the person buried. There may be a pillar (*shahid,* witness or martyr) at the head end or at both head and foot, but there is not always an inscription (Insoll, 1999). A Muslim should be buried within 24 hours of death and, in remote areas, this implies the burial should occur at the place where the person died without transit to an established cemetery (Figure 9).

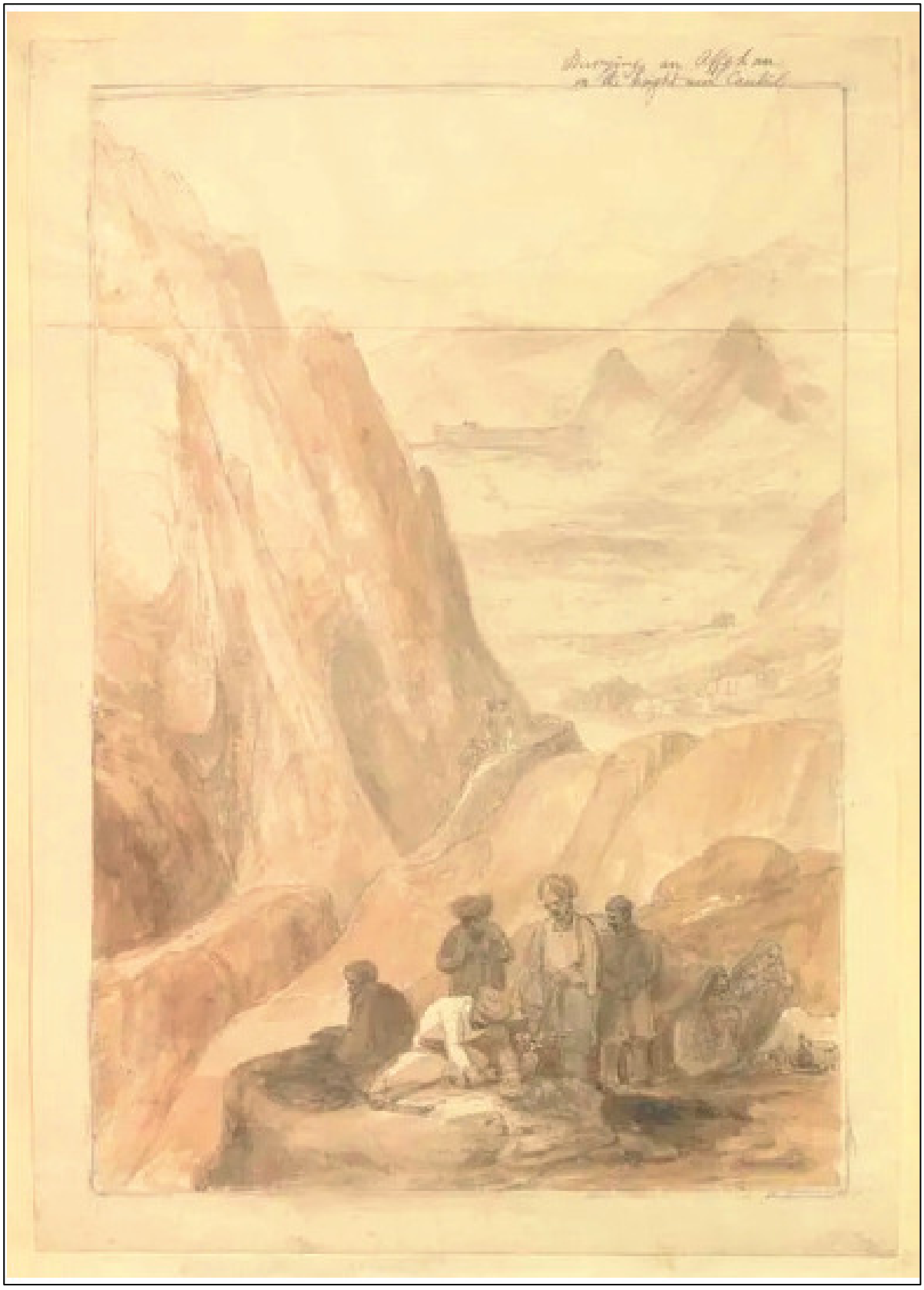

Figure 9: James Atkinson; Burying an Affghan on the height near Caubul (sic); 1840; watercolour, pen, ink; British Library, Asia, Pacific & Africa Collections. James Atkinson was Superintending Surgeon of the Army of the Indus, Bengal Division, in the First Afghan War.

Pirs in Islam

The attitude to eminent *mullahs* in nineteenth century Afghanistan and the frontier with British India was one of great respect. Edwards (1996) described in detail the mythical world in which eminent religious authorities enjoyed religious authority and social/political power. He recorded myths that recount magical or spiritual journeys and deeds of the *mullah*, where he asserted the primacy of his religious power over the political power of the Amir of Afghanistan. Some of these 'miracles' involve the *mullah's* role in political actions or devising social solutions: negotiating treaties between warring tribes, and facilitating marriage agreements. Haroon (2011) understood the role and authority of the *mullah* as different from that of the secular authorities (*maliks*, Muslim Amir, or British Raj). She considered that secular authorities were commonly connected with one of the conflicting parties, or had too little authority over them, and were therefore perceived as partial and unable to impose a truce.

The predilection of the Pashtuns for *pirs* and their shrines in tribal areas was also described by Khan (2018) and Ahmed (1984), and is also due to their role in many uprisings during British rule up to Partition and independence in 1947. Churchill (1898), Edwards (1996), Haroon (2011) and Schimmel (1980) all attested to the reverence held for *pirs* in Pashtun and Afghan society, and the custom of people wishing to be buried near them. Landor (1902) described many *ziarats* in Persia (these were tombs of, or shrines to, respected religious leaders and preachers. It is believed that there can be blessings (*barakah* - Allah's blessings or spiritual benefit) conferred by Allah by visiting these shrines), and these shrines were also often associated with burials of the *pirs'* followers. Pennell (1909) observed the importance of *pirs*, and how the *ziarat* was frequently in remote or inaccessible locations. Sidky (1990) also observed how the grave of a pir or ascetic becomes endowed with mystical power and become pilgrimage destinations.

Itinerant mullahs and religious festivals

It is commonly stated that Afghans were diligently observant Muslims. This is borne out by the history of some of the *mullahs* in Australia, and a few examples are described here. Commonly they were working men and did not make a living by preaching alone. The *mullah* Said Yah Mahomet had business with camel trading that took him to court against his own people ("A deal in camels. Mahommedans in court," 1902, October 6).

Hadji Mullah Mehrban (Jones & Kenny, 2010) was a Tarin Pashtun born in about 1801. He lived and worked as a cameleer in Marree, South Australia, for 30 years as a working cameleer and trader (Stevens, 2002). He later served as *imam* (Islamic teacher or preacher) and caretaker in the Adelaide mosque in the 1890s. He arrived in Coolgardie in about 1894 and lived there until his death in 1897 at the age of 97. At his burial, a gathering of 300 included both Afghans and many Europeans who wished to pay respects ("Coolgardie," 1897, July 31).

Sayed Jalal Shah, born about 1883 and identified as from India, arrived in Fremantle in 1914 (Australian Department of Immigration, 1914) and travelled across Australia from Cloncurry to Perth, preaching to Muslims until 1916 before returning to India (Schinasi, 1980). He sought entry again in 1940, but the Muslim community in Perth judged that they could not afford him. (Australian Customs and Excise Office, 1941).

Mullah ul Lasman from Karachi was reported leading the celebrations in Coolgardie after the Ramadan fast ("Afghan rejoicings after a fast of 30 days," 1897, March 8), the Eid feast. The newspaper described the *mullah* searching for the appearance of the new moon, denoting the end of the fast. The Afghans ‘gave up a shout of joy, prayed, and saluting and embracing their friends and rejoicing’. The itinerant *mullah*, noted for his eloquence and learning and as ‘a young man with a pleasing voice, and as pleasing manners’, preached to 200 Pashtuns in their mosque, and the journalist noted the egalitarianism of Islamic prayer. The Balochis also had their unnamed itinerant *mullah* and a local, Mullah Mirza Khan (Jones & Kenny, 2010), preaching in their mosque. This story indicated the numbers at prayer meetings, with a total

capacity of 300 for the two Coolgardie mosques*. (Western Australian Registrar General, 1899)*.

Cameleers and their Communities

Immigration, Citizenship

Cameleers born in British India were British citizens, and hence had more rights in Australia than they were conceded (Khatun, 2018). Some men who became wealthy and prominent residents of Australia, such as Faiz Mahomet, submitted applications for naturalisation but were repeatedly rejected (Stevens, 2002). However, Abdul Wade was naturalised in 1902 (Stevens, 2005), and Goolam Badoola was issued a passport in 1935 and was described as a British subject (Day & Morrissey, 1995). The qualification for naturalisation included ‘good character’, but this was generally used as a clause to make it impossible (Stevens, 2002).

A conference in 1896 in Sydney consisting of the Premiers of Australian colonies decided to introduce legislation in each colony to restrict immigration of all Asians as had earlier occurred with the Chinese. Several colonies introduced Imported Labour Registry acts in 1897 to restrict the importation of ‘coloured’ Asian labour, and in Western Australia, the 1898 Royal Commission on Mining reinforced the policy of no naturalisation and no mining permits for Afghans (Stevens, 2002).

The White Australia Policy was legislated in the new Federal parliament as the Immigration Restriction Act of 1901. This Act also prohibited travel by Afghans and Asians between States (Stevens, 2002). The tool controlling entry into Australia was the Dictation Test (this could be bypassed by a Certificate of Exemption for Afghans returning to Australia after a trip to their homeland if they had arrived in Australia before 1901). The Dictation Test could include words in any European language (Cleland, 2000). The Roads Act of 1902 managed by district Roads Boards imposed licences to operate and registration fees for each camel. This period leading up to and

after Federation of the Australian colonies with legislation limiting non-British immigration was the beginning of the decline in camel transport industry, as discussed in detail below.

Crime and law

Many murders, as a measure of crime rate, were committed by Afghans against Afghans. Motives were various, such as ‘preventive’ murders, conflicts over women and honour, and possible paranoia that may have been induced by the drug chlorodyne (Stevens, 2002). Comparatively few yet well-known murders were committed across the ethnic Afghan and European Australian divide (Jones & Kenny, 2010; "Murder at Fremantle," 1896, December 11). Other matters of law amongst Afghans involved theft and ownership of camels, and non-payments of claimed debts or wages (Murray et al., 2008).

A teamster named Kelly was convicted of feloniously wounding an Afghan in a conflict over road use (The man in the street, 1901, August 17). This contrasts with the not guilty outcome of a murder charge against a European Australian, Knowles, in a clash at Afghan Rocks over the use of water by Afghans (Khatun, 2018). In a case against a prominent prospector who had the ‘Wealth of Nations’ gold mine, John Dunn, an Afghan won a case for payment of wages ("Prospector and Afghan," 1906, March 1). Thus, while there were inconsistencies before the law, the full story is mixed.

Secular ceremonies and celebrations

While their Muslim faith and tribal affiliations set the cameleers apart from Christian society, they were also commonly keen to be seen as a respected part of the goldfields community and loyal subjects to the British crown ("Departure of the

Governor. An Afghan presentation," 1896, March 30). A few examples illustrate their participation, and their reception.

Despite the negative impact of railways on camel transport, the arrival of the railways in Coolgardie in March 1896 ("Opening of the Coolgardie railway," 1896, March 25) was a cause for great celebration. A ceremony at Hampton Plains homestead (southwest of Coolgardie) included an address to the Governor of Western Australia, Lt Col Sir Gerard Smith, Afghans declaring loyalty to the Crown and pleading for justice to Afghans, and a gift to the Governor of a riding camel ("Departure of the Governor. An Afghan presentation," 1896, March 30).

In July 1901, the Duke and Duchess of Cornwall and York visited Western Australia, and a parade of cameleers was invited to participate in Perth ("The Royal Visit Duke and Duchess in this State," 1901, August 3). Afghans' contributions also included a camel race and a speech with a declaration of loyalty to the British throne by Afghans of both British India and of those from the realm of the Ameer of Afghanistan.

> Half a dozen richly dressed Afghans led a splendid camel of the finest quality, with beautiful trappings, said to be worth over £100, towards their Royal Highnesses. ("The Royal Visit Duke and Duchess in this State," 1901, August 3)

The arrival of the water pipeline in Coolgardie was a similarly festive day:

> The opening of the goldfields water scheme in January, 1903, was one of the great events held in Coolgardie. Water was often a rarer and more valued commodity than gold. The ceremony was presided over by the Federal Minister for Trade and Customs, the State Premier Sir John Forrest, and the mayors of Kalgoorlie, Boulder, and Coolgardie.
>
> The town was en fete. Bunting was liberally displayed on all the buildings,…. gaily caparisoned camels, ridden by Afghans dressed in truly Oriental gorgeousness, flew about the streets. ("Goldfields water scheme Arrival of the Federal visitors," 1903, January 25)

Families

When Afghan cameleers came to Western Australia, their wives and families were not part of the work contacts (Rajkowski, 1987; Stevens, 2002). Many arrived in Australia alone as young men, perhaps in the hope of saving money to pay the *mahr* (a sum of money promised to be paid to the divorced wife on demand) that was a traditional prerequisite for marriage in their homeland. They then settled into a male-only society concerned in the first place with work, and in the second place most likely with religious observance. The male Afghans also commonly lived together in their camps in the goldfields. Jones and Kenny (2010) listed some residential addresses in Perth, including three Afghans at 220 Brown Street, East Perth, four at 74 Aberdeen Street, Perth, two at 132 William Street, Perth, and two at 21 Harwood Place, Perth. Some of these addresses were owned by successful Afghan businessmen, and rooms were likely rented out to countrymen for long- or short-term stays. Many were invited by relatives already in Australia (Bux, 2018b) and lived and worked with them.

Almost all these men were celibates, the gender ratio being 10:1 in Western Australia in 1897 (Deen, 2012). The autobiographical tabulation of Jones and Kenny (2010) gave some information on family relations amongst the Afghans and their Indigenous and European Australian hosts. Women with Afghan men, as shown in this tabulation, were varied: widows, Indigenous, European, Indigenous-, Afghan- or Indian-European, and daughters of these women and Afghan men. Many of the women assumed Muslim personal names and became Muslim, even if only to make the marriage. All Afghan women who married in Australia had Afghan husbands and none were recorded as marrying outside their community. In the historical record it is difficult to determine who was south Asian, who was of mixed parentage, and who simply took on a south Asian life for one reason or another. Many children were also listed. Out of more than 1300 records (Jones & Kenny, 2010), 10% of the tabulation includes references to wife and/or children. A contemporary report of two cross-cultural marriages was given approvingly by Sayed Jalal Shah (1915, June 27).

Considering both the fragmentary nature of the records and the nature of Muslim marriage, evaluating the number of Afghan women coming to Australia is difficult. The two wives of Khawajah Bux arrived in Fremantle (Bux, 2017, 2018a) in the 1880s but precise dates were unclear. He was a successful businessman in Northbridge, a suburb of Perth. The names of his wives were not recorded in Bux's autobiography (Korvin, 2004), and these women were almost completely invisible in the historical record. Afghan men were evidently very insistent on maintenance of *purdah* (literally means 'curtain' in Persian but is best defined as a social custom as 'seclusion').

The 1911 census counted six 'females full-blood' Afghans in Australia (Kabir, 2005) . However, there were only three females counted in Western Australia in the census as Afghan and Balochi, and these were 'half-caste' and children below 14 years of age (Kabir, 2005). These were possibly the daughters born in Australia from mixed marriages. There were no 'full-blood Afghan or Baluchi born females' counted in Western Australia in any of the four censuses between 1891 to 1921. While the facts of Khawajah Bux (Bux, 2017, 2018a) show this was not strictly true, it does indicate how few there were in Western Australia. Due to *purdah*, it is probable that census-takers were not introduced to Afghan women in Australia.

Family evolved as an important part of life toward the end of the industry. Goolam Badoola Rind (Day & Morrissey, 1995) arrived in Australia aged 15 in 1875, worked with camels, bought pastoral leases, and in 1917 married Marian Martin, an Indigenous-Malay woman. Their children were sent to Balochistan when she died, and Goolam returned there soon after, dying in 1958. A great (but unknown) number of Afghans returned home after only a few years, so it may be suspected that many Afghans who remained for a long time had a wife and children in Australia.

A unique record (Bux, 2018b, 2019) showed the attitude to education of one Afghan. In his autobiography, Bux wrote forcefully about the importance of Western education and learning English, lest his people fall behind the Hindus in quality of life. Bux also explicitly extended this attitude to the education of Muslim girls. This was the man who, in earlier days, had kept his wife in strict *purdah*.

Business and cooperation

There was a necessity to maintain business relations with European Australians. A cameleer needed a variety of business relations to secure freight contracts, hire co-workers and buy supplies, while banking facilities were needed to take or pay off loans and to safeguard savings. Papers left by the business of Baram & Mirza (Baram & Mirza, 1905) show a wide range of dealings: a Post Office Savings Bank account in Coolgardie; a Western Australian Bank cheque account; camel brand registration; an application to build a condenser in Coolgardie; send telegrams on various private matters; and accounts with storekeepers.

Much business was done amongst the Muslims and Afghans themselves, such as *halal* butchers. Many Afghans went into business on a large or small scale and managed general stores. Faiz and Tagh Mahomet owned one of the largest stores with various branches in Western Australia (Stevens, 2002). Jones and Kenny (2010), in their brief biographies of cameleers, show that many of those who came to Australia early (1892) were contracted to the Mahomet brothers. One figure, Fakhruddin, had a pastoral property at Sir Samuel on the road to Wiluna (Application for a Pastoral Lease number 1183/102, 1901) and stores in Sir Samuel ("Fakhruddin's store at Sir Samuel," 1909, October 9). Afghan carriers avoided problems associated with union bans on contracting Afghan carriers by supplying Afghan stores ("Afghan camel teams," 1904, May 10). Court cases amongst Afghans concerning payment of loans or instalments were common news items, some involving Fakhruddin ("Malcolm," 1907, June 7). The Islamic ban on charging interest, *riba*: Surah 2:275-280 (*The book on salat (prayer)*, 2020), was a restriction on business transactions. Hindus (commonly traders not cameleers) were abominated by Muslims for charging interest, but Muslims would take on such loans. Between themselves, they would simply charge higher prices with repayments in instalments (Stevens, 2002).

While Barker (1964) described incidents on the road with camels where he cooperated with Afghans, it seems more typical that there was a tacit agreement between Afghans and European Australians to keep their affairs separate to a degree ("Malcolm," 1907, June 7), a view supported by the autobiography of Khawajah Bux.

The few European Australians that appear in his writings were almost all customers, but many of the business dealings, such as importing camels (Bux, 2019), appear to have involved Afghans and family only. This pattern is also observed with the Mahomet brothers.

A final case of cultural interaction observable in the archaeological record is in the engraving of epitaphs on headstones. This work is specialist, and ‘do it yourself’ engraving is not a realistic alternative (personal communication, mason at Midland Monumental, Perth, 2021). Examples of headstones at Sir Samuel, Coolgardie and Cue show close cooperation between monument masons and Muslim clients in engraving two or more languages and two calendrical notations on a gravestone. Rancorous race relations commonly took second place to the commercial imperative.

Conflict

One of the most common criticisms of Afghans was their alleged monopolisation of the roads. Compounding this was the extreme fear horses had of camels before becoming accustomed to them (Barker, 1964). It was repeatedly alleged that Afghan cameleers would not move aside for faster European Australian teamsters or buggy drivers ("An Afghan shot. A teamster arrested.," 1901, June 8) or that they exacerbated the effect of horses’ natural fear of camels to disrupt traffic ("General gleanings. On the Coolgardie goldfield," 1894, October 11). It is impossible in the present century to understand the level of deference European Australians in 1895 considered proper, and what level of assumed equality was believed to be importunate (Murray et al., 2008).

There were many accusations that Afghans fouled drinking water or forcibly occupied the areas around bores and wells. After a police enquiry, the Police Commissioner rejected this as unsubstantiated ("News of the day: Afghans," 1901, September 5), but the murder of Afghans at Afghan Rock was an outcome of conflict over water usage (Khatun, 2018). Reports by travellers in Asia from an equally European perspective showed the same attitude. Landor (1902) described his travels in Iran and

his shock at the toleration of dirty water. Peters (1994) recounted similar disregard for cleanliness of drinking water during *hajj* pilgrimages in nineteenth century Arabia.

There were frequent newspaper reports by those of European sensibilities that were published in newspapers about the way camels were treated by many of their Asiatic owners. Cruelty to camels by forcing them to continue to carry heavy loads despite wounds and saddle sores due to poorly maintained pack saddles resulted in court appearances and fines. There were issues with mistreatment of mange (Afghans evidently treated it by scalding, not by the recommended use of tar and oil or turpentine or kerosene), and not reporting infestations to stock inspectors ("Coolgardie, Oct. 21," 1901, October 29). A common Afghan method of treating mange using fire was considered cruel by the courts ("General news," 1897, April 16). Landor (1902) made very similar observations on the treatment of animals in Persia.

Subsistence

The study of subsistence is important in that it establishes the modes of a fundamental activity. Evidence of subsistence can identify distinct groups, and status and distinct lifeways (settled or mobile) can become apparent. There is little published on Afghans' eating habits, yet ferro food cans and glass bottles form a very important component of the archaeological record in arid Western Australia. Drewery (2008) stated that Afghans ate curries and kebabs communally from large enamel bowls and drank tea with condensed milk that was very sweet. Kempton (2005) wrote of goat, lamb, curry, and dates. A contemporary account (Mrs Meer Hassan Ali, 1917) described stews, curries, rice, preserved fruit and kebabs, all eaten with the fingers, and the absence of tables, cutlery and glassware. It is uncertain how much canned meat they would have consumed since canned food was cooked by non-Muslims, and the Muslims could not be sure that the animals had been slaughtered in the correct manner or that there was no pork used. Hence, Barker (1964) believed they suffered a shortage of meat in their diet, yet Philo-Afghan (1897, February 4) commented on their large purchases of mutton. Islam prohibits the consumption of alcohol, and since glass bottles are well preserved in the archaeological record, this will be examined below.

Summary and conclusions

This historical and textual account of the Afghans who became cameleers in Western Australia describes elements of their lives in their homelands, as well as historical details on their lives in Western Australia. These details reflect both Muslim and Asian life and the exigencies of living and working in the cameleer industry in Western Australia. A particular point of interest is not simply how they lived in Western Australia, but how their experiences and expectations of life in Asia modulated their experiences and customs in Western Australia. These historical details combined with archaeological data give a richer image of lifeways in the goldfields.

CHAPTER 3

METHODS, MATERIALS AND HISTORICAL RECORD

In this chapter, ‘methods’ refers to the approach taken to document and interpret artefacts while ‘materials’ are the artefacts found. The ‘historical record’ consists of documents relating to and describing the materials found, the sites surveyed, and information about the Afghans’ homelands and culture in the period researched. The chapter also explains the reasoning behind selection of sites for survey. Sites varied in character and therefore required differing methods that are explained below. Selection of materials and methods are derived in some cases from the critical literature review, as previous work showed the type of materials that may be expected, and the methods used in previous research.

Methods of gathering and presenting field data

The standard techniques as espoused by (Burke & Smith, 2004) were used in the fieldwork. The study by Parkes (2009) in eastern Australia established criteria for identifying the presence of Afghans in the archaeological record, and these criteria were used and modified in this study in Western Australia.

Recording and interpreting artefacts

Where appropriate, regular transects (spacing varied from site to site, from 5 m to 1 km) were walked and tracked by a handheld Garmin GPS device. The location of artefacts and other features discovered during field surveys were entered into a Microsoft Access accession database, and further described in terms of a hierarchical system of **Ware** and **Function** with categories drawn from Orser (1988) but adapted

to include foodways, personal, structural and trade functions (see the database in Appendix 1). Artefacts that appeared relevant to the research aims were fully described in the field and some collected. Such relevance was inferred from the interpreted function of the artefact and whether it implicated Afghan cameleers, from the interpreted age of the artefact, and whether the age coincides with the age-range to which this research is limited. Otherwise, all artefacts were described in the field where they might inform on multiple (simultaneous or sequential) occupation and use of an area, and where these artefacts could indicate ethnic diversity and other functions in parallel with use of the area by peoples other than cameleers. Where a particular artefact is described, it is identified by an artefact ID number in the database. Specimens were collected where they appeared to be of special importance or were examples in good condition of an important class. Artefacts were not sampled where they were not considered of special relevance. Cans and bottles were mostly described in summary form.

Spatial analysis of remains on a site may identify areas used for many specific purposes. There may be patterns in campgrounds that echo family compounds in Afghanistan, or simply areas devoted to cooking and sleeping. Special areas may have been set aside for prayer. Some areas may be devoted to maintaining cameleering equipment such as saddles, or to loading camels. Camels were not always kept in a holding yard and were commonly hobbled to range freely to forage for food.

Methods used in recording structures and campgrounds

Methods used to describe features such as structures or their remains included detailed recording of dimensions with a tape measure and orientation with a magnetic compass. Construction materials were noted, as were features indicating construction methods. In some cases, photogrammetry was used to construct three-dimensional composite images of features that could be used as a basis for drawing.

Can dumps

Previous work (Bolton, 2009) showed that can accumulations are a common and potentially important feature of campgrounds, yet no methodology for the feature's study has been fully developed. Very large numbers of cans were found but it was not viable to record each can. Therefore, visual approximations were made of the total number of cans and numbers of the various types present. There were large accumulations at some localities consisting almost exclusively of 'hole and cap' cans where solder was used to seal the caps in the lid (Rock, 1993; Rock, 1984), with almost no other artefacts in association nearby.

In this thesis, can dumps were assigned by physical form and density to one of three classes:

- can dumps comprised more than a hundred cans that piled up to several cans deep and in direct contact with each other;

- can scatters comprised scores of cans, but were not piled up or in direct contact with other cans;

- isolated cans consisted of one to 10 individual cans over an area of approximately 10 m, often with no cans at all for many metres beyond this zone.

Graves and cemeteries

Cemeteries and graves associated with Muslims are a relatively common feature of towns in the goldfields (Parkes, 2009). These were investigated to establish the characteristics of Muslim burials but a 'Muslim style' is not entirely unambiguous (Simpson, 1995). When recording these features, the possibility of a meaningful arrangement of graves was kept in mind, such as around the tomb of a Muslim *pir* or *mullah* (Ahmed, 1984). Burials and cemeteries were examined at most sites (Figure

10). Records were made of location, dates of death, orientation, epitaphs, and ornamentation. Visits to the main Perth metropolitan cemetery of Karrakatta and to the cemetery in the eastern Perth suburb of Guildford established the characteristics of known Muslim graves to permit comparison with graves that may be of Muslims.

Materials and artefacts

Artefacts and Afghans

In previous research, few artefacts have been found that are unambiguously related to the camel transport industry in Australia (Parkes, 1997; Stevens, 2002) and even fewer that were unequivocally Afghan in origin and use. Therefore, it is necessary to carefully anticipate the types of artefacts that one might find that could have strong association with Afghans and cameleers. Camel-related artefacts may include nose-pegs, bells, camel decorations, remains of saddles, harnesses and buckles, and water tanks. Cameleers used awls for repairing the packsaddles. Camels have soft feet and were not shod like horses or mules, so some camel-related artefacts differ from those used by equine species. However, many pieces of equipment such as hobbles are common to both horses and camels. In a camp used exclusively by Muslim Afghans, there may be a total absence of alcohol bottles. Furthermore, Muslims did not eat pork as it was considered ritually unclean, and so commonly ate canned fish (Parkes, 1997). Decorative features should conform to Islamic restrictions on representations of the human form. Deviations from norms may be more informative than conformity.

Occurrence and preservation

When considering the significance of an individual artefact, it is important to consider what goes into the mere presence of the artefact at the site (Fagan & Durrani, 2016).

Firstly, an object must be brought to the site. It must be useful for people's lifeways – e.g., enamel dinner plates – but not excessive or burdensome, such as a table setting of fine English soft-paste porcelain. Once on site, an artefact may be abandoned, such as a food can that is abandoned when empty. Glass tumblers may be rare but, if shattered, are useless and entered the archaeological record. This contrasts with equipment that is necessary to the activity that can be repaired and equipment that would rarely break. A pannikin for drinking in a desert is essential and should never be lost (and if made of iron it should never break) so pannikins might have been ubiquitous but may be rarely found. Finally, an artefact must survive after it enters the archaeological record. In the context of Afghans in Western Australia, textiles, and wood in artefacts such as prayer mats and packsaddle frames were likely part of the equipment of every Muslim cameleer but were quickly consumed by ants and termites (natural site modification processes) very soon after loss or discard. These types of artefacts are unlikely to be found in the archaeological record, even though they were probably ubiquitous at the time. Iron-based articles such as hobble chains may be valuable and strong and rarely abandoned but will survive on the surface in a matrix that is dry, as will glass and ceramic. Other processes that may damage or destroy features or objects of archaeological interest include collectors, land clearing for new buildings, railways, roads, and mining. Natural site formation processes in the form of weather events can damage and disperse artefacts through the action of wind, rain and colluvial action.

Landscape as an artefact

The result of human intervention (physical or perceptual) into topography produces a landscape, an artefact type discussed generally by Rubertone (1989) and Fagan and Durrani (2016). Parkes (2009) discussed landscape in the specific context of cameleers in New South Wales and South Australia. In Western Australia, the natural geology and geomorphology is preeminent: geology determines where the gold occurs, and hence where people initially went. Where modified, geography may be exploited by the people making modifications: shelter from weather, water sources, forage for animals, and by changing perceptions of the geography in accord with

cultural principles. Trenches, pits and piled-up earth and rock may be part of a dwelling. Geography may become a landscape, such as a railway, when conceived by people as a boundary between societal precincts. Neighbouring settlements may be separated, for various reasons, by prominent, naturally formed ridges, valleys, or gullies.

Landscape features may become culturally mythical or religious, such as *Safa, Mahwah, Zamzam, Muzdalifa* in the Islamic *hajj* pilgrimage to Mecca (Armstrong, 2002; Peters, 1994). Location and form of burials are commonly modulated by geomorphology through ease of excavation of the pit and the availability of stones or timber for constructing the grave. The incorporation of burials and grave accoutrements into a natural environment forms a landscape.

Sources of documentary data

This study concerns a recent and partially documented historical period. A wide variety of documentary data are available for examination, ranging from newspapers, governmental and official records, and interpretation of remote-sensed imagery.

Primary textual sources

Contemporary texts and historical documents support the study of Afghan cameleers. A detailed study of primary sources held at the State Records Office of Western Australia, National Archives of Australia, Trove (National Library of Australia: digital scans of newspapers, historical societies) and accounts written by Afghans for the period 1887 to 1920 provided much information on the lifeways of Afghan people in Western Australia, and where there were opportunities to make substantial archaeological interpretations of Afghan people's lives.

Geological Survey of Western Australia

The Geological Survey of Western Australia has a data archive dating from 1850, through the 1887 discovery of gold at Yilgarn and Southern Cross, to the present day. This state government agency published early geological maps showing the location of gold-bearing rocks (Riganti et al., 2016), databases of mines, records of production (Geological Survey of Western Australia, 2021), and the location of state owned ore-crushing batteries (Adamides, 2000). These all map the timing of the advance of exploration and mining across Western Australia. Since mining was the initial driver for cameleer work, they provided a means of estimating the age of features discovered in this work.

Landgate

Landgate is an agency of the state government of Western Australia with responsibility for maintaining records of property ownership, land title and valuation, and location information. It has also been known in historical texts as the Department of Land Administration, the Department of Land Information, and as the survey department.

Documents from Landgate provide details about the dates for the gazetting of towns that indicate when localities reached levels of size and importance, mapping the growing status of these areas, and shows where Afghan cameleering was potentially a profitable enterprise. Compilation of these dates refined the timeline of development. Stereoscopic aerial photography from 1963 was used to search for structures at one campground in Coolgardie.

Railway construction

A set of data available from Rail Heritage Western Australia gave dates on when railways were opened (Austin, 2011). Much camel transport work was from railheads out to remote mining centres (Figure 10). Therefore, railway construction dates mark the growth of the settlements that had a railway station and trace through time the evolution of camel trade routes.

Dating sites

Dating features and artefacts such as food-can types, glass, ceramic, or distinctive metal objects by reference to the literature may be of low chronological resolution (to a decade) but can set limits: an artefact must postdate its type's first creation but may survive in use long after manufacture ceased. Other textual information such as Trove newspaper accounts can set precise dates for the introduction of artefacts, the development of sites, and events. The year a town was gazetted, the construction of railways (also because the Afghans would have transported much of the supplies), the erection of state batteries for crushing ore from the local district, and the trajectory of gold production in the local mines (using data from the Geological Survey of Western Australia) is a guide to the timing and intensity of cameleering by Afghans.

Imagery

The historical record gave the precise location of some sites, allowing their examination by aerial imagery. In addition, aerial photography was used to seek by analogy the remains of other, hitherto unrecognised, sites and features elsewhere in the goldfields. Aerial imagery obtained via colleagues at Southern Geoscience Consultants (Perth) were studied for patterns in vegetation related to camel pads; a

digital terrain model for very subtle topographic features; radiometric data for structures built of calcrete (through high uranium content in calcrete); and aeromagnetic and infrared imagery for features not apparent otherwise.

GIS compilation

Data on railways, towns and mining were compiled in ArcGIS to generate maps in one-year time slices. The volume of data available through various sources permitted this, and the very fluid cultural landscape and the rapid advance of gold exploration in Western Australia in the 1890s required this degree of detail to map the advance of mining and hence camel transport.

Site selection

Sites of Afghan occupation

Selection of sites for study was based on indicators of the apparent importance of areas for Afghans and cameleering: Afghan presence, precisely known location, and manageable extent. Some cadastral maps from the State Records Office of Western Australia (source cited for each site) of the goldfields show reserves denominated ‘Asiatic campgrounds’ and used either semi-permanently or while in transit. In addition, a federal government document (Australian Department of External Affairs, 1910) listing six centres with mosques – a place diagnostic of the presence of Afghans (Parkes, 2009) – is an important historical source showing sites important for Afghans in Western Australia. However, it is very likely there were mosques elsewhere (Fraser, 1902; "Menzies Municipal Council," 1898, February 5). In the Literature Review of Chapter 1 and in Chapter 3 under ‘Materials and artefacts’ field criteria established by Parkes (1997, 2009) for identifying sites occupied by Afghans were discussed. The

sites selected for survey using these sources are shown in the map of Figure 10. Guildford and Karrakatta were investigated as examples of Muslim burials. The old mining towns of Sir Samuel and Kathleen were considered as examples of small sites of concentrated European settlement for purposes of comparison. Criteria are discussed below for each site in greater detail.

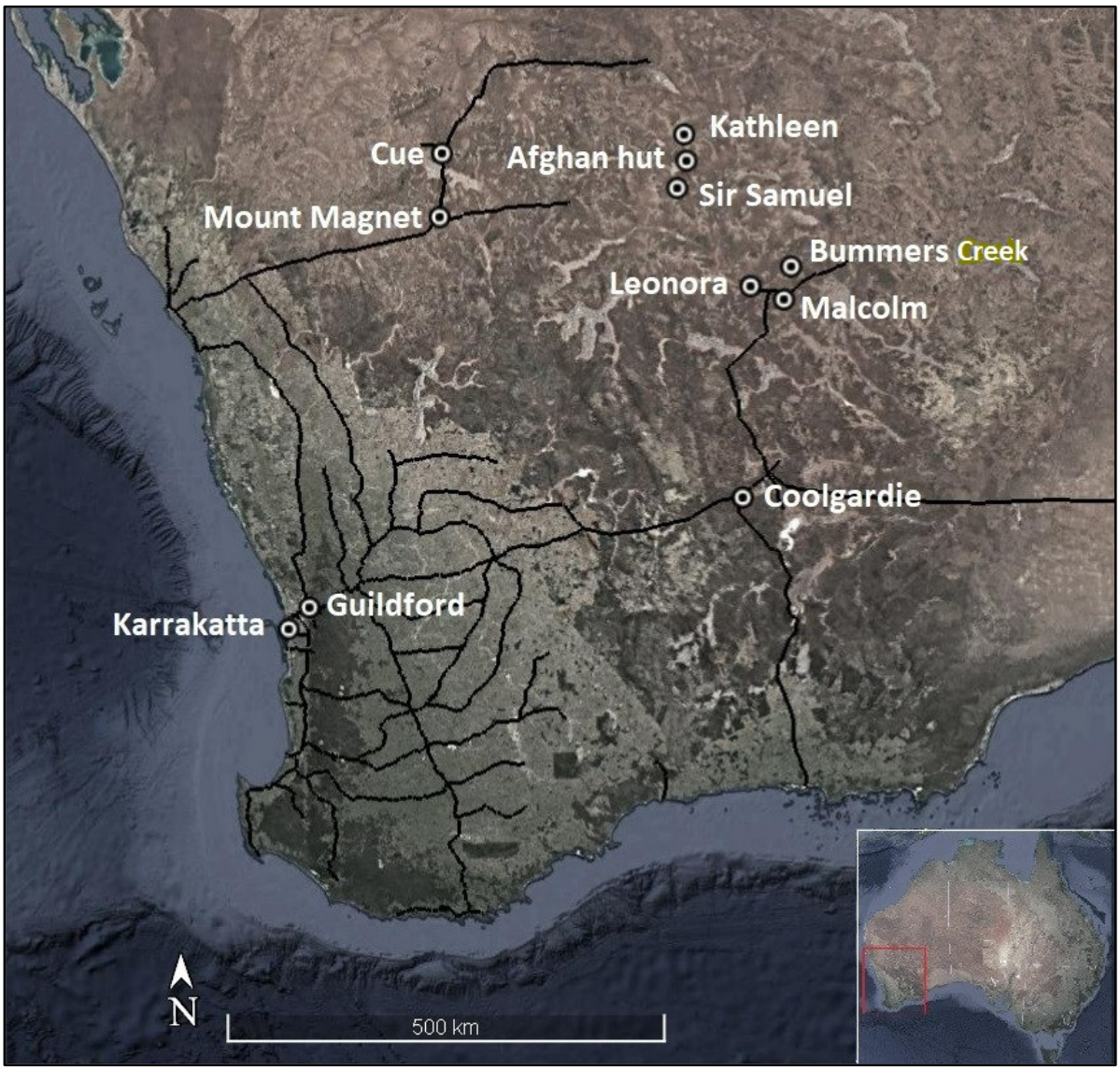

Figure 10: A map showing the location of the sites examined for archaeological artefacts and described in the text. Black lines are State railways at their maximum extent.

Sites selected for comparison between Afghan and European Australian occupation

It was considered necessary to examine sites that were used by European Australians as settlements around mines and with no known occupation by Afghans. While criteria have been established for distinguishing sites used by Europeans versus Afghans (in New South Wales and South Australia) by Parkes (1997), it was important to clarify these criteria and ensure they applied to Western Australia. Two areas were selected for this purpose (Figure 10). The Kathleen Valley site is 7 km north of Afghan hut, but no record was found suggesting any association with Afghans. Sir Samuel is 7.5 km southwest of Afghan hut with evidence from the historical record for the presence of Afghans (Musakhan, 1932) yet no evidence of a designated camping reserve was found in the historical record. Both sites were mining centres, and they were archaeologically surveyed to refine the criteria that distinguish between those sites occupied by Afghans and those occupied by European Australians.

Specific methods used at specific sites

In Coolgardie, the historical campground measured 500 by 350 m, and was surveyed by regular transects with 20 m spacing, wider than usually recommended. Abundant leaf litter was limited to the base of scattered trees. Beyond the base of trees, bare orange-brown sand and gravel surface soil allowed approximately 95% ground visibility and an overall average of 80% visibility. Moreover, in areas with dense scatters of artefacts, line spacing was reduced to 5 m or less, as appropriate.

The Cue and Malcolm sites were surveyed using pedestrian transects. As the surveys proceeded, it became clear that artefacts were not *in situ* due to site disturbance so the regularly spaced transects was abandoned. Nevertheless, form, type and location of significant artefacts were recorded, despite the fact that location data could not be used in detailed interpretation.

At Leonora, pedestrian transects were made at a 25 m spacing over an area of 450 m northeast-southwest by 250 m northwest-southeast in the area indicated on cadastral maps as the Asiatic campground. Visibility was very good (90%) owing to the few trees present. A mosque site (Fitzgerald, 2012) at Braemore station northeast of Leonora could not be located.

Mount Magnet and Cue were visited briefly despite the lack of precise locations of campgrounds related to Afghans. Only the cemeteries were examined.

A site near Sir Samuel known locally as Afghan hut comprised an area of about 45 by 40 m enclosed by a modern protective fence installed in the 1990s by the mining company X Strata. This area was surveyed with transects 5 m apart. Outside this fence, less regular transects over a large area radiated from the hut for up to 3 km.

The Bummers Creek site occupied a relatively large and ill-defined area measuring 3 km square. Primary sources gave few historical details and no precise location for the area occupied by Afghans, but Landgate (2020) gave a very approximate location for the town site. Traverses were made by vehicle along the many fair-quality station and prospector tracks in the area, with pedestrian traverses to locations indicated by imagery as worthy of investigation. Visibility was very good, averaging 80 or 90% since the area was very sparsely wooded. It was not feasible to do systematic pedestrian traverses, given the extent of the site and the uncertainty of where Afghan-related artefacts might be.

In summary, the methods used were a combination of standard archaeological techniques with the addition of methods that were adopted because of the specific circumstances (site clearances), requirements particular to this study (historical record, railways), or because of unusual opportunities (data on mining history). Selection of sites made use of the data available that bore on the specifics objectives of the project.

CHAPTER 4

RESULTS OF FIELD INVESTIGATIONS

Compared to other cameleering centres in Australia – Marree, Farina, Broken Hill, Alice Springs, Cloncurry – research in Western Australia has received very little attention. Cigler (1986) devoted as many pages to the single settlement at Marree as to Western Australia. To correct this lacuna in archaeological data, this chapter presents the results from field survey of nine sites (Figure 10) in Western Australia: towns, town sites, cemeteries and other sites that had Afghan occupation. Two sites that were surveyed to provide data to allow a comparison of Afghan and European occupied sites are discussed first. Two sites (Afghan hut and Coolgardie) were especially rich form the core of this research and are discussed at length at the end of this chapter. Five other sites yielded varying amounts of material evidence that is valuable for answering some research questions. The term ‘site’ refers to an area such as a campground, whereas ‘locality’ refers to a smaller location with specific artefacts. Further details on artefacts are in the database in Appendix 1.

Sir Samuel

Sir Samuel town site is on the Goldfields Highway, 38 km north of the Leinster and Sandstone roads and 160 km north-northwest of Leonora, Western Australia. Its cemetery is 1.4 km north of the town site, and 0.5 km east of the Goldfields Highway, with Afghan burials dated between 1904 and 1928. There is no historical evidence for a campground in Sir Samuel. The site was surveyed to devise criteria for distinguishing between Afghan and European Australian settlement patterns, and for observations on Muslim burials.

Gold was discovered in 1896 (Murray, 2011), the town was gazetted in 1897, and in 1910 it had 4,000 people, three banks and two public houses ("Mt. Sir Samuel - then

and now," 1938, June 16). The Bellevue Proprietary Ltd gold mine was dominant between 1897 and 1907, and the Vanguard mine started in 1898 and lasted to 1947 (Geological Survey of Western Australia, 2021). Musakhan (1932) lists 22 Afghans in Sir Samuel, many of whom were Pishoris, between 1904 and 1906.

Foodways

Bottles and cans occur in scatters in the town site, and there was a dump of mixed rubbish in one pit. Hole-and-cap and hole-in-cap cans likely contained meats and vegetables. Sardine cans with key openers, squat fish cans, and other cans with replaceable flanged lids were present. Glass was mostly from broken black alcohol bottles. Some of these were concentrated in the pit, perhaps an abandoned mine shaft. The cans and bottles together give a site date of pre-1920, but younger, amber beer bottles and fragments were also present (Burke & Smith, 2004).

Personal

A solitary tree (3 m high) surrounded by an annulus (diameter 2 m) of untrimmed rocks (Figure 11, ID436) suggests a garden. Another personal artefact was a clock mechanism measuring 7 by 5 cm likely from a mantelpiece clock (ID433).

Figure 11: A tree is surrounded by stones forming an annulus 2 m in diameter and may have been a domestic garden. A vehicle wheel arch lay in the background. Looking northwest. ID436.

Transport - Mechanical

Adjacent to the tree and remains of the garden were the remains measuring 4 m by 2 m (ID437) of a motor vehicle fender or wing of unknown make or age (Figure 11). No animal transport artefacts were found.

Structure

Approximately 1,000 bricks were on this site. A wall feature consisting of a single in-situ course of bricks, 1.9 m by 1,1m (ID426), some with partial marks of ‘TCRAIG’, was recorded. The bricks were probably GARTCRAIG firebricks (ID427) that were made in Scotland and exported from 1872 to 1937 (*Gartcraig Fire Clay Co, Millerston, Glasgow – history*, 2021). A 20 cm ferro door hinge (ID425) was nearby. Other accumulations of building material (ID429) suggest collapsed walls and there were also structural foundations of orange brick (2.5 m square, ID427, Figure 12) with concrete platforms. Nearby were four trenches lined with concrete up to 10 m long, 1 m deep and 0.5 m wide. Brass fittings including a decorative annular component (13 cm; Figure 13, ID435) were probably parts of a door lock. A vertical shaft (Figure 14, ID431), 15 m deep and 0.8 m square, was neatly lined at the surface with bush-cut timber but has no evidence of any type of superstructure.

Figure 12: Remains of a brick structure. ID427.

Figure 13: Brass door fittings, likely from a home or mine office. ID435.

In a shallow pit 2 m across were fragments of fibrous asbestos cement sheets. This building material was invented in 1899 and was manufactured in Perth from 1905 (Lewis, 2021a). Expansion of its use in Australia started around 1920 (Bolton, 2009) and was used extensively in Australian buildings by 1950.

Figure 14: The framework around a possible mine shaft entrance. ID431.

Faith – Burials

The cemetery north of the town site included 30 graves (*Sir Samuel cemetery*, 2019). Mohamad Ally, who died in 1904, was listed as a fruiterer living at Lawlers (Outback Graves, 2021; Western Australian Supreme Court Probate Office, 1904). Ally's grave (ID424) was oriented north-south and has a large marble headstone with script in Arabic, Urdu, and English (Figure 15). The engraving work on this headstone perhaps involved a skilled and literate Afghan.

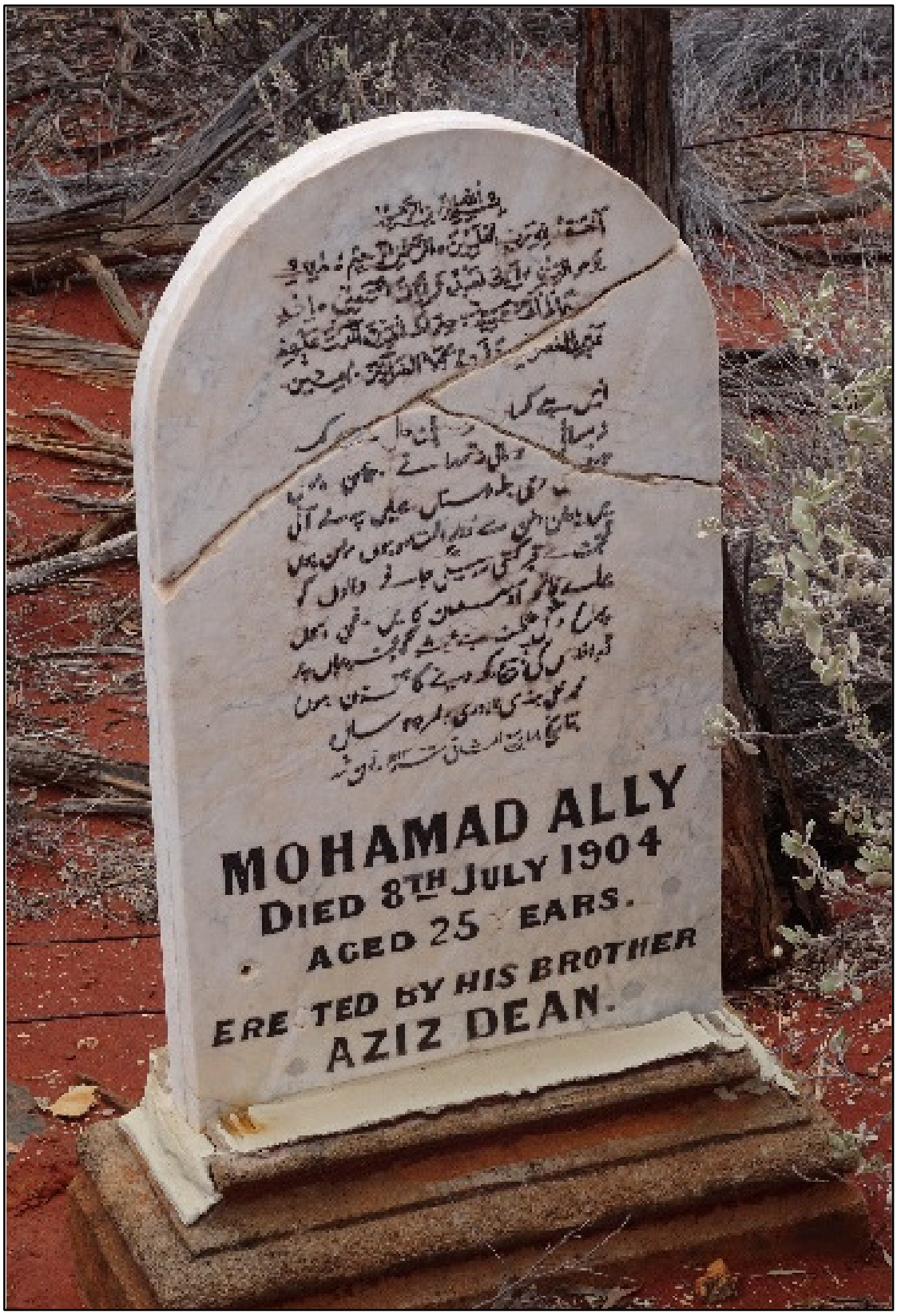

Figure 15: Headstone for Mohamad Ally at Sir Samuel cemetery. The epitaph was in Arabic, Urdu, and English. ID424.

The epitaph and its poem are translated in Figure 16 (Kahn & Abdali, 2021). The Arabic and Urdu script were well formed. The first two lines are the *Shahadah*, one of the canonical Pillars of Islam, followed by Surah *al-Fatihah* 1 (The Opening; in Arabic, *naskh* text style), which is the only *Surah* in the *Quran* where it is the person speaking to *Allah*. The poem was in Urdu and in *ghazal* form, a short ode with rhyming couplets. The poem was described by its translators as 'thoughtfully, skilfully composed', but 'imperfect in metre and rhyme' (Kahn & Abdali, 2021). Thus, it was not of the standard of a master, and no classic origin for this poem was identified (Ali, 1973; Iqbal, 2012; Russell, 1995). The last line was in Persian, *nasta'liq* text style. The date was in the *Hijri* Arabic lunar calendar.

Two other Afghans (Meer Akbar, d. 1909; Soffee Kareen, d. 1928) were commemorated with modern stainless steel plaques (Outback Graves Markers, 2022).

I bear witness that there is no god but Allah,

And that Muhammad is his messenger.

In the name of Allah, the entirely merciful, the especially merciful.

(All) praise is (due) to Allah, lord of the worlds.

The entirely merciful, the especially merciful.

Sovereign of the day of recompense.

It is you we worship, and you we ask for help.

Guide us to the straight path.

The path of those upon whom you have bestowed favour,

not of those who have earned (your) anger or of those who are astray.

Intimate with the friendless … say this with the tongue of your state:

I am no Christian or Jew, no fire-worshipper or Brahmin.

My fate … brought me here from Hindustan.

I have wandered far from my compatriots, but I am a believer.

With love my grave will go on saying to the passers-by,

Come and recite the Fatihah. I am a Muslim's resting-place.

Lamps and flowers are vain embellishments on the exile's grave;

I am a place to put down and keep prayer-beads of pearls of the Surah Ikhlas.

Muhammad Ali the Indian of Lahore, at the age of 25 was buried here on the 18th of Rabi' al-Sani, 1322.

MOHAMAD ALLY

DIED 8th JULY 1904

AGED 25 YEARS.

ERECTED BY HIS BROTHER

AZIZ DEAN.

Figure 16: Translation of the epitaph on the headstone of Mohamad Ally, Sir Samuel cemetery. Quran Translations of surah from the Quran from Saheeh International (2012), and of the poem by Kahn and Abdali (2021). The repudiation of fire-worshippers likely refers to Zoroastrians.

Summary: Afghans and the Archaeology of the Sir Samuel Locality

Bricks, firebricks, and concrete mark the locations of several structures that were probably mine works, commercial structures or private houses. The rubbish pit may have been a cool room ("Mt. Sir Samuel - then and now," 1938, June 16) or a mine shaft. The timepiece regulated lives, the garden was a very domestic feature, and the car denoted a level of wealth. Brown glass beer bottles indicate a later age, consistent with the Vanguard mine persisting to a relatively late date. Afghan presence was indicated by burials such as for Mohamad Ally.

Kathleen

Kathleen town site is north of Leonora, 180 km along the Goldfields Highway and 13 km northeast of Yakabindie homestead on the old Wiluna road. Because there was no record of Afghans in the town, campground or graves, the site was surveyed to devise criteria for distinguishing between Afghan and European Australian settlement patterns. Kathleen also provided observations on cool room construction that allowed important comparisons with other sites in this research.

Kathleen was settled adjacent to the Yellow Aster gold mine in 1897 (Geological Survey of Western Australia, 2021), and the town was gazetted in 1900. Kathleen was likely a stop on the route between Leonora and Wiluna for cameleers and prospectors. Mining was still active in 1934 ("Kathleen Valley," 1934, October 12) and 1943 (Geological Survey of Western Australia, 2021). Within a radius of about 5 km from Kathleen town site the Yellow Aster mine dominated gold production between 1900 and 1943. Many of the other early mines were short-lived yet had very high-grade ore and had finished production by 1904. Three mines kept the goldfield and the town going beyond 1920 (Geological Survey of Western Australia, 2021). The town cemetery, 1.2 km south of the town, had seven recognisable graves, but none were of Muslims.

Foodways

There was a light yet extensive scatter of bottles and cans with no dumps. Cans were hole-and-cap and hole-in-cap cans (10-20 cm tall, 7-15 cm diameter) that contained meats and vegetables (ID534). Bottles were mostly broken black glass alcohol bottles (ID535). The cans and bottles together give a date of pre-1920 (Burke & Smith, 2004). In addition, there were a small number of modern aluminium beer cans and amber glass beer bottles (ID757), in keeping with the site's gold production into the 1940s. A 50 cm by 20 cm piece of a ferro-based casting with square apertures and two hinges may have been the front for an oven (ID540).

Personal and clothing

A variety of personal objects were found, including a metal ring (3 cm diameter, ID536, Figure 17) that was very likely a fob watch frame with a knurled winding knob. A drum 50 cm in diameter and depth with a wooden paddle (ID538, Figure 18) could have been a custom, hand operated washing machine.

Figure 17: The brass frame of a fob watch. ID536.

Figure 18: A handmade washing machine with a wooden paddle preserved. ID538.

Profession

A large ferro-based tank (1.78 m square, ID766) had rounded rivetted joints along all edges and a large central hole (Figure 19). Caps that fit the hole had lugs that engage with slots in the tank opening to seal it tightly. This can be interpreted as a ship tank used for the storage of water or perishable liquid (Pearson, 1992). This tank was larger than the conventional size of 4 feet or 1.23 m square.

Figure 19: A ship tank without the cap for the filling hole. Holes in the side were modifications for a secondary use. ID766.

Structure

At Kathleen, remains of several structures existed adjacent to the modern track through the town site. One was a pile of bricks near the ship tank described above. A collapsed structure comprised 3 m lengths of ferro-based corrugated sheeting with 3-inch ripples, a large (2 m diameter, 3 m deep, ID329) corrugated iron galvanised tank (ID745), and a wire netting structure (3 m square, ID544). The frames for these structures were undressed bush-cut timber. Another structure in a ruinous state was on the trackside, including many 3 m lengths of galvanised corrugated iron with 1-inch and 3-inch ripples, 2 m dressed timber frames, some pressed metal sheets (30 cm, ID744), and a water tank (3 m high, ID528). No window glass was found.

A nearby rectangular pit is now filled with building debris (Figure 20). It was excavated 1.75 m below ground level and measures 4.75 by 3.5 m. It has an inclined chute without steps on the northern side, 2.2 m long. On the eastern wall was a 1 m triangular rebate cut into the bedrock. All walls were evenly cut out.

Figure 20: Depression associated with a structure, looking northeast. ID767.

A ferro lantern base with a fuel filler hole was found, 15 cm diameter (ID537). It was a Victor model, by Dietz of New York, production of which commenced in the 1880s (*Lantern kerosene*, 2016).

Summary: Afghans and the Archaeology of the Kathleen Locality

There were extensive remains of brick structures (commercial or residential structures) and a pit that may have been a cool room related to the Yellow Aster hotel. The lantern, watch, and washing machine gave a domestic and urban character to the site. The ship tank may have been part of a water condenser or storage function. However, no evidence of Afghan presence was found. Some beer bottles and cans postdate 1920.

Mount Magnet

Mount Magnet is 560 km northeast of Perth on the Great Northern Highway. The Mount Magnet cemetery is on the north side of the Mount Magnet-Sandstone-Leinster road, 1.3 km east of Mount Magnet. Day and Morrissey (1995) referred to ‘an Afghan’s camp at the railway depot’ in 1897 ("Local and general," 1899, March 3). This campground may have been cleared and converted into the modern sports field north of the station complex after the railway was closed in 1982 (Austin, 2011), but this site was not examined due to apparent intense disturbance.

Gold was discovered at Mount Magnet in 1891 and the town was gazetted in 1895 (Landgate, 2020). It was an active mining centre by 1897. The railway opened in 1898 (Austin, 2011). There was no mention of Afghans at Mt Magnet in newspapers after 1900, even though burial records show that Afghans were permanently settled there. Musakhan (1932) listed no Afghans at Mount Magnet between 1904 and 1906 but Jones and Kenny (2010) listed 13 working there over this period from the early 1890s. While there was a mosque in Mount Magnet (Australian Department of External Affairs, 1910), no specific location is known for either the mosque or the campground.

Faith - Burials

The Muslim section of the Mount Magnet cemetery is in its northeast corner, although Muslim graves in Australian cemeteries were more common on the western, Mecca side. In the Muslim section (ID726), there was a total of about 40 features suggesting grave plots, but most were degraded. Nine features were encircled or covered by 5-20 cm quartz pebbles marking a low (<20 cm high) central tumulus, 2 m by 1 m in extent (Figure 21, ID722). Two of these features had single markers of crudely cut and shaped bush timber. One feature had stone markers at both ends. No grave thought to be Muslim had a name, date, or epitaph. The long axes of the graves were

orthodoxly oriented with a bearing of 010° (magnetic), perpendicular to the *qiblah*. The features with markers are very similar to those described by Parkes (2009) at Farina, South Australia. Another burial feature in the cluster of Muslim graves had a very simple metal cross at its northern end and was parallel to these graves. Two Afghan burials were listed at Mount Magnet, in 1908 and 1940 (*Mount Magnet cemetery*, 2021).

Figure 21: A grave with two stone *shahids* and decorated with quartz pebbles, looking north. ID722.

Summary: Afghans and the Archaeology of Mount Magnet

Muslim burials in Mount Magnet were distinctive, simple, and orthodox. They are readily recognisable in contrast to the other Christian/European burials and confirm the presence of many Muslims. There was, however, one Christian-style grave amongst the Muslim graves. No campground or mosque was identified in the town.

Cue

Cue lies 630 km northeast of Perth and 70 km north of Mount Magnet on the Great Northern Highway. The Asiatic campground in Cue was imprecisely described as ‘opposite the Catalpa lease’ ("Tailings," 1902, October 18). The location of that lease is known, but ‘opposite’ does not identify the location of the campground sufficiently well for an archaeological survey.

Gold was discovered at Cue in 1892 and the town was gazetted in 1893. The railway reached Cue in 1898 (Landgate, 2020). Mining continued in the Cue area until 1924 (Big Bell mine) and 1941 (Monte Carlo mine). Afghan presence may have commenced around 1893, and gradually declined through later decades. The biographies of Afghans compiled by Jones and Kenny (2010) and Musakhan (1932) showed 36 Afghans (nearly all of them from the Solaiman Khel tribe) living in Cue. The brothers Faiz and Tagh Mahomet set up a base in Cue for their work in the carrier industry in the Murchison (Koutsoukis, 1986), suggesting it was a major centre. There are two cemeteries in Cue, the old cemetery on a hill 1.1 km east of the town, and the main town cemetery 1.5 km south.

A rubbish dump in Cue is mentioned in 1896 (Heydon, 1987) but the location is inexact. A rubbish dump was briefly surveyed as part of this search for an Afghan campground in Cue, but it is unclear if this was the 1896 dump. Nothing *in situ* or diagnostic of Afghan or Muslim presence was found in the dump.

Faith - Burials

There were nine distinctive features at the western, Mecca end (*qiblah*) of the old cemetery (Figure 22). They were well preserved and tidy, measuring 2 m by 1 m, with a low central tumulus of earth about 10-15 cm high and a neat outline of 5-10 cm quartz pebbles and rocks. The long axes had an orthodox orientation of 020° (magnetic). There were no stone or timber grave markers or commemorative monuments, epitaphs, names, or dates.

Figure 22: Several graves outlined with small pebbles, oriented about north-south that were possibly Muslim graves. Looking southwest. ID713.

On the west and southwestern periphery of the main municipal cemetery (ID714, 715) were two features, oriented at 015° (magnetic) perpendicular to the *qiblah* in the

orthodox Muslim manner. One had a concrete plinth and marble monument to Meyan Meer Ahmad (died 1900, 46 years old). The epitaph (by Wilson, Gray in Perth) consisted of the *Surah* 1 al *Fatihah*, followed by *Surah* 112 al *Ikhlas*, a poem in Arabic, Farsi, and Pashto. There was a short epitaph in English at the bottom. The other grave, 2.1 m long, had a low (10 cm) earth tumulus with an outline of white quartz rocks and no other markings.

Summary: Afghans and the Archaeology of the Cue Locality

Several graves oriented perpendicular to the *qiblah* were those of orthodox Muslims. The single epitaph comprised epitaphs in English and in Afghan languages, perhaps with the cooperation a skilled and literate Afghan. No Afghan campground or mosque was identified.

Malcolm

Malcolm town site is 19 km east of Leonora on the Laverton road, and 225 km north of Coolgardie along the Kookynie road. The Malcolm cemetery is 6.8 km south of Malcolm town site along the Kookynie road, but no Afghan burials were identified there. A town site plan covering the period from 1902 to 1975 (Western Australian Department of Lands and Surveys, 1976) shows a ‘camping reserve’ (measuring 190 m east-west and 160 m north-south) at the north-eastern end of a modern road-rail transport yard. This camping reserve showed an east-west series of regular parallel lines or striations on Google Earth imagery (Figure 23). Ground survey showed that these were windrows, long and low mounds left by a bulldozer or grader blade that had scarified the area (ID233, Figure 24). The town site is on the opposite side of the railway to the campground.

Gold was mined in the area from 1895 (Geological Survey of Western Australia, 2021) and Malcolm was gazetted in 1897 (Landgate, 2020). The railway opened in 1898

(Austin, 2011). A mosque at Malcolm was mentioned in the *Kalgoorlie Miner* ("Malcolm," 1907, June 7). Jones and Kenny (2010) listed four Afghans in Malcolm, and Musakhan (1932) noted one. There is no mention in newspapers of Afghans after 1905, and gold mining in the immediate area of Malcom finished by 1936 (2021). Therefore, Afghans were possibly present from 1895 to at least 1905.

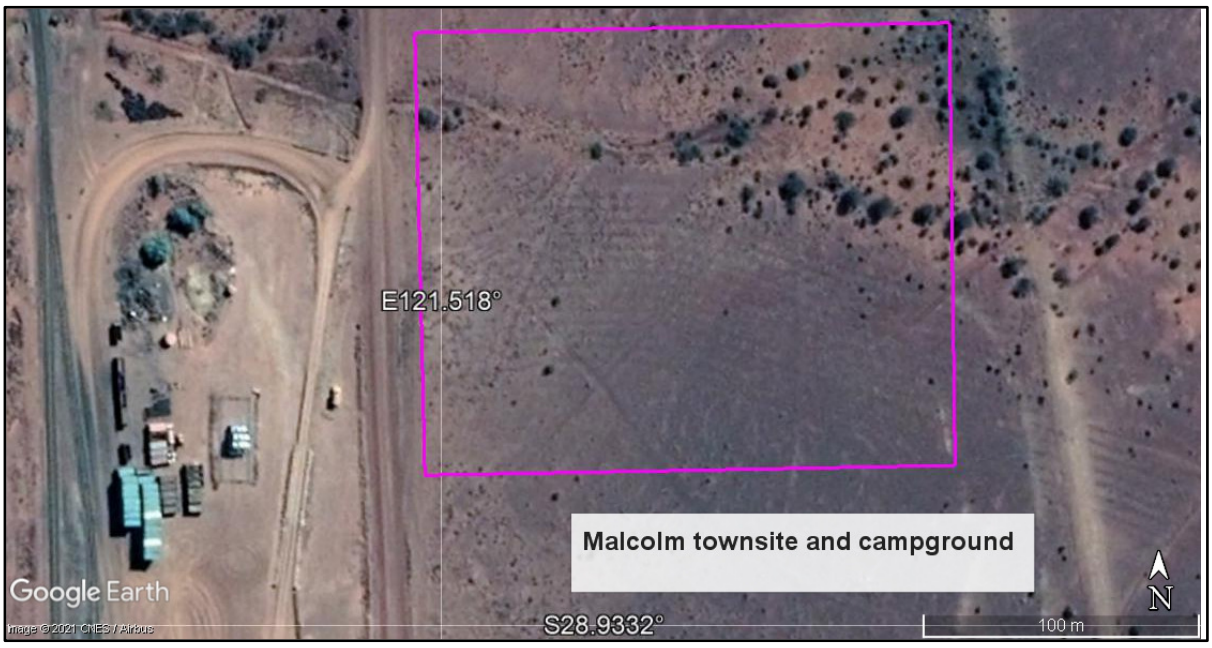

Figure 23: Google Earth image of the Malcolm town site and campground (pink rectangle). The entire area was scarified. The railway south to Kalgoorlie is on the western edge, with a modern transport yard.

Figure 24: Windrows resulting from scarification of the Malcolm camp and its effect on the artefact scatter, also seen above in the Google Earth image of the campground, looking east. Photograph taken in September 2020. ID233.

Foodways

Most cans were flattened and occurred singly or sometimes in scatters 5 m across of up to 30 cans. The cans were almost all hole-and-cap cylindrical food types for meats or vegetables (ID179) with a few small (9 cm) rectangular hole-and-cap and hole-in-cap cans with a key-wind opener for meats. Rectangular sardine cans (9 cm) and oval fish cans (ID196, 11 cm) were present but uncommon. These date to before 1920 (Burke & Smith, 2004). The can type with the key-wind opener (ID178) appeared in 1866, sardine cans in 1875, and key-wind square meat cans (ID160) in 1895 (Bolton,

2009). There were very few sanitary cans, a group with a date of manufacture after 1905 (Burke & Smith, 2004).

Most of the identifiable bottle fragments were of the black glass type with high push-ups. These alcohol bottles were from before 1920 (Boow, 1991; Burke & Smith, 2004). Some Ricketts type bottles were present with a seam around the heel and embossed labelling on the base (Figure 25, ID152). There were also several clear glass Kanowna beer bottles with pinched necks (Figure 26, ID173) of the Codd's patent seal type from 1895 or before (Burke & Smith, 2004), and a clear glass COOLGARDIE beer bottle. One intact glass bottle (9 cm tall; ID148) was pale amethyst and slightly solarised and hence pre-1930 (Lockhart, 2006) with a blob-top collar. A clear glass bottle with a square outline (9 cm on a side) and marked with the partial label 'STRONV' was a Stronvaar whisky bottle (Figure 27, ID190) from Campbeltown, southwest Scotland, that was available in Western Australia between 1894 and 1916 ("E.G. Dobson," 1916, March 18).

Figure 25: A Ricketts mould bottle with embossed label on the base. ID152.

Figure 26: Kanowna beer bottle with pinched a neck, Codd's patent. ID173.

Figure 27: A Stronvaar whisky bottle from Campbeltown, Scotland. ID190.

A square container (23 cm square base; Figure 28) with a braided wire handle may have been a water bucket and perhaps for domestic use (ID199). A salt glazed stoneware (~9 cm) jug imprinted ‘Doulton England 88 Lambeth’ may have been an ink bottle (ID181). A ferro-based small basin or bowl (ID151, Figure 29) and a billy were likely used as domestic utensils.

Figure 28: A container with a braided wire handle added. ID199.

Figure 29: A 13 cm ferro-based basin. ID151.

There were a few, small, fragmentary, ceramic artefacts: a refined earthenware plate with a blue double ring around the edge - hotel ware, (Burke & Smith, 2004), ID159 - and fragments with red and cobalt blue underglaze transfer prints.

Personal

A 7 by 3 cm tobacco tin with a hinged lid (ID210) and a round Star tobacco tin were found. Tobacco tins were invented in 1892 and the hinged lid variety in 1910 (Bolton, 2009).

Structure

Ten bricks, mostly broken and with 3 cm quartz pebbles in the matrix, suggest nonindustrial production using nearby materials. One brick had visible straw binder and a frog, and another pressed brick imprinted with ‘Statham Perth’ (Figure 30) came from Statham and Burton’s Darling Range Quarries, Fire Brick and Gravel Company clay pit that operated from 1901 until the late 1960s (Callow, 1997). No bricks occur in any arrangement that suggests the remains of a structure. A single piece (45 cm) of ferro-based, flattened corrugated sheeting was found. No evidence of the reported mosque could be identified due to the very disturbed state of the campground.

Figure 30: A machine-made brick stamped Statham Perth. ID234

There were several ferro-based artefacts found that were not specific in their function (heel protector for a boot, pliers, split ring, spikes and bars of various sizes and forms) or in their age. Some ferro-based circular plates with strap handles, 25 cm in diameter (ID223), appear to be lids to large containers. One large container (Figure 31), 30 cm high and 28 cm in diameter, had a 15 cm opening that matched several lids found around the site. This container had an electric welded inlet/outlet ID239).

Figure 31: An ferro-based container with a welded inlet/outlet. ID239.

A ferro-based basin 40 cm diameter (ID176) could have been for many uses. Other ferro-based artefacts include perforated can bases (Figure 32, ID198), plates and square containers (25 cm square) with perforated sides (Figure 33, ID238). There were also some heavy ferro containers (18 cm diameter, ID204) encircled with rivetted reinforcing hoops (1.1 m long by 3 cm, ID105). These artefacts may have been used in mining-related activities.

Figure 32: A small can with its base perforated. ID198.

Figure 33: A kerosene with perforated sides. ID238.

Transport – Animal and Mechanical

A few partial can lids (20 cm across) were embossed with SONE & FLEMING | WHITE ROSE (ID153), a brand used since 1872 ("High Court of Justice, Chancery Division. The White Rose Trade Mark," 1885, September 26), and probably contained fuel for industrial or domestic purposes. A few railway dog spikes (ID156) were found about 350 m from the railway. Other artefacts could have been used on rail or road coachwork. A single set of two linked ferro-based rings (7 cm diameter, ID742) and one horseshoe (ID189) were found. None of these could be dated.

Summary: Afghans and the Archaeology of the Malcolm camping reserve

The site had been heavily disturbed. The artefacts indicate work related to animal and mechanical transport. Mining is suggested by a wide variety of artefacts. Other artefacts indicate a more urban, literate and permanently settled occupation of the campground. Large metal containers may have served as water storage tanks or as part of a water condenser. There is no definitive evidence for Afghans, camels, or of the mosque, and all artefacts could be from European Australians and from before 1920.

Leonora

Leonora lies on the Goldfields Highway, 230 km north of Coolgardie. Gold was discovered at Leonora in 1894, and the major Gwalia deposits 4 km south of Leonora were found in 1895-1896. Leonora was gazetted in 1898 (Landgate, 2020) and the railway opened in 1903 (Austin, 2011). The Asiatic campground existed in Leonora ‘for some time’ before 1901 ("Local and general news," 1901, July 20). Fitzgerald (2012) and ("Lawlers murder," 1934, March 6) described a mosque in 1919 at the

Leonora campground surrounded by a corrugated iron fence. The building was sold in 1947 ("Mosque and church bought," 1947, October 20), presumably when it ceased to serve a community.

The campground measuring 400 m by 100 m was on the western side of the railway, and 1 km west of the centre of Leonora on the eastern side of the railway. Leonora cemetery is east of the Goldfields Highway, 2.3 km southeast of Leonora. The pioneer cemetery is in the airport reserve, at the south end of the main runway. No burials of Afghans were identified at either cemetery. Ten Afghans donated to the fund for the Perth mosque in 1904-1906 (Musakhan, 1932) and Fitzgerald (2012) reported 60 men in the town in 1905. The presence of Afghans in the Lenora area probably started in the mid-1890s and continued into the 1940s.

Two views of the area (Figure 34) show clear windrows containing shattered glass (ID323, 344) from clearing the campground. Some glass was melted, implying the burning of rubbish (ID354). Postdating the windrows is a golf course, first mentioned in 1919 ("Leonora-Gwalia Golf Club," 1919, June 28), and the modern sports complex.

Figure 34: Windrows formed by ground clearance containing much smashed bottle glass. Left ID323; right ID344, both looking east.

Foodways

Many food cans were crushed and corroded, and included round cans of the hole-in-cap type (Figure 35, ID413) that were uncommon after 1920 (Burke & Smith, 2004), a few sardine cans with key-wind openers, and an oval fish can (ID321, 15 cm long) that were contemporary to 1890s Western Australia (Rock, 1993). No sanitary cans were identified. A screw cap was present on one 5 cm can. A square container with a flanged lid (ID411) was possibly a bulk dry foods container.

Figure 35: A hole-in-cap can, with a dimple on soldered hole. ID 413.

Much of the glass in the campground comprised black or dark olive glass with high push-ups in the base and no pontil marks. Ring seal finishes were present in the black glass and blob-tops in the olive-green bottles (ID302). Some Ricketts type bottles were present. Commonly, there was no seam around the rounded heel of the base, implying a three-piece mould and seams on the shoulder. All bottles were shattered so details cannot always be discerned, but they were alcohol bottles with time of production to around 1920 (Burke & Smith, 2004). Sparse fragments of amethyst solarised and decoratively moulded glass were present, giving an age of before ~1920 or 1930 for the deposit (Lockhart, 2006). There was one complete amethyst bottle (8 cm tall) that may have been for toiletries (ID114).

A frying pan (ID332), billies (ID336), a large teapot (ID348), and enamel bowls (20 cm diameter, ID391) were probably food preparation utensils. Square containers for fuel (domestic cooking fires, lanterns, or trade related) included a WHITE ROSE can (12 cm square, Figure 36), a brand used since 1872 (ID356) ("High Court of Justice, Chancery Division. The White Rose Trade Mark," 1885, September 26). There was also an unperforated square can with the lid removed and a wire handle added, likely for carrying water (35 cm tall, ID405).

Figure 36: A White Rose fuel can with spout, made after 1901. ID356.

Amongst the few identifiable ceramic artefacts present was a single earthenware fragment (ID746) marked LOVATT LANGLEY MILL from a Derbyshire pottery (Giblin & Giblin, 2002) . The name Lovatt was included in two period titles, the Calvert and Lovatt period (1883-1895) and the Lovatt and Lovatt period (1895-1930). A fragment of a white ‘Ston(es) ging(er) beer’ jug (ID376) and earthenware with banded ‘hotel’ underglazed transfer print were present.

Personal

Two decorated, broken cast ferro-based items, one with a fleur de lys pattern (ID374) and the other with an undulating curved decoration (ID383), could be from a variety of

objects including decorative fireplace trims or bedframes. Other artefacts included a copper-based circular disc (41 cm diameter, ID318) with a hinge that may have been a laundry tub lid (Figure 37), white enamelled basins, and a can (ID384) of Nugget boot polish, perhaps from 1900 or later (Australian National University Archives, 2011). There was also a cast ferro-based square plate (17 cm square, 1 cm thick, ID345) with a dimpled texture, lotus decoration and a central pin that could have been part of a decorative object. A steel box (8 cm x 5 cm by 8 mm, ID358) has a dimpled base for striking matches, and a rectangular, 7 cm by 3 cm tin with a hinged lid was likely a tobacco tin. The tobacco can came into existence in 1892, the hinged lid in 1910 (Bolton, 2009). A round lid was marked ML or MC TOBACCO.

Figure 37: A lid for a drum. ID193.

Structure

A ferro-based rod 4 mm in diameter and 15 cm long with a hook at one end and a split ring at the other (ID 350, Figure 38) could have served a variety of functions. There were many broken and scattered bricks (ID398). These bricks commonly contained 1-2 cm quartz pebbles suggesting local manufacture. There was one concentration of bricks over 3 m, but no evidence of a structure remained. A sheet of pressed metal (8 cm, ID314) probably had a decorative function in a structure. A latch was found, of the type with a loop that goes over an eyelet to secure a cabinet or cupboard door.

Figure 38: A hook. ID350.

Profession

Two curved ferro-based bars (19 cm long, ID375, Figure 39; 34 cm long, ID51) have a hook or ring at each end and a central loop. These are likely parts of beam balances for weighing items.

Figure 39: Balance bar from a beam balance. ID375.

Other trade-related artefacts included a shovel blade, a bar with a serrated face that was likely the jaw of a pipe wrench, and large ferro-based containers (measuring 42 by 37 cm) with reinforcing bands that may have been ore buckets. Three square tins, one with a screw cap (Figure 40, ID307), are similar to a style that appeared in the U. S. A. in 1873 to hold kerosene or paint (Rock, 1993).

Figure 40: A square ferro-based can with a screw top. ID307.

Transport – Animal

A galvanised container was found with a kidney-shaped cross section. It had been halved transversally and holes had been cut into it (Figure 41, ID408, 0.4 by 0.25 by 0.25 m). Its primary function was very likely as a camel-borne water tank, but it was modified for other uses.

Figure 41: A water tank made for use on camels, modified for other purposes. ID408.

Horseshoes were common in the centre of the campground and commonly in clusters (ID198). There were several ferro-based chains of up to seven links. The presence of a swivel in one of these short chains (Figure 42, ID362) strongly suggests a function as a hobble chains for the artefact (Parkes, 1997). There were many single, circular ferro-based rings and other more complex split rings and D rings, measuring 7 to 9 cm in diameter. These may have been components of halters, bridles, hobble chains or saddles, but not distinctive of camels or horses. Nineteenth century photographs of camels typically show halters with few ferro-based components (Figure 43) that were much simpler than those of horses.

Figure 42: A hobble chain with a swivel. ID362.

Several copper-based buckles (ID328) as well as dozens of ferro-based buckles were also found in other camping grounds in this study. Some were present in clusters sometimes in an area a metre across. All had the same style, and the number found suggest they were components of animal hobble straps, bridles, or halters rather than belt buckles. A 30 cm long spike with one end sharpened and two chains of three links each attached to the other end was recorded (ID363).

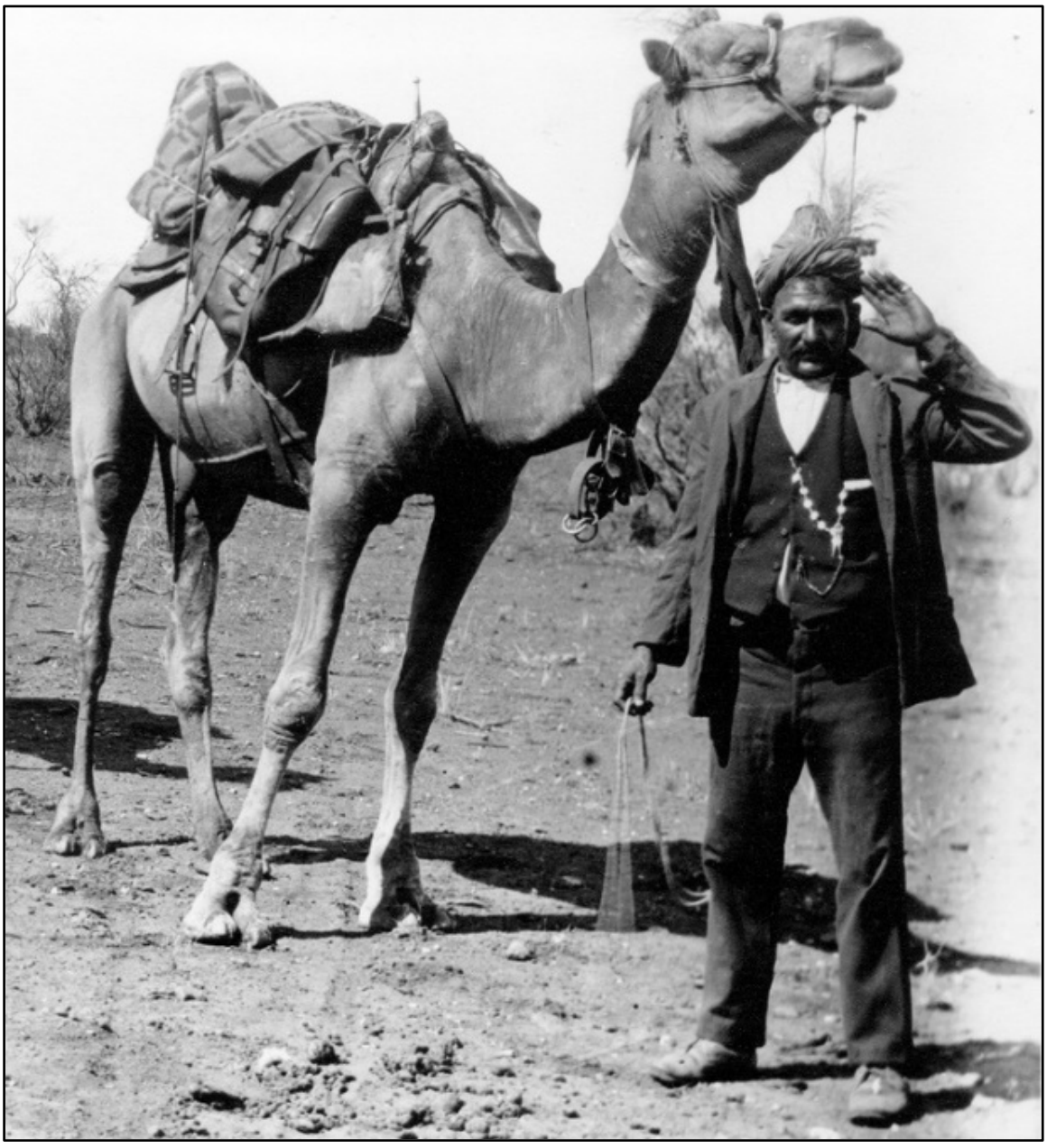

Figure 43: Fazzledine and his camel, October 1904, at Murrin Murrin. State Library of Western Australia image call number 001312D. The accoutrements and saddlery contain few ferro-based components.

Transport - Mechanical

Eleven 12 cm railway dog spikes for securing rail to sleepers were recorded. A curved bar (56 cm, ID329) with bolts at each end could be related to the railway, which was 50 m east of the campground.

The lid (12 cm square, ID356) of a square steel can with a spout was part of a can marked GARGOYLE with a distinctive dragon trademark. This trademark belonged to the Vacuum Oil company, founded in 1866 and operated in Australia after 1895 (Museums Victoria, 2023). Vacuum oils were used as a steam engine lubricant. The Gargoyle can dates the site from after 1895.

Summary: Afghans and the Archaeology of the Leonora Campground

The campground at Leonora was clearly disturbed but there was much evidence for trade-related activities using animal transport as well as railed transport. Very little was found related to mining. The campground contained artefacts that suggest both settled, domestic life and transient occupation. Two metal artefacts suggest beam balances, perhaps for commerce in stores, but were probably too inaccurate to weigh gold.

Bummers Creek

Bummers Creek was a small settlement 37 km east of Leonora along the Leonora-Laverton road, 18 km east of the Malcolm railway station. The site is 1 km north of the modern highway, and about 500 m north of an abandoned route to Laverton. A large area of approximately 3 km^2 was surveyed.

One of six mosques (Australian Department of External Affairs, 1910) was at Bummers Creek but no other details have been found. Musakhan (1932) listed 16 Afghans in Bummers Creek in 1904-1906, including four of the Mohmand tribe and one Pishori goldsmith, but no Asiatic campground was identified.

Bummers Creek was never a gazetted town. It was settled because of the Rising Sun gold prospects and mines in 1897 ("The Bummer's Creek discovery," 1897, March 12). It was known for its hotel ("Bummer's Creek," 1897, April 27) and the vegetables grown

there ("Local and general," 1898, January 8) when Afghans managed market gardens in 1905 ("Malcolm mems.," 1905, April 2). Afghan presence likely spanned 1897 to 1906 or later.

Local gold production ceased by 1910. The Prince of Wales mine had very high ore grades but lasted one year. Websters Gold Mining Co. and Perseverance Gold Mines Ltd dominated Bummers Creek with modest total production, but no mine lasted beyond 1909 (Geological Survey of Western Australia, 2021). The goldfield and settlement were created around one very rich yet short-lived mine, and the field lasted another six years through low productivity mines.

Artefacts

There was no evidence for major site disturbance, but few artefacts were discovered. There was no evidence for can or bottle dumps as seen elsewhere, or for a campground. Only three isolated hole-and-cap cans and no bottle glass were found. A shovel blade, (ID764), and an enamel basin (ID145), 36 cm in diameter, were found near the main east-west track.

Structure

A feature consisting of seven boulders of vein quartz (each ~0.3 m across) in a partly rectilinear array (1.8 by 1.4 m) was found (Figure 44, ID139). One of the boulders was displaced by 40 cm from forming a neater rectilinear array. The long axis of this structure was aligned to 325° (magnetic). The boulders used were all much larger than any others within several hundred metres, and the rectilinear array and the work in collecting the boulders suggest human agency. The boulder array was 50 m south of an old east-west road to Laverton. There was no central mound or a grave marker to suggest a Muslim grave.

Figure 44: An array of large quartz boulders. There are no other similar-sized rocks within the view, looking west. ID139.

A north-south fence line with bush-cut timber posts (1.2 m high) and two strands of barbed wire extends for 500 m across the top of a hill (ID134, 143). Barbed wire was rapidly commercialised in the U. S. A. from 1874, and from the 1880s in Australia (Pickard, 2010). There was nothing to date the fence more accurately at Bummers Creek. Fences of this type were found in other sites in this study.

Summary: Afghans and the Archaeology of the Bummers Creek Site

Very few artefacts of any type were found, indicating minimal occupation, despite the historical evidence. The stone structure was small and appears humanmade and could

have served a purpose for small transient groups. No Afghan campground was identified.

Afghan hut Site

Afghan hut is a site 167 km north-northwest of Leonora along the Goldfields Highway, 7.5 km northeast of Sir Samuel and 7 km south of Kathleen. The Bellevue gold mine near Sir Samuel started production in 1896 (Geological Survey of Western Australia, 2021). Sir Samuel town site was gazetted in 1897 and Kathleen in 1900 (Landgate, 2020) but Afghan hut was not a gazetted town. The railway arrived in Leonora in 1903 (Austin, 2011). A mosque was reported in the area (Australian Department of External Affairs, 1910), but there was little specific documentary material and no contemporary newspaper articles pertaining to Afghan hut (Niven, 2009; XStrata, 2019). The site was also known locally as 'Meredith's cellar' for grazier Frank Meredith (Western Australian Registrar General, 1899).

Foodways

All round cans were of the hole-and-cap type, generally dating from before 1920 (Burke & Smith, 2004). A few rectangular sardine cans had the key-wind opener, a type that appeared in 1875, and key-wind square and round cans in 1895 (Bolton, 2009). Squat hole-and-cap cans were likely fish cans. There was one scatter of ~90 cans in an area 5 m across.

The few glass fragments were mostly black glass with high push-ups. These alcohol bottles were from before 1920 (Boow, 1991; Burke & Smith, 2004). One clear glass bottle (ID 753) may have been for aerated water. Three bottles, two intact and one very nearly so, were found a kilometre west of the hut. One was a light green bottle 37 cm tall (ID840), and two were 28 cm (ID 839, 841) black glass bottles with ring seal tops. These bottles show the striae of turn-mould bottles, plus seams in the bottle

body terminating at the shoulder, with the twisted neck of dip-moulded bottles (Burke & Smith, 2004). A few fragments of moulded amethyst and solarised glass from before 1930 (Lockhart, 2006) were present. Two clear glass fragments (ID834) with a square outline were marked STRONVAAR, from a whisky bottle of the Campbeltown region (southwest Scotland), available in Western Australia between 1894 and 1916 ("E.G. Dobson," 1916, March 18).

Food preparation artefacts included a billy (ID824) and six fragments of ceramic fragments from flatware (ID450, 478, 483, 511) including earthenware hotel ware with pink rims and others with blue transfer print. A rectangular can (ID447) was found, possibly for fuel. A single enamelled basin (38 cm diameter, ID821) could have had many domestic uses.

Table 1and Figure 45 show a difference in the types of artefacts found at four small localities. Alcohol and non-alcohol bottles were partly mutually exclusive. An absence of alcohol bottles coincided with a high proportion of fish cans versus other cans. The inverse relationship between alcohol bottles and fish cans at the four localities may mean that they were occupied by distinct groups, but not necessarily in the same period. A locality without alcohol bottles was very close to one of the Afghan graves described below.

Table 1: Tabulation of artefacts found in four localities at Afghan hut.

	campsite	Grave outside hut compound ID519	campsite	Can dump rabbit warren
Non-alcohol bottles	5 small clear light green ID817	0	1 ID833	2 clear glass ID510
Alcohol bottles	0	0	2 black glass, ID839, 841 1 Stronvaar whisky ID834	3 black ID510, and 5 amber glass ID756
Fish cans	35 ID812, ID814	4 ID805 518	10 ID828	10 ID510, ID785
Other cans	100 ID813	15 ID517	90 ID827, ID829	80 cans ID510
Trade	0	1 iron tube ID846	0	1 spike, ID512
Personal	1 tobacco can ID818	0	1 can with perforated base ID830	1 boot heel plate ID509
Ceramic	0	0	0	1 plate ID511

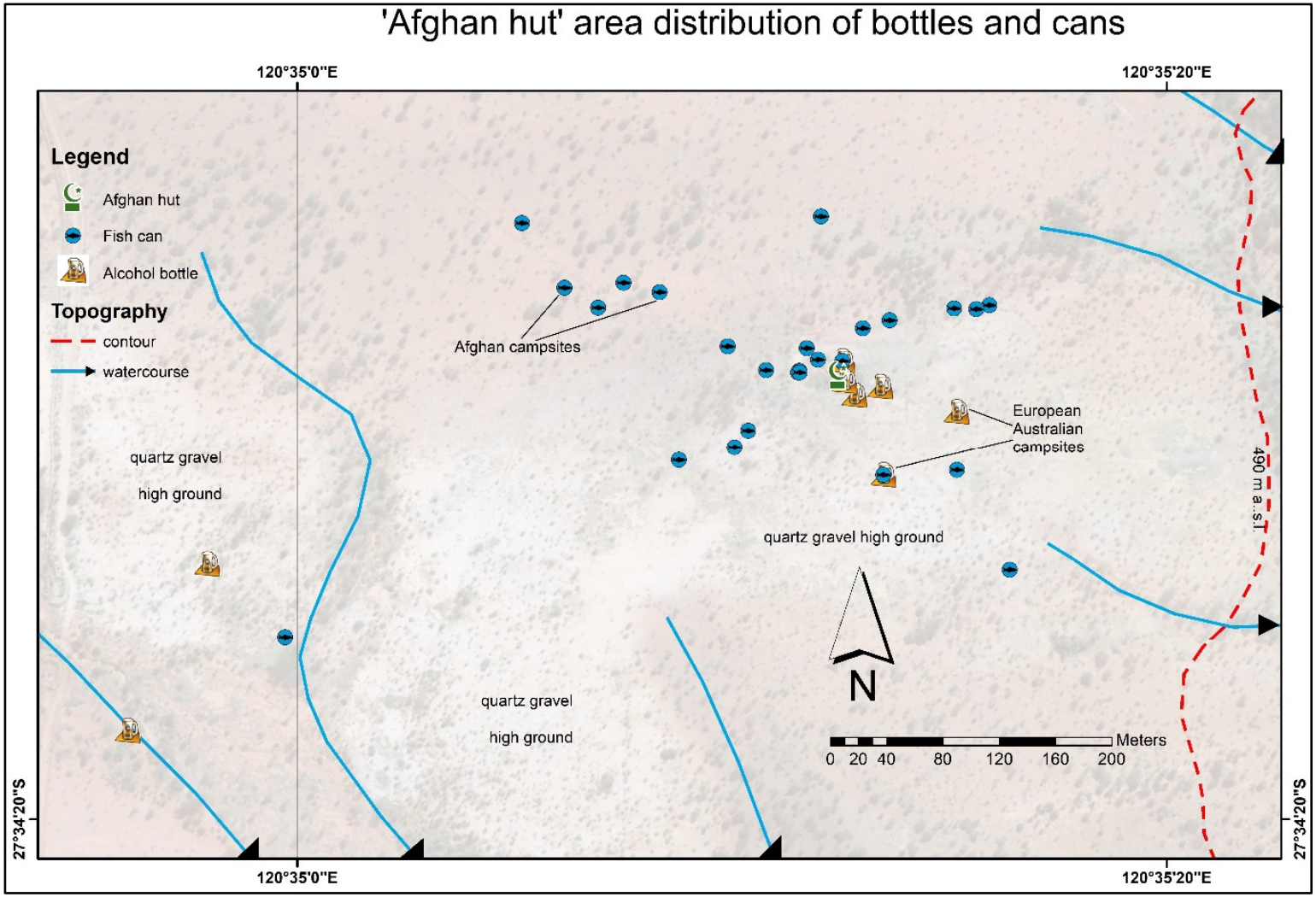

Figure 45: Map showing distribution of localities and their artefacts, especially alcohol bottles, non-alcohol bottles, and fish cans. Afghan hut mosque is shown in the middle of the fish can distribution.

Personal

There were few artefacts relating to personal use: a 6 cm ferro toe protector from a boot (ID468), two very worn ferro boot heel plates (ID472, 509), a 1.85 cm length of angle iron (ID499) with the characteristic tapered lug bracket of a bed side rail, and a few round WD & HO Wills tobacco cans (ID818). A ferro lid (0.65 x 0.46 m, ID4556) lay a metre from a 15 cm mechanism (ID526), probably a chest lid and its latch.

Profession, Transport

A ferro bar with an octagonal cross section (21 cm long, 2 cm diameter, ID796) was found near the hut. One end was broken and the other end was strongly burred over by use. It was probably a moil for rock breaking. Near the well was a short ferro bar with a face with a cross cutting blade, worn by use, made of steel but without tungsten carbide (6 cm long, 2.5 cm diameter, ID454), possibly dating it to before 1931 (Kozhevnykov et al., 2106). It may have been the bit of a hand-drill.

A small copper-based artefact (Figure 46, ID524), oval in outline and about 8 cm diameter x 3 cm in height, had four small holes around its perimeter and a lightly embossed decorative pattern. It may have been a decorative object like a bell but there was no evidence of a clapper. An analysis of the bell by a portable X ray fluorescence device (Table 2) shows the object is *tombac* brass (a high-copper brass with 5-20 weight % zinc), used for ornamental objects and metals suitable for embossing and hammering (Atil et al., 1985; La Niece et al., 2012).

Figure 46: A small decorative item, perhaps a brass bell with no clapper for camels. ID524.

Table 2: the average weight percent of four analyses of the small bell ID524. The analyses were carried out using an Olympus Vanta M Series portable X Ray Fluorescence analyser, using 2 x 30 second exposure procedure.

Cu %	Zn %	Mg %	Al %	P %	Si %	Th %	Pb %	Sn %	As %	TOTAL %
78.8	15.9	1.6	1.0	0.9	0.8	0.3	0.1	0.04	0.0	99.47

Metal strips (n=13, Figure 47) with regularly spaced nail holes were found (ID480, 484, 488, 489). They may have been packing straps of wooden crates (U. S. Forest Service, 1919). Three horseshoes were found, but no short chains or rings.

Figure 47: Metal straps with regularly spaced nail holes, to reinforce crates for transport. ID480.

Another set of work-related objects comprised four ferro hoops (45 cm diameter, ID470, 490, 491, 494). These were mostly isolated, but two were found reinforcing a heavy-duty ferro bucket (43 cm tall, ID514, Figure 48) commonly used for raising ore up a shaft. Like many, it was perforated with several square holes. A 9 cm can was perforated with small holes punched in the base. Perforated cans have been commonly found throughout this project.

Figure 48: Ferro bucket, heavy duty, with reinforcing ferro hoops. ID514.

Structure Assemblage

Hut

A complex feature, the structure called Afghan hut is 4.05 by 5.65 m in plan, partly dug below ground level, with a mudbrick roof, gabled ends that consist of stone blocks forming a wall 50 cm in thickness, but without side walls. There was a small alcove in the western wall, and an entrance chute through the opposite, eastern wall. The hut floor was rammed mud with no gravel. Several views of Afghan hut are shown in Figure 49, and a composite photographic image gives a bird's eye view (Figure 50).

Figure 49: Afghan hut at Western Area's Cosmos nickel mine near Leinster. Top left: general view, looking south. The hut was oriented west-northwest. Top right: the levelled area and entrance, looking northwest. Bottom left: the wooden railings, looking north. Bottom right: the alcove in the western wall.

Figure 50: A bird's eye view of Afghan hut, showing the layout of the assemblage of features: 1 – hut and roof; 2 – entrance chute; 3 – levelled area parapet; 4 – small brick feature 3 m to east; 5 – timber railings; 6 – water well; 7 – grave 20 m to west; 8 – vent into alcove; 9 – pile of mud. Image created as a photomosaic using the Agisoft Metashape program, trial version 1.7.3.

Roof

The roof (Figure 51, ID737) consisted of two components: the lower half comprised several courses of undressed local rock set on the ground surface, and the upper half was comprised of five courses of adobe blocks (20 x 15 cm, 7 cm thick), both supported by undressed timber rafters 0.4 to 0.5 metres apart, 2.2 m long and 10 cm diameter. There were four or five adobe blocks between rafters. The blocks were parallelogram in cross-section, providing a rainproof overlapping arrangement. Each adobe block had planar surfaces and squared edges, implying mud shaped in timber frames, with vegetal remains that appeared to be straw binder. There was no evidence for a brushwood underlay on the rafters to support the adobe blocks.

Two metres to the south of the hut was a mound of mud (Figure 50) that was perhaps the residue of making adobe blocks. Adobe construction was not common in early Western Australia (Lewis, 2021b), but Persia and Balochistan (Landor, 1902) had a tradition of skill in such work.

Figure 51: The roof of the hut, made of overlapping. well-made adobe blocks. ID737.

Pit

The hut was excavated 1.5 m below ground (Figure 52, ID455), with no above-ground side walls. There were vertical striations in the bedrock, evidence of the use of tools such as the moil (ID796) in excavating the pit. There were no indications of hand drilling or blasting.

Figure 52: Vertical striations on interior wall for the pit forming the hut, made by a tool such as the moil found nearby. ID455.

Alcove

Set into the western gabled wall in the hut and cut into bedrock was a small alcove (1.2 m high, 0.65 m wide, 1.2 m deep, Figure 53, ID738), with its base flush with the hut floor. The roof of the alcove was below the natural surface and consisted of intact bedrock: the alcove was carefully dug from within the hut and not from the surface. The dimensions of the alcove are not ideal for storage and there was no charcoal or soot in it, refuting its use as a chimney.

Figure 53: The alcove in the western wall of Afghan hut, deep and narrow with a solid bedrock roof. ID738.

Vents

The bases of two 0.25 m square cans with regularly spaced punctures made with square nails were set into the peaks of the two gables. One metre west of the building was a small ferro truncated conical tower (0.3-0.4 m diameter, 0.44 m high) made from an inverted ore bucket (Figure 54, ID739) with the base cut out and a cover plate punctured with many holes approximately 2 mm square. A vertical shaft (2.0 m deep by 30 cm diameter, with 15 cm ferro casing, ID 447) underneath the inverted bucket penetrated the roof of the alcove. No soot was found in the shaft. Landor (1902) and Keiany (2010) described comparable features (*badjir)* in Persia and in Balochistan (respectively) that were identified as ventilation inlets.

Figure 54: The air inlet at Afghan hut, formed by a perforated, inverted iron bucket. ID739.

Levelled area

A levelled area (Figure 49, Figure 50, ID741) at the eastern end of the hut measures 5.3 x 4.3 m. It was marked by a curved, peripheral rim with a 0.2 m step of natural rocks around the southern half the perimeter. An indistinct step around the northern half in the ground surface suggests the continuation of the rim. Ingress into the hut was by an inclined chute (3.5 m by 1 m, ID451) with three steps (0.25 m high) cut into the bedrock descending into the hut interior below ground through an entrance 1 m wide. There was no evidence of door fittings.

Water well, tubing, windmill

A well (Figure 55, ID455) was 4 m north of the hut. It was 1.2 by 0.9 m square at the surface, 18.9 m deep and had water at a depth of 16.7 m. it was lined with undressed timber down to 5 m below the surface. A metre below ground level was a horizontal timber plank with a square notch, probably the guide for the spear or pump pipe in a windmill mechanism. This type of well was built to be used with a windmill (personal communication, Ashley Dowden, Challa station, Mount Magnet, 2020). The nearby hand-drill bit (ID454) could have been used to excavate the well.

Figure 55: The water well, lined with bush wood, and a bracket most likely for a pump spear. ID455.

Several pieces of flat galvanised steel sheeting, cut from pre-existing objects to form vanes (1.15 m long, ID778, Figure 56) and brackets (37 cm by 9 cm, ID808), were scattered around the site. A water tank (1.5 m diameter, 65 cm deep, ID802) lay 300 m north. Seven lengths of galvanised steel tubing (ID479, 493, 495), 8 cm in diameter and up to 1.8 m in length, lie 20 m west of the well. A piece of galvanised steel (20 cm square, ID498) with a semicircular recess cut into it could have served as bracket to support the tubing.

Figure 56: A sheet of flat galvanised iron that was used for a primary purpose and was later recut to make a windmill vane. ID778.

Timber railings

Adjacent to the well was a set of two horizontal bush-cut timber railings (0.13 m diameter, length 2.5 m) bolted together with three and four vertical posts each 1.4 m high (Figure 49, ID449). The railings were 0.7 m apart. Another two lines, each with three vertical posts, had no preserved horizontal rails.

Small brick feature

A feature comprised about 36 bricks and formed a level pad (Figure 57, 1.3 by 0.55 m, ID505). The bricks were irregular in size (especially length) and shape with uneven faces. They contained an aggregate very similar to gravel on the local ground surface

that suggests they were handmade with local materials. Fired bricks may have been hand made as late as 1920 in remote, rural areas (Lewis, 2020).

Figure 57: A pad that consisted of about 36 handmade bricks, looking west. ID505.

Fences

The hut was enclosed in a 45 by 38 m compound, surrounded by fences (ID438, 441) with 1.6 m high bush-cut posts. A 3 m wide gate (ID267) in the northwest corner with two strands of unbarbed wire was secured with a loop of wire. Along the base of the western and northern fence lines was a low ridge consisting of broken rock and soil. This compound fence cut across a grave.

Beyond the compound, fence lines extended at least 200 m from the hut, shown by the presence of scraps of fencing wire (ID2442, 466) and tree stumps from which the fence posts were cut. This fence was part of a district-scale arrangement of paddocks.

Faith - Burials

Two graves were near Afghan hut. One grave was within the fenced compound (Figure 58, ID771) 20 m west of the hut. About 40 milky white quartz stones, 5-15 cm in size, formed a decorative ring around a low oval central tumulus. This tumulus measured 2.5 m by 1.6 m and 10 cm high, with the long axis aligned 310° magnetic. The compound fence passed over one edge of the grave where the stone border was disturbed, indicating that the fence was built after the grave. The good condition of the grave implies that the compound was not to hold stock – for that function would have eroded the feature – but instead to exclude animals from the hut area. The grave was not repaired after the fence was built.

The second grave (Figure 59, ID519) was 100 m to the northwest of the hut. It was near a scatter of mostly fish cans and no other artefacts (Table 1). Its long axis was oriented 307° and was enclosed by a ring of 20 cm stones around a low central tumulus (2 by 1 m, 10 cm high). It was less well preserved than the grave in the compound, possibly due to disturbance by livestock. Three large (50 cm) boulders may have been grave markers. There were no other rocks of this size in view in Figure 59.

Both graves are anomalous in orientation in that they were parallel to the *qiblah*, a pattern also found by (Parkes, 1997). Muslim graves found elsewhere in this research were perpendicular to the *qiblah*, in the orthodox manner. The head and foot end cannot be distinguished in either grave. Neither grave has a headstone with an epitaph, and it is unknown who was buried here.

Figure 58: Burial adjacent to the compound fence near Afghan hut, looking northwest. ID771.

Figure 59: The second burial near Afghan hut, looking northwest. ID519.

Summary: Afghans and the Archaeology of the Afghan hut site

Afghan hut is a complex assemblage of several components with specific functions, including a building, water, burial, railings, and ventilation. Two artefacts implied digging rock. The only evidence for occupation was in four small localities, where artefacts suggested short-term camping by distinct groups. There was some evidence for transport work, while the fence around the hut probably protected the hut and post-dated one grave.

Coolgardie

Coolgardie lies 535 km east-northeast of Perth on the Great Eastern Highway. The surveyed campground is 3 km east of the town centre, and accessible 1 km along a track south from the highway (Figure 60). The town cemetery is 1.5 km west of the town centre on the northern side of the highway. The Muslim section is in the north-western corner of the cemetery.

Gold was discovered in Coolgardie in 1892. The town was gazetted in 1893 (Landgate, 2020) and the railway opened in 1897 (Austin, 2011). The telegraph line arrived in Coolgardie and Kalgoorlie in 1897 (Bolton, 2009). Coolgardie was the centre of Afghan cameleering activity from 1892, the beginning of large-scale gold mining in the Eastern Goldfields. Seventy Afghans in Coolgardie contributed to the Perth mosque fund, a number exceeded only by Perth (Musakhan, 1932).

There were two campgrounds, one east of the town near Mount Eva on Sylvester Street that Bolton (2009) briefly investigated but found nothing. Balochi cameleers used this camp built in early 1897 and its mosque ("Coolgardie Police Court," 1899, April 11). The second camp, surveyed for this research (Figure 10, Figure 60), is 3 km southeast of the town ("The murder of Tagh Mahomet," 1896, January 20) and had a mosque and was used by Pashtun cameleers. This ‘Asiatic campground’, UCL

6075 Vacant Crown Land, ID 3116271 (Landgate, 2021), measured 350 m (north-south) by 150 m (east-west).

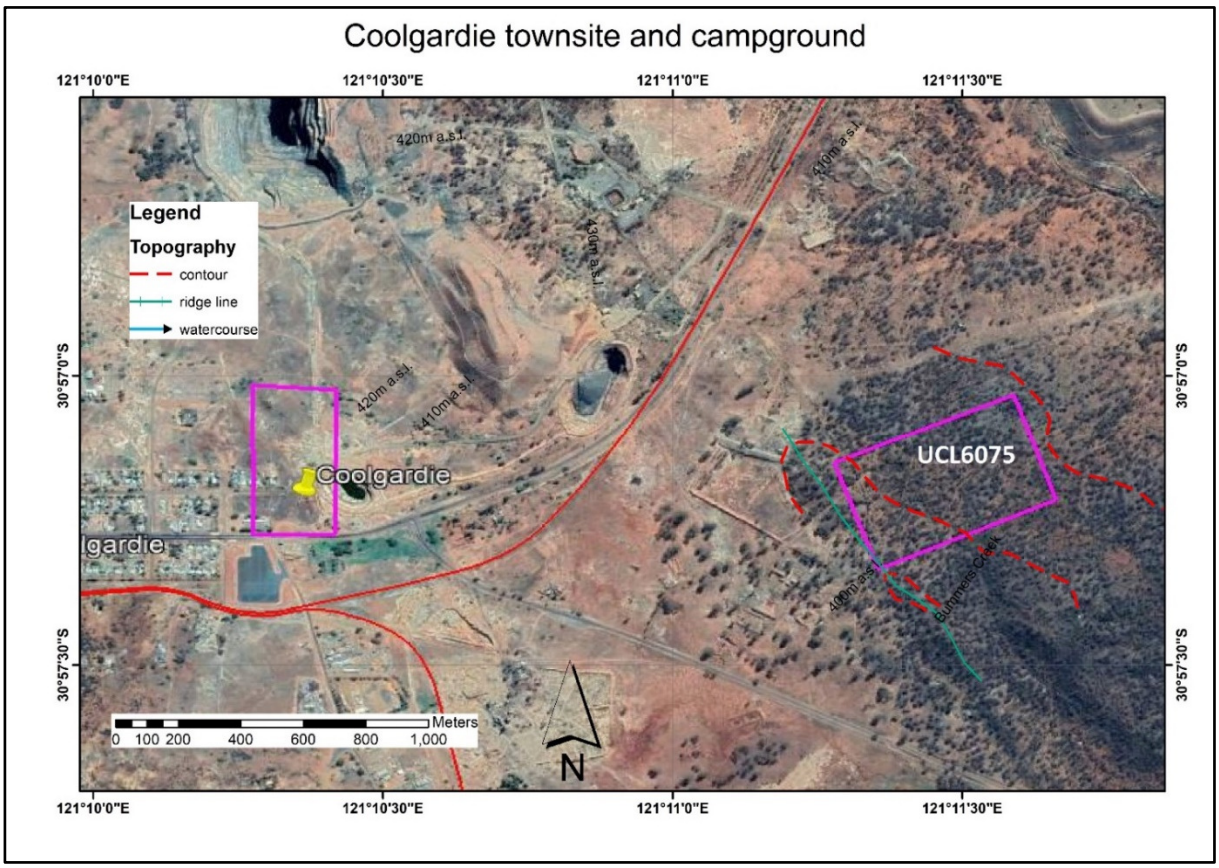

Figure 60: Location map showing the two Asiatic campgrounds including UCL6075 in pink, highways, railways in red, topographic features.

Foodways

Of fish cans found in the campground, 20% were rectangular and shallow sardine cans (ID59), some retaining a key-wind opener, while other fish can types included oval cans and squat cans (Burke & Smith, 2004). Other cans were almost all hole-and-cap cans (ID7, Figure 61) with a few round and rectangular cans with key openers. They comprised mostly lap seams plus folded and soldered side seams. They were mostly from before 1920 (Burke & Smith, 2004). Sanitary cans that entered general use in the 1900s to 1930s are rare (Burke & Smith, 2004).

Figure 61: Hole-and-cap cans and rectangular cans in a can dump, with the caps detached. ID7.

One rectangular hole-and-cap can base (9 cm by 6 cm, ID949) had the embossed label and date ‘C.Q.M.E.Co. Ld. QUEENSLAND 1894~’. The acronym stands for the Central Queensland Meat Export Company, Rockhampton and Townsville ("Q.M.E. Co. profit of £33,262," 1942, January 26). The top of a hole-and-cap can with the embossed text ‘CONRAD'S PURE BEEF DRIPPING’ (11 cm diameter, ID1018) had a large 6 cm hole for the cap, probably to admit a spoon. Conrad’s was an Adelaide smallgoods company advertising between 1895 and 1916 (Advertising, 1895, February 16, 1916, July 6). Amongst hole-and-cap and hole-in-cap cans (both variants present), the diameter of the cap relative to the diameter of the can varied greatly, 8 cm versus 10 cm for a large hole, and 3 cm versus 5 cm. One hole-and-cap can (ID 872) had a single 5 mm puncture in the lid edge and may have served as a pouring spout for liquids such as condensed milk.

Rectangular containers, mostly 15 cm high (e.g. ID918; Figure 61), were commonly hole-in-cap, some with the hole off centre, and others with a replaceable flanged lid. Burke and Smith (2004) considered that these latter contained dry goods such as curry powder or tea. Dumps were composed almost exclusively of undeformed cans. These are discussed below in Appendix 2 in terms of secondary function.

Kerosene tins mostly measuring between 34 and 50 cm high were common (about 50 noted). One (ID1179) was embossed 'PENNANT' (a Shell petroleum brand) and a few had corner pouring spouts.

The resealable can commonly used for paint and dry goods was invented in 1877 (*Sherwin-Williams packaging coatings history* 2021) but Rock (1993) dated its appearance on the market at 1906. Examples of this type were few and only identified in areas associated with modern artefacts such as the locality with artefacts ID981-1001 (detailed further below).

Glass bottles found at the site included one clear glass bottleneck (ID45) with a double collar seal that dates it to the time of Europeans entering the area to the early 1890s (Boow, 1991; Burke & Smith, 2004), and two Codd's seal type bottles in small fragments suggesting site use of before 1895 (Burke & Smith, 2004). The bulk were black glass fragments with the bases having high push-ups but some had flat bases. One example (ID884) of a single collar ring seal had sealing wire in situ that was used until 1910-1920 (Burke & Smith, 2004).

A glass bottle stopper (ID86) sheathed in lead had the embossed caption 'THos SYMINGTON & CO PYRAMID BRAND EDINGURGH'. Thomas Symington had a patent from 1874 to beyond 1923 for flavoured coffee essence.

A broken base of stemware (ID62) was solarised to an amethyst colour (Lockhart, 2006)). There were also several other fragments of solarised amethyst glass (ID9, ID1130), all showing detailed moulded designs. A small clear glass bottle (ID885) may have contained unguents or medicines. Fragments of clear torpedo bottles with rounded amphora-like bases and a 4 cm glass stopper (ID894, ID1036) were from Ross's of Belfast who exported ginger beer until 1900 (Burke & Smith, 2004).

A moderately large number of artefacts were related to food preparation:

- an iron bowl with fluted sides (15 cm diameter, ID8862), a mould for dessert such as junket that does not require immediate refrigeration;

- two fry pans (40 cm diameter, ID1170), one of white edged with blue;

- two ferro pans (16 cm diameter, ID962);

- a white enamel ferro tray with a wide horizontal border (18 cm long) was a baking pan;

- one container (20 cm diameter by 18 cm deep, ID864) with a spout, possibly a teapot or kettle;

- a white enamelled pannikin with a handle (9 cm diameter, ID56);

- several billies and billy lids (18 cm diameter, ID968);

- two steel plates, 41 cm square (ID1145, 1217), were perforated by machined holes. These are identified as wall-plates from Coolgardie safes, a cabinet that cooled food by evaporation and in use from the late 1890s (Advertising, 1898, January 12).

Ceramics comprised refined earthenware, some glazed. Most were in small fragments, but the fragment of a plate (ID1082) labelled ‘JOHNSON BROS England Ro. No. 15587’ was from a pottery in Hanley, Staffordshire, established in 1883. The style of the crown that entered use after circa 1910 and of the text style (typical of between 1883 and 1913) suggest manufacture at around 1910 (Birks, 2003).

At the locality with artefacts ID981-1001 (see ’Structure – Late’ below), a bottle with a screw cap and a narrow neck (ID995) was possibly a table condiment bottle dating from after 1920 (Burke & Smith, 2004). ID986 consists of several fragments of a jug or ewer with a blue floral underglaze transfer print, lugs for handling, and broad base with a decorative scalloped margin. Alcohol bottles were absent at this locality.

Personal

A shallow ferro salver, 30 cm in diameter with a flat base, embossed with a dense, finely detailed vegetal pattern of grape and other vines and leaves and a stippled pattern between leaves (ID1138,Figure 62) was found at the campground. The impression is of an Indian style (pers. comm. Calvo Capilla, 2023), with the absence of any images of humans or animals being consistent with use by Muslim people.

Other artefacts included the steel frame of a folding pocketknife (ID43) and several rectangular and round tobacco tins (ID103). There were two semicircular boot toe protector plates (ID50) and one heel plate (ID51), a broken coat hook and a pale green glass ink bottle (5 cm, ID886). A large white enamel basin (ID1209) and a ferro-based tub (56 cm diameter, ID1072) with two handles may have been for a variety of domestic purposes. A disc (diameter 0.4 m, ID903) of galvanised iron had a hinged attachment point and a long plate rivetted to the lid, suggesting a laundry tub.

Figure 62: An iron salver, with a fine embossed vegetal pattern, nail punctures, and melted lead ore. Top photograph – under side of the salver with the imprinted pattern of fibrous cement asbestos on the melted lead ore that leaked through the punctures. Bottom photograph - a detail from the upper side of the patter, with the melted lead ore. ID1138.

Profession

The top of a square container 22.5 cm square had a screw opening in one corner and was embossed ‘DRIALENE MINERAL TURPENTINE’. It was manufactured by The British Imperial Oil Company in Australia between 1905 and 1927 (Murray, 2001). Turpentine can be used as an antiseptic treatment for humans with scabies (Roy & Ghosh, 1944), and for camels with mange, which was common in the goldfields ("Police Court," 1896, June 18).

A cylindrical ferro container (42 cm tall, Figure 63, ID1059) had a reinforcing hoop around its base. A total of seven other ferro hoops were found, with diameters up to 1.0 m, (ID889), the circle closed with a join comprising two rivets. These hoops may have served as reinforcing bands for wooden barrels or ore buckets.

Some containers had perforated bases or sides and were commonly associated with pits and mines. Large ones were ore buckets (Figure 63) or modified fuel cans with perforated sides, whereas small cans had perforated bases (8 cm diameter, ID108).

Figure 63: An iron bucket, 40 cm high and 28 cm diameter, heavy duty construction and with reinforcing bands around it. Its side has been deeply slashed on both sides, a common feature. ID1059.

A fragment of ferro sheet (77 cm, ID1220) had a row of very closely spaced, large (~1 cm) rivets along one edge. It may have been a fragment of a ship tank (Pearson, 1992), commonly interpreted as used for water storage or water condensers (Bolton, 2009).

Two lengths of thin metal band were present, each 0.75 m long. These may be packing straps around crates (U. S. Forest Service, 1919).

Two shovels (ID84, ID1226), a basic miners' tool, were of the two-piece riveted blade and socket type. Several ferro plates (22 cm, 44 cm, ID1076) were perforated with cut nails and they may have been used as sieves in mining work.

Secondary processes are inferred for some of the can dumps (Figure 61). Many of the can caps in the dumps were detached, and soil chemical analysis shows that the soils around these can circles had been contaminated by lead and tin (see Appendix 2).

Transport – Animal, Mechanical

Two short chains were found. One comprised two 7 cm oval links and was close to a buckle, the association suggesting use on leather hobble straps. The second chain comprised four links (ID48, Figure 64): three circular rings and a 3 cm S shaped hook that may have been intended for quick release. A ferro buckle (7.5 cm, ID42) may have been for an animal harness as it was very large for a buckle for use on human clothing. No horseshoes were seen at the Coolgardie campground. A bicycle tyre, a triangular tubular frame (ID983) and car parts (a tyre and muffler) were found at locality with artefacts ID981-1001.

Figure 64: A short chain, possibly from a set of hobbles for camel or horse, with a hook. ID48.

Structure – Ferro sheets, Bricks,

Corrugated ferro sheets (n=74), many galvanised and most with 3” ripples and a few with 1” ripples, were found with some noncorrugated sheets. Size was variable: maximum preserved length was 2 m and mostly 0.5 m wide. Flat and curved sheets were present.

At one locality 5 m across, the edges of several flattened corrugated sheets (ID 72, 74) had regularly spaced rectangular holes, some made by cut nails (3 mm by 7 mm). The sheets were stitched together using metre lengths of wire (ID73) to form larger

sheets. Rivets were also used (Figure 65). At another locality 100 m away, three sheets were joined orthogonally together to form a structure with an aperture measuring 0.8 by 0.45 m (ID1212). The feature appears to be a corner of a building with what may have been a window. Another artefact consisting of several sheets rivetted together to form a flattened, tall pyramid shape had a square cross section (~30 cm) and long (1.4 m) tapering sides (ID1211). This feature may have formed a chimney. These were not sufficient to reconstruct a building of any size, singly or together.

Figure 65: Flat galvanised iron sheet and flattened galvanised iron sheets, rivetted and stitched together using unbarbed fencing wire. ID72.

Other single 3” ripple sheets were evenly curved with a radius of curvature of about 1 m, and probably formed tanks with diameters of 1 to 2 m. One near intact tank with a flat base and low conical cover was 1.6 m in diameter and 90 cm deep (ID1106, Figure

66). Fourteen tanks and curved sheets were found along the modern access track on the western side of the campground. One near intact tank had a sealed aperture near the top or bottom and could have held piping for an inlet or outlet.

Figure 66: a tank of 3" ripple corrugated iron, with a low conical cap to keep water clean. ID1106.

Six tubular artefacts were found, most associated with the tanks and curved corrugated ferro sheets near the main access track. Five consisted of galvanised ferro sheets rolled into tubes (length to 1.5 m, ID1190) and closed with a double-folded

seam. The tubes were of the same type as seen at Afghan hut. The sixth piece was 400 m east of the other tubing and tanks.

A 40 cm strip of flat galvanised steel (ID37) was hand-cut into a comb-like artefact with 20 rectangular lobes or ‘teeth’, each 1 cm wide and 3 cm long. There were several nail holes along its untoothed side, likely for mounting it. This may have been a decorative part of a structure such as a window or door frame.

Bricks were relatively abundant, with about 200 broken bricks at one locality (ID1150). Many were machine made with frogs, and a few handmade bricks contained aggregate. Some had a glassy, vitrified surface. The partial logo ‘TCR’ is legible on one, likely in full GARTCRAIG, makers of firebricks in Scotland and exported widely from 1872 through 1937 (*Gartcraig Fire Clay Co, Millerston, Glasgow – history*, 2021). A brick (ID1060) with an impressed frog was inscribed CP(B) probably came from the Coolgardie Pressed Brickworks, operating between 1900 ("Notice," 1900, September 28) to 1910 ("At the Coolgardie Pressed Brickworks Coolgardie," 1910, October 24).

Several fragments of steel sheets (to 1.3 m long, ID71, 78) with embossed patterns were found in one area 50 m across on the main access track. One of these pieces was a pressed metal ceiling made by Wunderlich (catalogue number 1423, Figure 67), available at least between 1914 (Wilson, 2009) and 1927 (Wunderlich, 1927). Another fragment of pressed steel ceiling, Wunderlich number 171, dated from 1899 to later than 1927 (Wilson, 2009). The embossed patterns were geometric or floral.

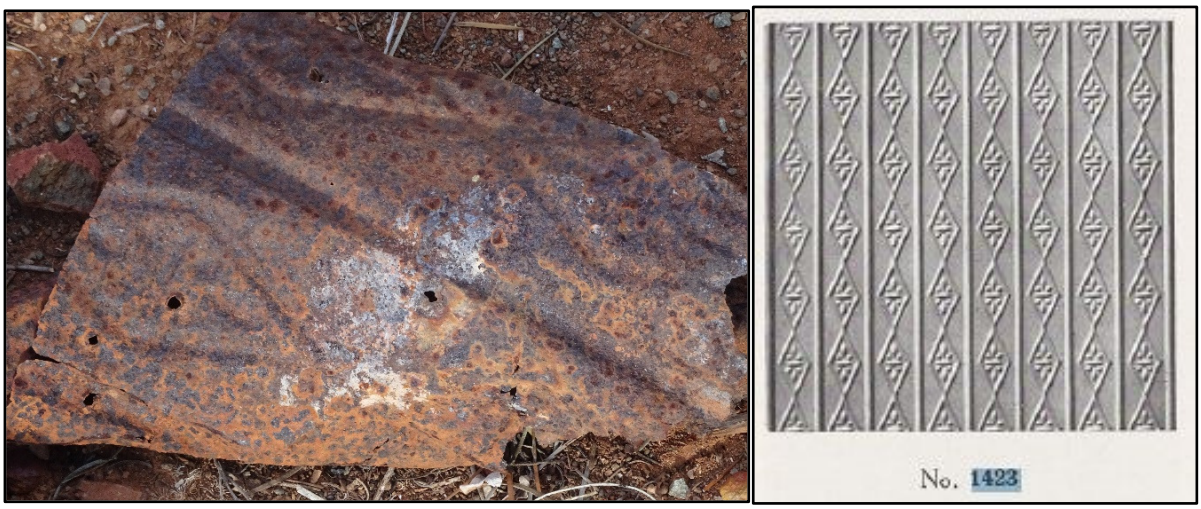

Figure 67: Left, pressed metal sheet from Coolgardie campground, 20 cm in maximum dimension. ID71. Right, photograph without scale from Wunderlich (1927).

Structure – Stone alignments

A unique feature in the Coolgardie campground (Figure 68, ID79) was a stone array on the eastern flank of a range of low hills 2.5 km east of Coolgardie. It consisted of two parallel alignments of stones, each stone (10-20 cm) on a substrate of sand and pebbles (Figure 68). It wound slightly sinuously through an area relatively clear of trees to just below the crest of the eastern flank of the ridge, about 15 m above the plain. The alignments were 36.9 m long and separated by 1.5 m, with an overall bearing of 275° (magnetic), close to the *qiblah*.

At the western uphill end, the two alignments terminate abruptly against low retaining walls of stones (Figure 68A). A small area (2.6 m across) was levelled within the retaining walls, with two heaps of excavated soil nearby (<3 m away). Some intervals of the alignments were better preserved and marked than elsewhere (Figure 68B). The downhill ends of the alignments had no clear termination, and simply lost definition near the modern track (Figure 68C). The presence of brick fragments in the rock alignments places construction of the stone alignments in the period of Afghan occupation.

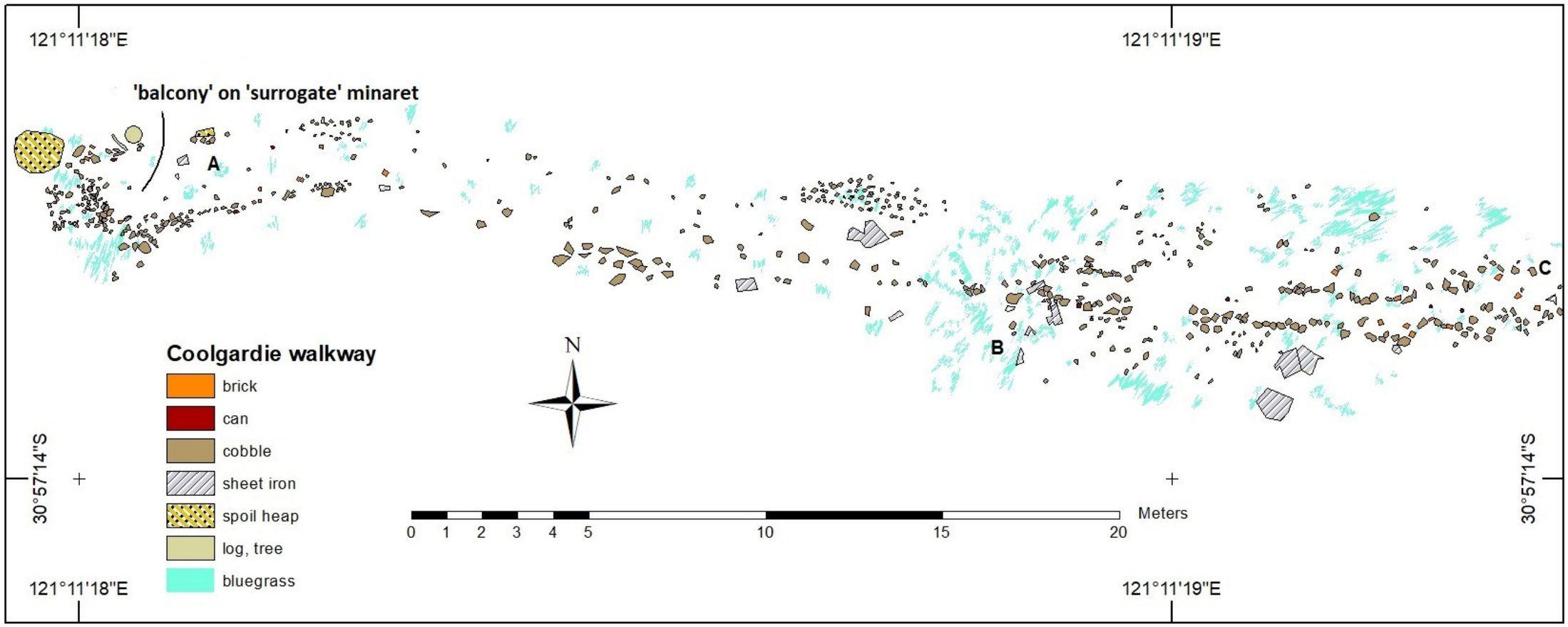

Figure 68: The stone-marked alignments on a Coolgardie hillside. The locations of the three photographs A, B and C are shown on the plan. Photogrammetric modelling of alignments used Agisoft Metashape (trial version 1.7.3). Photography with the assistance of Annabelle Irving, University of Notre Dame Australia, Fremantle. The alignment is interpreted as a walkway, a proxy minaret, and the clearing at the uphill end of the walkway served as a proxy balcony for the *muezzin*.

Structure – Late

At the locality with artefacts ID981-1001, 20 m across and 160 m northeast of the access track in the centre of the campground, had a distinct artefact assemblage with several artefacts that are younger than those seen elsewhere in Coolgardie. Four fragments of terracotta tiling (ID1001) have a semicircular cross section and resemble the Córdoba or Mission style of tile (Figure 69) used as roof and ridgeline tiles. These were manufactured by Western Australian Potteries when it was taken over in 1929 by HL Brisbane & Co Ltd (Lewis, 2021b). Fibrous (asbestos) cement sheet fragments include flat (ID999) and corner pieces (ID997). 'Fibro-ciment roofing slates' (sic) were sold in Perth from 1905 (Lewis, 2021a), but fibro only became commonly used in the 1920s in Australia (*Asbestos history building materials*, 2021). There were about 12 fragments of window glass (ID999), arranged in a jigsaw pattern where several pieces were displaced from one another by a few centimetres. A water tank (2.5 m, ID982) and piping (ID990) were also present.

Figure 69: Two pieces of Mission style terra cotta roof ridgeline tile, possibly from after 1929. ID1001.

A unique structural feature is a patch of ground (0.85 by 0.8 m square, ID993, Figure 70) demarcated by termite damaged timber slats lying on the ground. Wire netting with 2 cm apertures covered the feature that may have been a kitchen garden, the wire netting protecting plants from birds.

Figure 70: A small square of ground, less than 1 m across, was bordered by slats of wood and covered with wire netting and may have been a small kitchen garden. ID993.

Faith – Burials

Coolgardie town cemetery has a Muslim section in the north-western, Mecca and *qiblah* corner with 35 burials, some with engraved headstones and date of burial. The grave of Tagh Mohamed (murdered 1896, ID1) was erected by his brother Faiz Mohamed. Hadji Mullah Mehrban died in 1897 (ID2), also receiving a headstone with an epitaph. Urdu and Arabic characters were well formed on both headstones, so a literate or skilled Afghan mason was involved. The headstones and translations of the two epitaphs are shown in Figure 71, Figure 72, Figure 73 and Figure 74.

Figure 71: The grave of Tagh Mahomet, died 1896. Left, the headstone and grave; right, Tagh Mahomet in life.

Sacred to the memory
of
TAGH MAHOMED
WHO DIED BY THE HAND OF AN ASSASSIN
AT COOLGARDIE JANY 10TH 1896
AGED 37 YEARS.
HIS END WAS PEACE.

I bear witness that there is no god but Allah,

And that Muhammad is his messenger

(The shahadah, one of the canonical Pillars of Islam)

In the name of Allah, the entirely merciful, the especially merciful.

(All) praise is (due) to Allah, lord of the worlds.

The entirely merciful, the especially merciful.

Sovereign of the day of recompense.

It is you we worship, and you we ask for help.

Guide us to the straight path.

The path of those upon whom you have bestowed favour,

not of those who have earned (your) anger or of those who are astray.

(Surah al-Fatihah 1; The Opening; in Arabic, naskh text style)

Say, 'he is god, (who is) one.

God the eternal refuge.

He neither begets, nor is born.

Nor is there to him any equivalent'.

(Surah al-Ikhlas 112; The Purity; in Arabic)

(The last lines identify the deceased, similar to the English passage below. It is in Persian not Urdu, nasta'liq text style.
The date is in the Hijri Arabic lunar calendar: Rajab 24, 1313)

ERECTED BY HIS BROTHER
FAIZ MAHOMED

MORGAN & SANDERS **PERTH**

Figure 72: Translation of the epitaph on the headstone of Tagh Mahomet

Figure 73: The grave of Hadji Mullah Mehrban, died 1897. Left, the headstone and grave; right, portrait sketch of Hadji Mullah Mehrban ("A high priest," 1897, July 30).

I bear witness that there is no god but Allah,

And that Muhammad is his messenger

(The shahadah, one of the canonical Pillars of Islam)

In the name of Allah, the entirely merciful, the especially merciful.

(All) praise is (due) to Allah, lord of the worlds.

The entirely merciful, the especially merciful.

Sovereign of the day of recompense.

It is you we worship, and you we ask for help.

Guide us to the straight path.

The path of those upon whom you have bestowed favour,

not of those who have earned (your) anger or of those who are astray.

(Surah al-Fatihah 1; The Opening; in Arabic)

Say, 'he is god, (who is) one.

God the eternal refuge.

He neither begets, nor is born.

Nor is there to him any equivalent'.

(Surah al-Ikhlas 112; The Purity; in Arabic)

(The last lines identify the deceased, similar to the English passage below. It is in Persian not Urdu, nasta'liq text style.
The date is in the Hijri Arabic lunar calenda Safar 27, 1315r)

IN MEMORY OF

HADJI MULLAH MEHRBAN

HIGH PRIEST OF MAHOMEDAN COMMUNITY
OF AUSTRALIA. FOR OVER 30 YEARS A
RESIDENT IN S.A. AND FOR 3 YEARS IN W.A.
WHO DEPARTED THIS LIFE JULY 28TH 1897
AGED 96 YEARS
MAY GOD REST HIS SOUL.

Figure 74: Translation of the epitaph on the headstone of Haji Mullah Mehrban

Summary: Afghans and the Archaeology of the Coolgardie Campground

The Pashtun campground in Coolgardie has been identified for the first time. It conforms to the criteria for an Afghan camp of Parkes (2009). The great bulk of artefacts date from before 1910-1920. A salver has a distinctive pressed-iron Islamic-style pattern. The stone alignment fits well with the account by King (1909, January 9) of a *muezzin* calling the faithful to prayer from a hill near the mosque a mile from Coolgardie, and was interpreted as a proxy minaret: these confirm Afghan occupation. The campground was characterised by many food cans and other artefacts, suggesting settled occupation. There were relatively few artefacts associated with transport work and no horseshoes. A concentration of structural material shows the camp centre, including work with water. Some artefacts indicate mining work, and accumulations of hole-and-cap cans indicate an intense site modification process. At one locality, many structural artefacts postdate 1920 and alcohol bottles were absent. The Coolgardie Afghans buried some of their dead in the town cemetery.

Site descriptions as the basis for interpretations answering the research aims

Nine sites were surveyed for evidence of occupation by Afghan cameleers in the Western Australian goldfields. The nature of burials and features relating to religious observances formed a major set of observations. Other artefacts relating to life in campgrounds and work on the road in the transport industry were relatively sparse but allow for a range of interpretations, presented in Chapter 5. European Australian and Afghan occupation can be distinguished.

CHAPTER 5

INTERPRETATION - THE PERIPATETIC LIFEWAYS OF AFGHAN CAMELEERS

Archaeological field examination of nine sites supplemented by historical documents has yielded a corpus of material and documentary information about the lives of Afghan cameleers in Western Australia. In view of the work of Parkes (1997) and Bolton (2009), there was no initial certainty that the archaeological evidence could achieve the thesis' research aims, yet distinctive artefacts were found and all sites illuminated the lifeways of Afghans living their culture much as in their homelands or modified according to local conditions. This chapter interprets the archaeological and historical records of Afghans in Western Australia from 1887 to 1920 via the themes of migrations, faith, society, work, and redundancy.

The scientific method requires strict and clear distinction between description and interpretation. In Chapter 4, 'Results of Field Investigations' the descriptions and the most basic functional interpretation of archaeological artefacts and features were given. In some complex sites, the interpretation of the function of an artefact influences the interpretation of others in an iterative process, and through to the interpretation of an artefact and feature assemblage. This chapter fully interprets these individual sites across southern Western Australia in terms of the Afghan Muslim society that occupied this region.

From Asia to Australia

Convincing interpretations of the meaning of evidence from the archaeological record depend on contemporaneous information from the Afghans' Asian homelands that were regions with an environment similar to Western Australia: great distances, heat, shortage of water, male hegemony, a low population density, and high mobility.

However, Afghanistan is more mountainous (compare Figure 1 and Figure 10Figure 1). The first of the thesis' research aims was to document the lifeways of Muslims and Asians in their homelands, the circumstances under which these peoples came to Australia to work in the camel transport industry, and how those original lifeways shaped their lives in Western Australia after arrival. With the discovery of significant gold deposits in Western Australia at Yilgarn and Southern Cross in 1887 came a fast-growing need for reliable, rapid, and efficient transport on a commercial scale suited to the semi-arid interior of the colony. This promoted the migration and employment of those from Asia that would provide that service.

Historical records but relatively little data from archaeological remains (Figure 46, Figure 62) refer directly to the south Asian Muslim culture that these immigrants brought from their homelands and introduced, with greater or lesser modifications, into Western Australia. Afghan cultural elements that appeared in the archaeological and historical records in Western Australia concern tribal affiliations (alliances and conflicts), family relations (brothers, wives and parents, business partners), and faith (from the politics of empire to *mullahs,* mosques, and burials), in addition to less culturally specific matters such as foodways and trade or profession.

This study considered Afghans' biographical records showing both tribal affiliations (Figure 1, Figure 3) and fealty to Afghanistan and its Amir (as the Muslim who defended their independence) or to Empress Victoria (entitling them to the privileges of British subjects), or both as convenient. The historical record suggests that tribal distinctions (Balochis and Pashtuns, and the multitude of Pashtun tribes) in Afghanistan persisted after they arrived in the Western Australian goldfields. Members of a tribe tended to congregate in work groups and in some campgrounds, and records exist of intertribal murder. On the other hand, campgrounds housed a population of very diverse Afghan groups (Figure 3), but the historical record does not report great numbers or large-scale internecine conflict, despite historic tribal animosities. A case of imported religious-sectarian conflict concerned the Ahmadiyya or Qadian sect, considered un-Islamic or heretical by the orthodox (Sayed Jalal Shah, 1914, September 15). Shah wanted to ostracise (no more than that) the Qadians and their supporters in Australia and threatened recourse to 'the Government law', which he did not specify.

This ambiguity suggests that Afghans found ways to live reasonably harmoniously in Western Australia, probably because of prevailing British law in Western Australia against harm to others, and because disparate Afghan groups united against the common stranger (European Australians). At home in Asia, they may have been more quickly and more completely segregated along tribal lines. Pennell (1909) described this trans-tribal amity in British hospitals in border areas of Afghanistan, where segregation was not a choice.

Militant Islam drove resistance against British imperial ambitions throughout the Muslim world and, while it has not been demonstrated, it is likely many Afghans in Western Australia had close family connections to these struggles, particularly the contemporary uprisings of 1897 (Figure 75). Several Afghan men in Western Australia are known to have served in the British army, and men may have learned around a campfire that they and their workmates had fought in the same battle on the same day but on opposing sides. Regrettably but predictably, no Afghan cameleer in Western Australia recorded his martial exploits *against* the British in Asia.

The historical record reveals family and religious lifeways as two very powerful and enduring cultural factors that thread from Asia to Western Australia. Khawajah Muhammad Bux, a Lahori merchant in Perth and Fremantle, promoted the immigration of many of his relatives, with them working in their uncle's business on the principle of trust in family (for which he evinced little evidence). This study described the grave of Mohamad Ally in Sir Samuel and his headstone with an epitaph in English commissioned by his brother Aziz Dean, both nephews of Bux, that addressed both Afghan and European Australian witnesses. The large age range of Afghan migrants, from 10 to 48 years old, and some personal histories, imply that many came to Australia in family groups: brothers, sons, fathers together. Military experience was another connection. Afghans who had fought for the British were recommended for contracts in Australia by their former British commanding officers living in India or Australia (Stevens, 2002), who themselves may have had contracts to recommend and muster individuals. Thus, this study found a greater degree of openness, in part, to the surrounding European-Christian community than is commonly acknowledged in the existing literature ("A high priest," 1897, July 30). In

Western Australia, there was great negativity toward Afghans, but not everything was adverse.

Afghan men married local women – Indigenous, European, and Anglo-Celtic Australians – and raised families with children, but no Afghan females married outside their religion. It was improbable that census-takers counted the womenfolk, with the absence of Afghan women attesting more to the persistence of the Afghan social custom of *purdah* (seclusion) over three decades in Australia, and less to the number of women present. Many fights amongst cameleers stemmed from improprieties concerning their womenfolk. These findings amply attest to the fact that *purdah* lost none of its force after importation into Australia. This religiously closed family life was an importation from Asia.

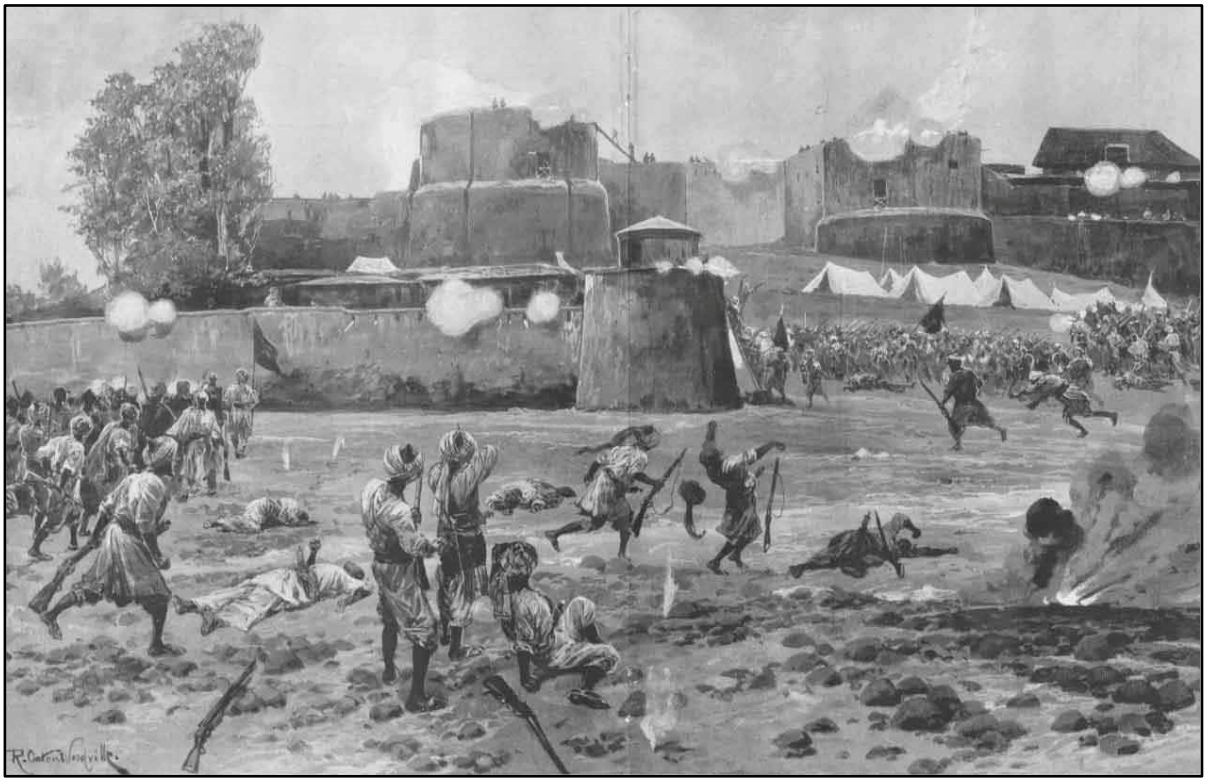

Figure 75: Lithograph showing Pashtun tribesmen attacking the British-held Shabkadr Fort near Peshawar. (Woodville, 1897, October 2). The tribe involved here, the Mohmands, had members in Western Australia at that time, and many others, Pishoris, were from near Peshawar. Pashtun immigration ceased around this time. Perhaps the most significant feature of this image is that it was composed from the attackers' viewpoint, not from that of the British defenders of the fort.

Evidence suggests that Islam pervaded every nook of Afghan life. This study found direct primary evidence for seven mosques at nine sites, a large number to be identified since mosques are symbols of pure ideas that concern religion, particularly as Islam depends less on institutions and paraphernalia than Christianity. Islam does not strictly need a built mosque, and the evidence suggests that Islam functioned perfectly well in remote and isolated Western Australia in the nineteenth century, no less than it could in Lahore or Mecca itself. However, as will be discussed below, no two mosques had the same physical detail and function.

In places of prostration

At the heart of this study is the research aim relating to the Islamic faith of the Afghans. Archaeology gives interpretations of the varied nature of mosques, burial practices, and the habits of the priesthood and veneration of *mullahs* largely imported intact from Afghanistan and India. The practice of Islam has been traced – in fine detail in some cases and included heterodoxies – from south Asia to the Western Australian goldfields despite the common difficulty in archaeology of convincingly inferring religious thought from material artefacts (Insoll, 1999), despite the fact that no details were recorded in historical documents.

The six mosques mentioned in the historical record and the three identified in the archaeological record each served distinctive functions. The archaeology of each mosque was distinct in physical attributes that were determined by the place's function in some way, reflecting importation from the homelands of the varied nature of prayer. Careful archaeological analysis shows that, in some respects, traditions were maintained from Asian homelands, while in others there were nuances introduced due to local conditions.

The historical record suggests that there were many mosques throughout Western Australia over the period of this research and after with a mosque in Leonora until 1947 when it ceased to serve that community. Similarly, mosques existed in Malcolm and Port Hedland that were much smaller centres than Coolgardie. This research did not survey the Port Hedland site, and no remains were identified of the Malcolm

example. In 1915, Sayed Jalal Shah visited and preached in Marble Bar where there may have been a mosque, but today there is no known record of it. These mosques in small centres probably had the same general central urban function as the Leonora mosque, where apparently Muslims prayed together regardless of tribal affiliation.

Afghan hut (Figure 50) was very likely a mosque as indicated by its preserved diagnostic attributes (Figure 53). The hut was oriented toward the *qiblah;* the alcove can be interpreted as a *mihrab* in the *qiblah* wall; the levelled area can be interpreted as the courtyard, an important part of a mosque that commonly occupies more space than the *musallah* or prayer hall*;* and the water well can be interpreted as the ablutions font or pool to provide water for ritual ablutions. The compound enclosed by the fence may be interpreted as a *ziyara*, defined as 'zone of respect' free of ritual pollution (Calvo Capilla, 2015). Exclusion of a grave and animal dung from the *mosque* precinct was fully consistent with a zone of respect. The fact that one grave was within this fence implies it has special importance. Afghan hut has no minaret, a characteristic but not essential feature of mosques) and the Perth mosque built in 1905 also lacks a minaret.

Construction of mosques below ground level is rare but not unknown: one Lahori mosque was built 7 m below street level (Awan et al., 2014; Hasan, 1994). The pit excavated at Afghan hut can also be understood in terms of Afghan religious practice. The prophet Muhammad received his first revelation in the Cave of Hira. Beattie (1983) described how caves can be shrines to *pirs* and the focus of cultic veneration. Sidky (1990) referred to the initiation of *malangs* (mystics, dervishes, sufis [sensu lato]) being conducted in caves. Petersen (2013) gave examples of the use of caves for burials of villagers and for grander individuals. Thus, a structure (mosque or shrine) of religious importance in a pit (a cave) is not at odds with Islamic practice in Afghanistan.

There was archaeological evidence suggesting use of Afghan hut for a purpose other than religious, with the pit in which the mosque was set resembling a cool room. The brick platform may have been used to pack and stack fruit and vegetables. However, a cool room interpretation introduces new anomalies: the courtyard has no function as part of a cool room. The isolated location of the hut, 7 km from any settlement, would be very inconvenient in the use of the feature as a cool room. There was no

evidence that the structure had a door, and the nearby grave is out of context if adjacent to a cool room. The air inlet for ventilation was on the leeward side of the hut for the predominately easterly winds: that is, the opposite of good cool room design, as both Afghans (Heidari et al., 2017) and Europeans (Holmes, 1980) knew. The Kathleen cool room is similar to Afghan hut, but it was in the town centre near a hotel, and its ventilation inlet was in the correct, windward, eastern wall (Figure 20). The cool room in the town of Kathleen is a good exemplar of conventional cool room construction.

While the physical evidence refutes primary use of the structure as a cool room, a multifunction structure – mosque and cool room – is legitimate in Islam especially in remote areas. Either as a mosque or cool room, the structure was built in a remote location, and the archaeological survey showed no material evidence of any semipermanent settlement or campground nearby. Construction warranted the considerable cooperative effort from a team of men, and this fact indicates the structure's significance.

The stone array at Bummers Creek (Figure 44) settlement was a very simple humanmade structure interpreted in this research as a stone-marked or roofless (Figure 76*)* mosque or shrine (Beattie, 1983). It is unlikely to be a tent site as discussed by Parkes (2009), since this structure is the size of a one-person tent and it is probable that the cameleers did not normally erect tents in this dry climate, especially if they were in transit over one night through a locality as small as Bummers Creek. This stone-marked style of mosque was a direct importation from rural Asia and Afghanistan (Keiany, 2010; Landor, 1902; Schimmel, 1980) with the Bummers Creek site suggesting its use in Western Australia in the same way: as a very simple structure that promoted pious observances by Muslim cameleers that passed an isolated trackside location.

This site is especially important as its rudimentary nature suggests it served very small numbers of men, and it was very near an old track from Leonora. While a mosque is not essential to Islamic prayer, the idea of a specific locality that has witnessed a history of prayer is significant. In Persia and Balochistan, rudimentary rural mosques were common near regional roads to provide religious facilities for travellers (Figure

76*)*. Some were no more than an outline on the ground surface, a single rock high with vestigial *mihrabs* and minarets.

Figure 76: Ziarat at Chah Sandan. (Belind Khan salaaming). From Landor (1902).

Coolgardie had two campgrounds and two mosques, sponsored along tribal lines of Pashtuns (the Mahomet brothers), and Balochi (Dost Mahomet). The Balochi camp site on Mount Eva is now partly built over on the outskirts of Coolgardie and no mosque or other remains of the 1890s period were found. However, the Coolgardie Pashtun campground contains a remarkably well-preserved, stone-marked walkway (Figure 68) that ascends a low ridge (Figure 77). The ridge served two functions: it separated the Afghans and European Australian settlements in Coolgardie, and specifically for the Afghans it acted as a proxy minaret with the pathway leading to the levelled area near the ridge's crest. The levelled area served as a proxy balcony from which the *muezzin* called the faithful to prayer, as described by King (1909, January 9). Close to the downhill end of this walkway were artefacts such as corrugated sheet

metal suggesting the remains of a building. The remains may be of the Coolgardie Pashtun mosque (Figure 65, Figure 67), with the pieces of pressed metal with geometric patterns found at the site making ideal decoration for a mosque. Although the individual interpretation of the remains of the mosque, minaret and balcony is speculative, the entire assemblage of features gives support to the inference of ritual significance.

According to the historical record, the two Coolgardie mosques (Cleland, 2000) were together capable of holding 300 of the faithful (Western Australian Registrar General, 1899). To estimate the size of the mosques, each person would have had a prayer mat of 1 by 1.5 m (Kempton, 2005) and they may have been arranged 25 across in six rows to give 150 in each mosque. This gives a mosque of 25 m by 9 m as an absolute minimum, plus additional space for the *mullah* and for the entrance. The Eid festival of 1897 with 200 Muslims at the Pashtun mosque ("The Mahometan festival Afghan rejoicings after a fast of 30 days," 1897, March 8) confirms these sizes.

Considered as a complex Islamic landscape (Bradbury, 2016; Parkes, 2009), the Coolgardie complex of mosque remains plus proxy minaret assumes a singular significance not recognised elsewhere in Australian archaeology. A place used for the call to prayer was integral to mosques from the very beginning of Islam but building minarets as part of the mosque was uncommon until the ninth century. Examples of the alignment of the minaret and *mihrab* along the *qiblah,* and in cases also an ablutions font or pool, include the Madinat al Zahra (Spain, 936 CE); Great Mosque of Samarra (Iraq, with detached minaret 852 CE); Great Mosque of Damascus (724 CE); and the Barsian Friday mosque (Iran, circa 1100 CE) that has its semidetached minaret on the *qiblah* wall that is an unusual arrangement (Hillenbrand, 1994). Free-standing minarets are relatively numerous in central Asia (O'Kane, 1994) and so the Coolgardie arrangement was typical of Islamic practice. However, the feature's rudimentary nature and its good preservation are unusual.

A symbolic alignment was also recognised in the Coolgardie campground (Figure 78). The remains of the tentatively interpreted mosque lie in a precise *qiblah* alignment with the downhill end of the walkway, with the alignment of the entire assemblage (mosque to balcony*)* about 15° off the *qiblah*. The proxy minaret was effectively detached from the mosque. The ablutions font or pool was possibly set on the same

axis but this feature was not identified. Avni (2009) and Magness (2003) have described primitive mosques of the eighth and ninth centuries CE in the Negev of Israel, many of which were stone-marked and roofless structures on hilltops and adjacent to dwellings. No reference was made there, however, to any minaret, and it may be inferred that rural *muezzin* used hilltops or the mosque itself for the call to prayer in these frontier areas at a time when Islam was encroaching on Christian populations. Therefore, the Coolgardie mosque and proxy minaret assemblage can be simultaneously viewed as being like those simple structures found in other rural and frontier settings, and comparable with the greatest of Islam's urban mosques with alignments along the *qiblah,* Islam's *axis mundi*.

Three aspects of the Coolgardie ridge and the walkway have a close parallel with the *hajj* pilgrimage. The *hajj* is one of the five pillars of Islam, it is required of every pious Muslim who can afford it (Peters, 1994), and takes place during the most sacred month in the Muslim calendar (Armstrong, 2002). 'Standing' from noon to sunset on *jabal al Rahmah* is an essential component of a valid *hajj* pilgrimage to Mecca (Ali, 2016; Bux, 2016a). In *Surah 37:100 to 111* of the *Quran* (Saheeh International, 2012), the prophet Ibrahim prepared his son Ishmael (Abraham and Ismael) for sacrifice on *jabal al Rahmah*, an allegory of submission to and faith in *Allah*, and Ibrahim and Ishmael are commemorated with the feast of sacrifice, *Eid al-Adha* (Ali, 2016). The pilgrimage to *jabal al Rahmah* also recalls the final sermon given by the prophet Muhammad to the faithful in the month of *Dhu'l Hijja* (Peters, 1994) on *jabal al Rahmah* shortly before his death.

The hill *jabal al Rahmah* in modern Saudi Arabia is 70 m above the surrounding plain (55 m more than the Coolgardie ridge) and 20 km southeast of Mecca. Both Coolgardie and *jabal al Rahmah* have a path leading up the hill, terminating at platforms at the summits. There has been a walkway and a platform on *jabal al Rahmah* since the twelfth century CE (Peters, 1994).

During the Abbasid period of Islam (750-1258 CE), several *hajj* roads were constructed to Mecca and the main one was the *Darb Zubaydah* from Baghdad, and illustrations show the Coolgardie walkway and the *Darb Zubaydah* were similar in style and width (al Rashid, 1977) . Both the Coolgardie walkway *Darb Zubaydah were* aligned with the *qiblah*.

The hills in the two areas lie at the limit of the two sacred areas: beyond *jabal al Rahmah* is the profane world (Peters, 1994), and beyond the area of the Coolgardie mosque is the profane Coolgardie township of the European Australian *kaffirs* (unbelievers). Coolgardie and *jabal al Rahmah* both lie at the edge of their respective sacred zones. Therefore, it is possible to view the walkway up the hill in Coolgardie as a representation of the *hajj* pilgrimage and the visit to *jabal al Rahmah*.

Finally, it must be shown that the feature preserved in the Coolgardie campground would be recognised by Muslims as a valid Islamic symbol. Aksoy and Milstein (2000) showed illustrations of *jabal al Rahmah* used in symbolism in thirteenth century *hajj* certificates, while Duggan (2012) showed the use of this imagery on prayer rugs. *Jabal al Rahmah* is therefore a symbol immediately recognisable to Muslims who were knowledgeable of the *hajj*. Haji Mullah Mehrban was living in Coolgardie at the time of the construction of its mosque*,* and at some stage made a *hajj* pilgrimage (Jones & Kenny, 2010). He may have been instrumental in the design and construction of the Coolgardie mosque complex and its *hajj* symbolism.

Parkes (2006) discussed *qiblah* and the construction of landscape as a fundamental factor in the layout of small rural Islamic buildings and settlements in al-Andalus (Islamic southern Spain), but the readable religious landscape of Islamic people there is complicated by the histories of sequential Christian and Islamic town planning overprinting each other. Madinat al Zahra (Córdoba, Spain, 936 CE) is an example of a newly planned Islamic settlement where the absence of a pre-existing urban fabric allowed the urban layout to be entirely designed anew (Hillenbrand, 1994). In both Coolgardie and Madinat al Zahra, mosque*,* minaret and *qiblah* were aligned. It is in these new settlements that Islam and landscape can be merged to the greatest extent.

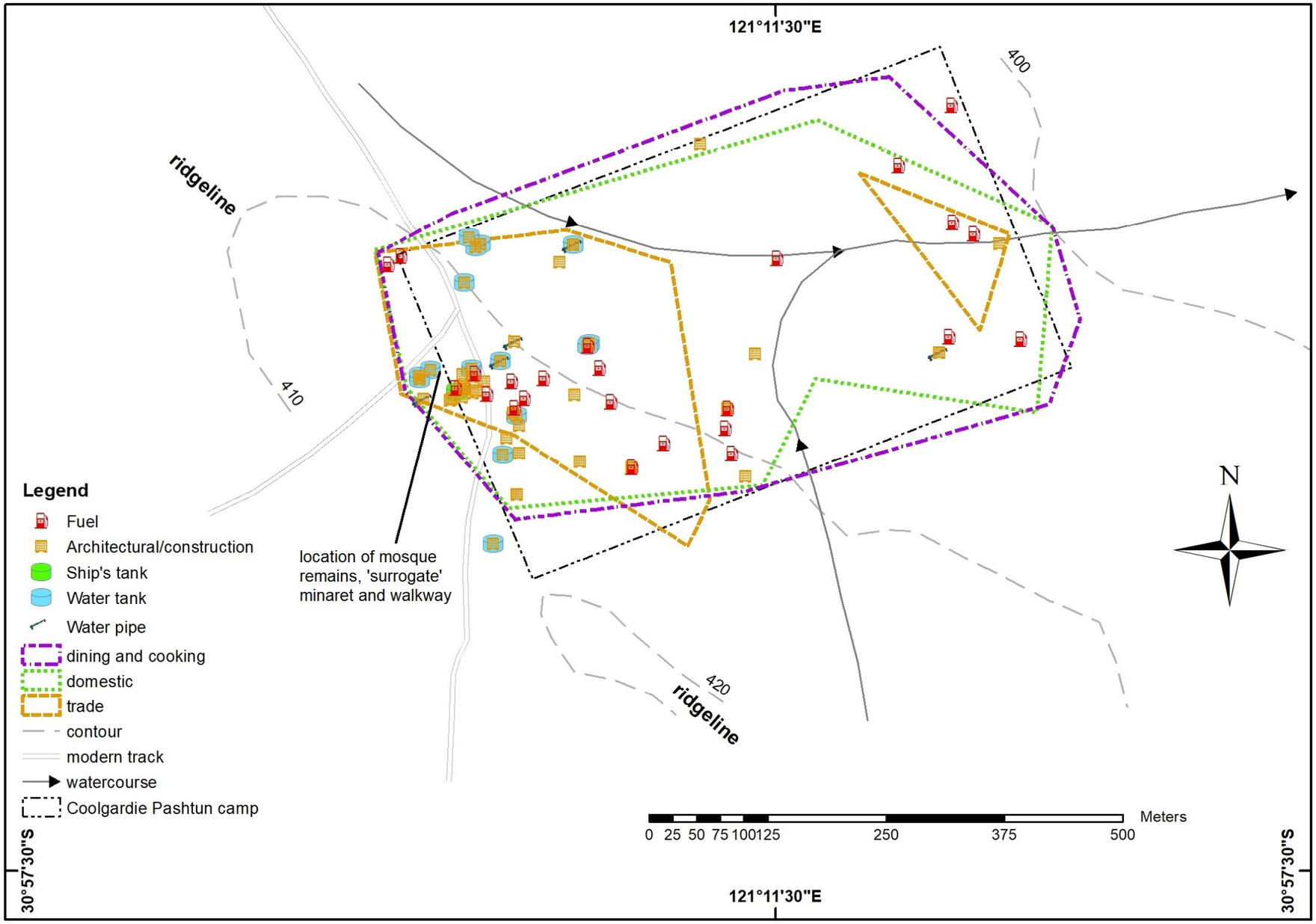

Figure 77: Map of Coolgardie campground, showing the interpreted locality of the mosque, walkway to the balcony, minaret. the campground centre with more important structures, and the areas with more domestic artefacts.

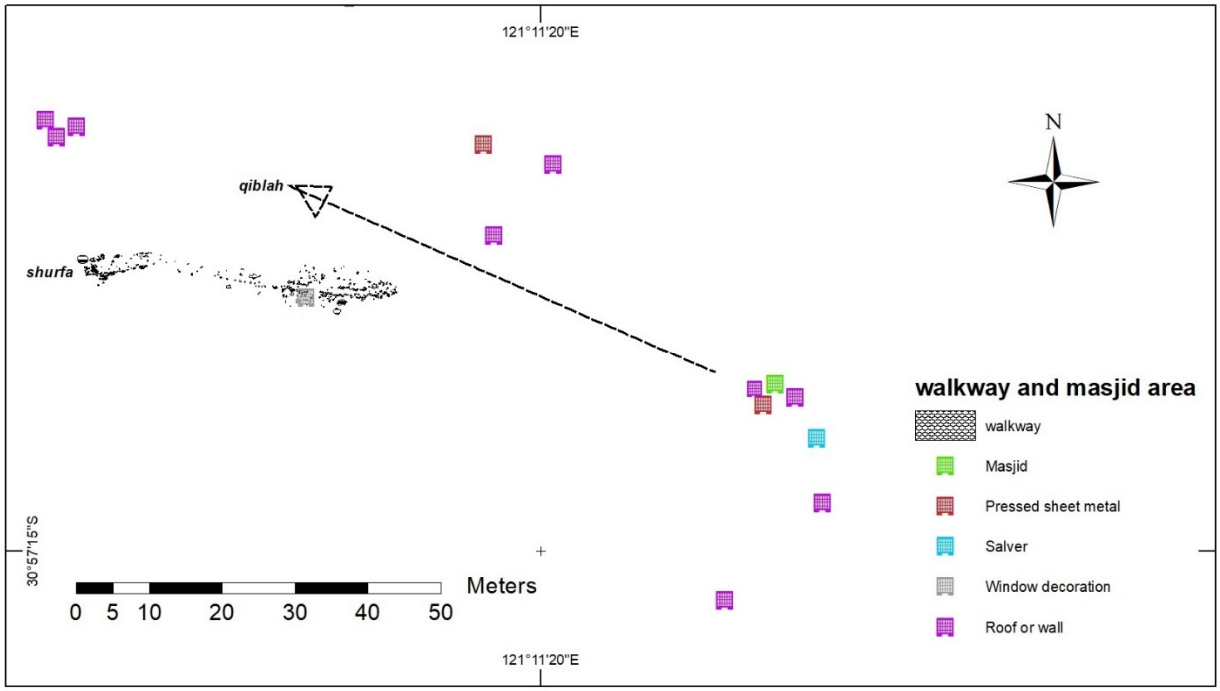

Figure 78: The walkway at Coolgardie campground, showing the relationship between the remains of the interpreted mosque, the walkway, and its western termination in the proxy balcony for the call to prayer. These were all aligned over 90 m and nearly parallel to the qiblah.

Another aspect of religion concerns the way in which the Muslim cameleers determined the *qiblah* bearing: how they originally defined the correct *qiblah* bearing, and how they applied that to a bearing for prayers, mosques, and burials. Working in the transport industry in remote locations in both Asia and Australia with very low density of populations meant the cameleers knew how to navigate. They very likely understood the use of a compass and other navigational equipment such as the quadrant (Parkes, 2009), and so could set a bearing for these purposes. Knowing the *qiblah* in Western Australia was a different matter. Inspection of world maps and atlases would have shown an approximate bearing of west-northwest. An exact bearing may have been handed down by word of mouth from someone who could calculate the *qiblah*: much of Islamic science of the tenth to twelfth centuries was concerned with astronomy, and with determining the times for prayer and the direction to Mecca in a rapidly expanding empire (Masood, 2009). However, Jiménez Gadea (2020) shows how in al-Andalus (Islamic Iberia) estimation of the *qiblah* was not always very accurate. The archaeological evidence presented here shows that the Afghans at Coolgardie knew the local *qiblah*, and that they knew how to apply it in a

new land. In Western Australia *qiblah* is 295°, and it was never south of west in this study and varies within a relatively narrow range of plus or minus 25°.

The question of who the *mullahs* were that preached to the cameleers in Australia was not considered in detail in many published accounts. *Mullahs* were commonly working men who had a level of religious education higher than that of their fellows, and commonly led daily prayers while in camp and on the road. There are many accounts of professional *mullahs* contracted by the Afghans to visit Australia, admitted to the country as priests, and of them preaching to large and small assemblies of Muslims in the various campgrounds. Sayed Jalal Shah travelled to Cloncurry, Brisbane, Broken Hill, Adelaide, Perth, and Marble Bar between 1914 and 1916, but only to places where he was invited to visit as he worked on contract. There is no record of him visiting Coolgardie, the centre of the Western Australian Afghan community, but there are other records of travelling *imams* going there. This practice of *mullahs* travelling the land to preach to small and isolated communities, and without any tribal relationship to the congregation, was imported from Afghanistan. These *mullahs* were commonly seen as independent arbitrators in settling disputes, more generally trusted than village headmen or higher-level political figures. Moreover, the *mullahs* commonly served as the leading figures in Afghanistan in raising rebellions of tribesmen against imperialist Britain. However, there is no record of such agitation in Western Australia.

There has long been a tradition of *pirs* in Muslim Afghanistan and India. Respect for *mullahs* is valued but reverence is not because *Allah* alone is to be worshipped. Despite this, there was a tradition of building a *ziarat* or shrine to commemorate a respected *mullah* that had great prestige (Calvo Capilla, 2015; Sidky, 1990), even in inaccessible locations. Large cemeteries may grow around the *pir*'s grave. This tradition provides an explanation for the location of the mosque at Afghan hut and for the two graves nearby (Figure 58). A locally respected *mullah* may have died in that area on a working trip and was buried where he died, with the grave surrounded by a fence. The mosque was built nearby to commemorate him, and the second burial nearby was the grave of someone else seeking the *barakah* (Allah's blessings or spiritual benefit) of proximity to that grave, in the manner described by Beattie (1983). In this unusual case (Beattie, 1983), the *ziarat* and the grave of the *pir* are separate

structures: there is no hint of a grave inside the hut. Practicalities such as convenience of access were not a factor in building a *ziarat* in Afghanistan, and this aspect is also observed at Afghan hut. The purpose of a shrine to a *pir* has a mostly pragmatic purpose – intercession of the *pir* in solving quotidian problems – but burials nearby are to gain *barakah* and salvation in the life beyond the grave (Beattie, 1983). *Pirs* and shrines are commonly associated with rural religiosity, mysticism, and hierarchical intercession with Allah, and with shiism and sufism. Neither of those buried at Afghan hut could be identified by name, or hence by details of faith. The possible construction of a *ziarat* is another Asian tradition that can be archaeologically recognised intact in Western Australia.

A facet of observances of Muslim ritual is the participation of European Australians in them. The ferro-based salver found in the Coolgardie campground (Figure 62) was likely a serving plate used in feasts such as *Eid al-Adha*. Since Islam does not require 'paraphernalia' as in Christianity (such as a paten, chalice, crozier, altar), it was not wholly religious in function. Different were ceremonies with a real Islamic meaning. Sayed Jalal Shah wrote in 1914-1915 of how Europeans visited the Cloncurry mosque (Queensland), and how they removed their boots before entering the Perth mosque, all this described with his appreciation of their respectful behaviour (Sayed Jalal Shah, 1915, June 27) . The burial of Hadji Mullah Mehrban in Coolgardie at the age of 96 in 1897 was reported in both South Australia and Western Australia, and the funeral was well attended by Afghans and European Australians (Figure 79). Moreover, both female and male European Australians were shown at this funeral, whereas Muslim women were not traditionally encouraged to attend funerals. Newspaper accounts of Mehrban's death carried an equally respectful message. The cross on one of the Afghan-style graves in Mount Magnet can be interpreted as the grave of an Indigenous or European wife of an Afghan husband who was allowed to retain her Christian identity even in her grave. Similarly, Afghans were keen to participate in civic ceremonies put on by the European Australian authorities, such as the opening of the Coolgardie water scheme, arrival of the railway, and vice-regal tours. The Indians used these opportunities to petition for their rights as British subjects. It is important to recall these accounts of mutual goodwill when confronted with the many accounts of ill will and worse, and to recognise the ambiguities and contradictions in ethnic relations.

Figure 79: Afghans praying at burial of Hadji Mulla, Coolgardie, 1897 (State Library of Western Australia image call number 066380PD). The important feature is the number of European Australians, including women, shown paying their respects to this well-known Muslim mullah.

The manner of Muslim burials in Western Australia was the same as in Muslim Afghanistan and India. Most burials were strictly orthodox Islamic in style: a low tumulus sometimes decorated with a perimeter or mound of quartz pebbles so that friends and relatives of the deceased could identify the grave and to prevent people stepping on it. Most Afghan graves do not have ornate monuments (Figure 22) as proscribed by orthodox tradition, but some graves in Mount Magnet did have the permitted *shahid* (Figure 21), a simple unadorned headstone and footstone. Improper as they are, ornate tombs (Figure 71, Figure 73) and mausoleums are common in Islam.

The few graves described in Chapter 4 give another archaeological insight into the relationship between Afghan Australia and European Australia. The combination of English, Arabic and Urdu text suggests close cooperation between the stonemasons, typically in Perth, and the family and friends of the deceased who commissioned the headstone. The Arabic and Urdu characters were formed accurately, indicating successful transmission of information over distance and time that probably involved several people. The brief passages in English were commonly at the bottom of the

headstone but in larger characters. The Muslim family and friends of the deceased clearly wanted English-speaking visitors to the cemeteries to know who was buried there, and that they were Muslims. There appears to have been a strong desire to be known and recognised by the wider Christian society. A large part of the cameleers' lives was spent in Muslim groups, but the grave marker inscription suggests they did not wish to live entirely separate lives amongst themselves in a Muslim enclave, and they felt no need to remain entirely invisible and subservient.

A heterodox feature of some Muslim burials in Australia defies Islamic traditions. A correctly built Islamic grave has its long axis perpendicular to the *qiblah*, with the corpse laid on its right-hand side and the face turned toward the *Kaba* in Mecca (*What is the appropriate manner of burial according to Islamic law?*, 2021). However, the two graves at Afghan hut have their long axes subparallel to the *qiblah*. Parkes (1997) observed a similar anomaly with six Muslim cameleer graves in Broken Hill (New South Wales, Australia). None of the contemporaneous historical sources from Afghanistan described heterodox burials (Landor, 1902; Mrs Meer Hassan Ali, 1917; Pennell, 1909). There is no school of Islamic jurisprudence where this is orthodox, and feet should never point toward Mecca. For cameleers in Western Australia, no explanation was found in tribal or religious (Sunni, Shia) affiliations, or in the notion of the Pashtuns' origin in a lost tribe of Israel (Aafreedi, 2009).

Anomalies in grave arrangement are sometimes mentioned (Bradbury, 2016; Drower, 1941; Lane, 1890) yet unexplained. In al-Andalus (Islamic Iberia, an Islamic culture a millennium older than Afghan hut), Jiménez Gadea (2020) and Parkes (2006) described great complexity in the orientations of Muslim graves and *mihrabs*. Jiménez (1991) and King (2019) further demonstrate the complexity in determining the qiblah. Nonreligious explanations of incorrect grave orientation are explained by Gorzalczany (2007), who ascribed small variations in grave orientation to variation in the bearing of sunrise and sunset through the seasons. Jiménez Gadea (2020) observed that grave orientation also depended on the availability of plots in a crowded cemetery. Toombs (1985) studied graves in Palestine (dated to 1400 to 1800 CE) where there were children's graves at a low angle to the qiblah, facing Jerusalem Simpson (1995). This cemetery had no associated village and included the grave of a 'holy man' (Gorzalczany, 2007; Thompson, 2006) - three parallels with Afghan hut.

GoogleEarth shows cemeteries in Gilgit-Baltistan (Jammu and Kashmir, modern Pakistan: Sonikot; Jutial Aminabad and Khomer; Zulfiqarabad; an unnamed cemetery in Konodas) that comprise numerous graves incorrectly aligned NNE-SSW. The *qiblah* in this part of Pakistan is 255° true north, so graves should have their long axes aligned 345°-165°. Gilgit-Baltistan, the nearby Hunza River valley, Badakhshan and Pamir areas have historically had a high proportion of Ismailis in the population (Andreyev, 2002; Sökefeld, 1998). Ismailis form a sect within Shia Islam, distinguished by their belief in the correct descent line of the Imamate from Fatima, the daughter of the prophet Muhammad, and his son-in-law Ali. Orthodox Sunni regarded Ismailis as not true Muslims or as heretics.

Shingiray (2018) described a 13-14th century CE burial in Kalmykia on the lower Volga River of a warrior. This was a normal Golden Horde burial: mound, pit grave, arrows, horse accoutrements. It also included a silk headband with the word *al-alim* (the wise or learned) embroidered in Arabic. The orientation of the grave was normal for nomads of Mongolia, aligned NNE-SSW. With the syncretic growth of Islam in central Asia, it was also ‘normative’ for ‘Islamicised or Islamicising’ Uzbeks and Tajiks. This grave orientation may be a local tradition that survived within local syncretic Islam. Kalandarov and Shoinbekov (2008) concurred in identifying a pre-Islamic heritage in the Islam of Badakhshan Ismailis.

These observations cannot be readily applied in Australia. In the Broken Hill Muslim cemetery (Parkes, 1997), there are six graves with a heterodox orientation. One of these is the grave of Gunny Khan ("The late Gunny Khan. An interesting personality," June 6, 1905), the only named individual who was buried in this manner. The long axis of his 1905 grave is oriented to face 245°, whereas the *qiblah* in Broken Hill is 275°. This is not a large angle but the map of Parkes (1997) shows an unambiguous discordance. He was a Suleiman Khel tribesman and Sunni Muslim (Jones & Kenny, 2010), and should not have been buried in this heterodox manner. However, there is no convincing way to connect Gunny Khan, a Sunni from Quetta, with Ismaili Islam of central Asia.

The urban cameleer

A research aim was to gather archaeological evidence associated with the Afghans and their lives in settled centres and campgrounds. Only the more important settlements had campgrounds allocated by the local Roads Boards, and it appears that minor, short-term campgrounds not in the immediate vicinity of towns were informally occupied. There was almost no direct historical record of the nature of the campgrounds except for newspaper accounts describing in literate and graphic language the pungent smell (camels, rubbish) emitted from these places, yet Figure 80 does not entirely substantiate this.

This study identified several areas designated as ‘campgrounds’ on cadastral maps of the time and rediscovered the hitherto forgotten and undisturbed Pashtun Coolgardie campground, with the archaeological information found there taking the understanding of this episode well beyond the historical data.

Archaeological evidence showed occupation of some campgrounds from the first days of mining in 1894 to as late as 1947 in Leonora. The artefacts at the campgrounds that unambiguously indicate Afghan occupation include religious structures, burials, a salver distinctively embossed with a fine vegetal pattern possibly used in communal feasts (not likely in religious services), a camel-borne water tank, and a small ornamental brass ornament or bell from a camel harness that highlights the greater degree of decoration of Afghans’ camels relative to Europeans’ horses. The campgrounds were characterised by an abundance of alcohol bottles, discordant with the model of Parkes (1997), but a paucity of these bottles in some individual localities probably indicates Muslim occupation. The alcohol bottles may mean that the campgrounds were used by a variety of transients, itinerants and outcasts, Afghan and non-Muslims alike (Sunseri, 2015), either together or at different times, but historical documents always simplistically equate campground with Afghans.

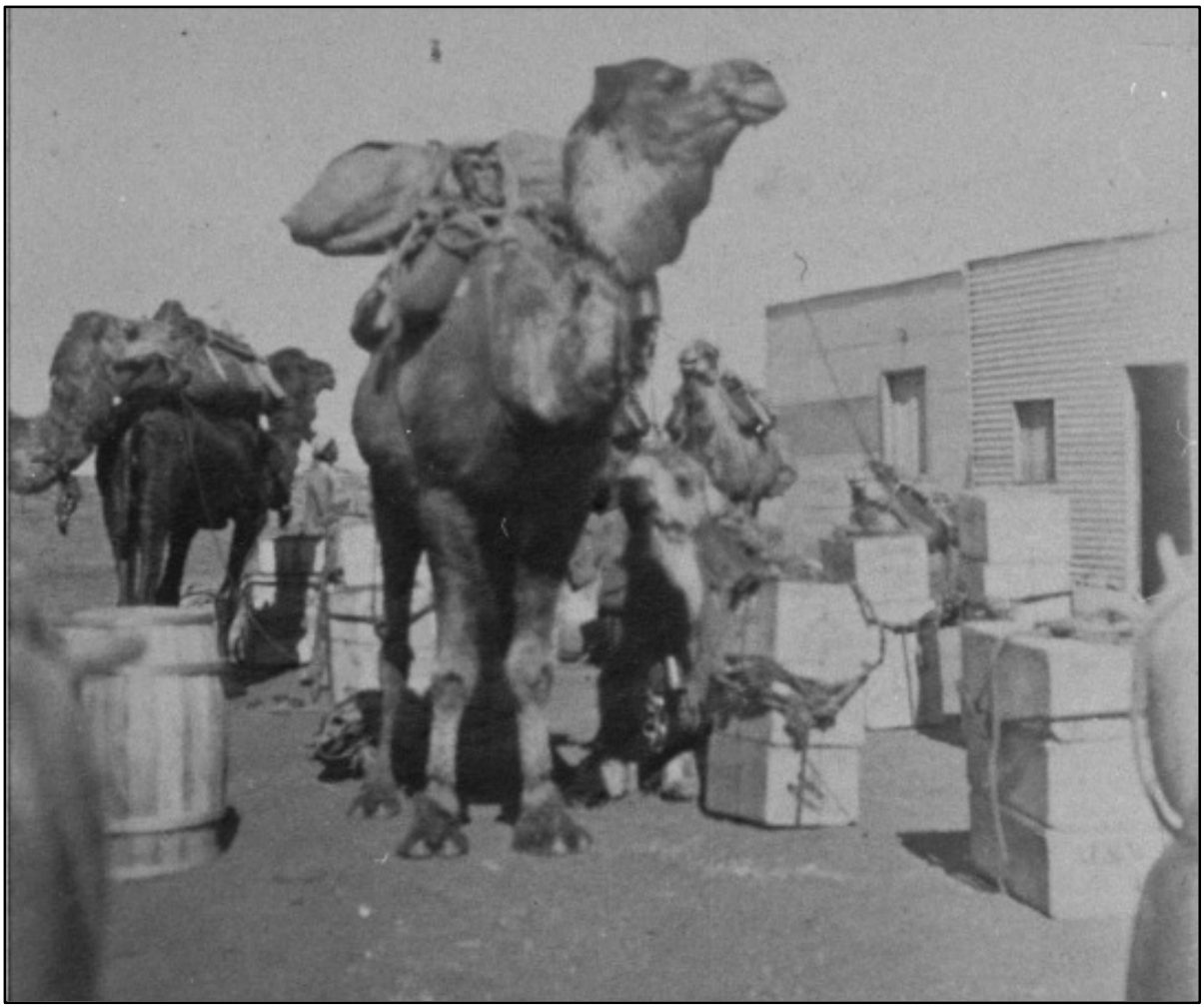

Figure 80: At the Afghans' camp, Coolgardie, W.A., 1896, (State Library of Western Australia image call number 066379PD). The view in this photograph cannot be matched with anything observed in the field, and it is not clear which of the two Coolgardie campgrounds is shown.

In Coolgardie, an assortment of structural material, vitrified bricks and sheet iron from water tanks was interpreted as a working area lying along the main track of the camp (Figure 77). The archaeological evidence suggests water condensing installations in the campground (Figure 31, Figure 77), an inference supported by the historical record (Drewery, 2008). The production of potable water probably occurred in many sites, and before 1903 when water was first piped from near Perth, potable water was more fundamental than gold mining.

Artefacts related to freight indicate usage of the sites as transport and loading areas (Figure 80). The distribution of some artefact classes in the campground at Coolgardie shows a moderately clear differentiation. Artefacts associated with food preparation and other domestic activity were found throughout the campground, whereas artefacts

related to structures, water condensing and other trades form one large cluster along the modern access track in the west with a smaller concentration further east (Figure 77). Similar remains were also found at Malcolm campground, but there the site was intensely disturbed.

Artefacts interpreted as beam balances (Figure 39) and square cans that may have contained dry foods suggest an area in the Leonora campground probably comprising outlets selling foodstuffs. This suggests that commodities and foods bought by Afghans were not entirely the same as for European Australian residents in Leonora. If Afghans maintained their culinary traditions, an industry for importing foods for Afghans may have developed. It is known that Fakhruddin managed a store in Sir Samuel for a period, and Khawaja Muhammad Bux maintained an import business based in Perth. The presence of ink bottles at Malcolm and Coolgardie indicates levels of literacy in the campground, and possibly numeracy for bookkeeping.

There was an abundance of foodways artefacts, including many food cans, remains of a Coolgardie safe, pots and pans for cooking, water buckets, teapots, and billies. Very few sanitary cans from after 1920 were present at any of the sites surveyed, so the artefacts indicate diminishing occupation of the sites after 1920. No cutlery and very few flatware artefacts were found, plausibly suggesting communal eating with the fingers but, if used, people would have been careful not to lose such basic equipment. Some ceramic artefacts indicate a degree of domestic refinement. Enamelled basins were commonly found and could have been used in cooking and eating as well as washing and other uses. The historical record suggests that curries, kebabs, and stews were Afghans' common form of food, and photographs from the time show that they kept goats for meat. Cans probably contained vegetables that went into curries, and less likely meat since Muslims were unwilling to eat meat that may have included pork and had been butchered by *kaffirs*. Condiment bottles at Coolgardie indicate use of a variety of flavourings, while the many fish cans (containing a *halal* or 'permitted' food) may be a loose indicator of Muslim occupation.

No areas in the surveyed campgrounds were specifically associated with dwellings. There were no remains identified as rammed earth floors, hearths, nails, or furniture parts. This suggests the use of portable accommodation, and it may be that black goat hair tents imported from Afghanistan or tents made and bought in Australia were

the main form of dwelling used in Western Australian campgrounds. The lack of artefacts makes a determination about accommodation types difficult, but a hook resembles a type of tent fastener (Figure 38) used on Persian and Balochi black goat-hair tents (Keiany, 2010) where the split ring end was attached to the guy rope and the hook end inserted into a loop on the roof-sheet of the tent. Furthermore, there are historical records of Afghans using tents in campgrounds ("The Afghan nuisance," 1897, June 21; Kempton, 2005).

Housing for women and family in the campgrounds needed to allow for *purdah*. However, keeping women secluded in campgrounds with a high population density of young single males seems improbable. An Afghan would not leave his wife without protection or supervision by a close male relative. For the same reasons, it seems improbable that many couples went on the road together, yet the novel 'The Story of Lafsu Beg' (Gunn, 1896) described just such a situation, and the author appears to have been quite knowledgeable of cameleer life. It was possible that some close family groups, with women, occupied 'compounds' in the campgrounds and travelled together for work. Afghans did own residential and commercial properties in Perth, Coolgardie and other towns, and the problem of housing their women and family in campgrounds may have been one motivation for this.

Artefacts indicative of a more permanently settled occupation found on campgrounds were spatially very restricted and mostly associated with a period after 1920 and may indicate Afghans who did not leave Australia as they aged or stopped working as cameleers. A few Afghans worked in other industries such as retail, pastoralism or agriculture and may have lived in the towns or on farms. Mohamad Ally lived in Lawlers as a fruiterer where no campground is known, and he may have lived in the town or perhaps on an orchard. Permanent townships for European Australians and campgrounds on settlement outskirts for cameleers were largely mutually exclusive, as shown by Sir Samuel and Kathleen.

There was archaeological evidence for copper cauldrons and primitive washing machines for washing clothes (Figure 18). It is possible these were from commercial (not private) laundries, commonly run by Japanese or Chinese groups in the goldfields. These peoples may also have resided in the campgrounds and may have been responsible for some of the alcohol bottles. Afghans were fastidious about their

dress on festive days, with many photographs showing them in traditional finery (Figure 81), and newspapers commonly commented on it. As with food, there was likely an import business from Asia to supply the Bengali tailors, and European Australian women (Bux, 2017), in Perth and Fremantle.

Figure 81: The travelling imam from Karachi, Sed Jahlal Shah, as photographed at the age of 55 for his Western Australian immigration papers in 1901 (Western Australian Registrar General, 1901). This is not Syed Jalal Shah who wrote to the newspaper ‘Siraj al Akhbar’.

While there is certainty about the antagonism between Afghans and many European Australians, to leave the characterisation there is deceptive. Archaeology and historical documents expand the understanding of these points. Many letters to editors complained variously of the Afghans and their camels, of the men's dark skin, of their reputation for dishonesty, of their alleged habits of dominating roads, of cruel treatment of their camels, and of befouling precious waterholes. However, criticism of their Muslim faith was never a primary theme, and the building of mosques was never greatly impeded. Criticism of the Afghans met with occasional rebuttal, once from the Police Commissioner, from stalwart defenders amongst the European Australians, and from literate Afghans who were commonly more cogent than their anglophone critics and who, for good measure, added their criticism of the behaviour of drunken Australians.

There were many instances when Afghans offered and received good integration with wider society: English on Asian epitaphs, welcomes to places and events of Islamic significance, and enthusiastic participation in official civic ceremonies. Australian women and children did not hesitate to scavenge in campgrounds for solder from food cans (Appendix 2). However, one fundamental source of antagonism was in industrial relations. Afghan cameleers often did work that European teamsters with horses or bullocks could not do, for a cost they could not match, and most understood this. Frederick Vosper's campaigns were ultimately based on labour relations and the undercutting of wages, along with the other racial elements.

When Afghans committed criminal and other misdeeds, their experience before the courts was equally varied. A European Australian, Knowles, was acquitted of murdering two Afghans at Afghan Rocks in an incident involving water usage, and there were others acquitted in comparable cases. Afghans were convicted of murdering fellow Afghans and of European Australians and executed, but there was also a more lenient response to one murder by an Afghan on a plea of insanity. Another Afghan won a case over wages against the well-known John Dunn who was instrumental in establishing Coolgardie as a mining town. Bux was taken to court over a charge of kidnapping – he was keeping his wife at home in strict *purdah* – but it was resolved by the magistrate's suggestion that he regularly take his wife out for a walk after dark. Afghans also seemed very ready to take to court their disputes amongst

themselves over payment of wages and debts incurred in purchasing camels. This implies a level of trust in the law of Western Australia and a willingness to live within the colony's judicial and social system. There was also the potential for conflict amongst Afghans along tribal divisions, but there is limited evidence for this. Perhaps the sense of being Muslims and isolated as a group within European Australian society surmounted divisions between tribes.

The relative abundance of horseshoes in some campgrounds was unexpected, as it indicates the use of horses. Afghans are always discussed in terms of camels and rarely of horses (Stevens, 2002). However, Figure 82 shows an example of the use of horses in Afghanistan in the nineteenth century, where there was clearly prestige involved: two men ride one camel, while one man rides a horse with retainers following on foot. It appears that, just as some European Australians used camels, some Afghans used horses. The archaeological record of horseshoes may mean that when the Afghans' horses threw their shoes they were not collected for recycling if there were no local farriers.

Work, and on the road

The research aim regarding trade and profession was to gather archaeological evidence associated with the Afghans and their working lives with camels in the transport industry. Such a study could focus on the routes between railheads, settlements, and mines, but the routes taken were not readily identified, residence time at any waypoint on a route may be very short, and great care would have been taken by the cameleers with essential equipment on the road. Bummers Creek was a settlement that may have been a convenient overnight stop on the road between places such as the Leonora railhead and local mine sites and Laverton. No distinctively transport-related or Afghan artefacts (except the stone arrangement discussed above), or even of features such as the well-known hotel, were found. Therefore, this study did not attempt to trace or examine routes, as this would be beyond the time scale of the study.

Nonetheless, this archaeological work has revealed details of the working life of Afghans as cameleers or simply as working men that has not previously been available for Western Australia. There was a general paucity of artefacts found from south Asia or used by Afghans in their work. This was possibly due to the perishable materials used for manufacturing camel saddles, and the very mobile lifestyle of the Afghans means that they carried a minimum of equipment. Camel equipment replaced and repaired in Australia was probably not readily distinguishable from European Australian teamsters' equipment. There were few historical references, as Afghans left no records with details of their equipment and personal belongings. As with dining habits, few at the time considered these very basic observations worth recording. Given that camels were unloaded and loaded many times over the years at these sites, items would break and leave an archaeological residue.

Transport-related artefacts that were clearly from horses include horseshoes, bits and some pack saddle components that appear too small for camels. There was an abundance of horseshoes in small campgrounds but not in Coolgardie. The size of horseshoes varied widely and may have included draught horses in addition to more prestigious riding animals. Buckles, circular and D shaped rings, and short chains that may have been part of hobbles (Figure 42) were for use with camels and horses alike. Afghan hut was not a campground, and the horses used there may have all been for personal transport during construction of the hut. Of the camel-related equipment, one brass bell (Figure 46) and one water tank (Figure 41) formed the archaeological record. A turpentine can suggests treating mange in camels. Pack saddles and halters for camels were traditionally made almost entirely of perishable material and nothing has survived in Western Australia. The archaeology of many campgrounds includes ferro barrel or bucket hoops (see barrel in Figure 80) and thin ferro straps probably used to reinforce timber crates (Figure 47). These artefacts were probably the remains of the handling of goods in the campgrounds.

Several campgrounds were near railways (Leonora, Malcolm, Mount Magnet) where there were many artefacts related to the operation of trains such as the numerous dog spikes and Gargoyle brand lubricant used in steam engines. In South Australia it was common (Jones & Kenny, 2010) for Afghans to work on the railways, and this is the first archaeological evidence in Western Australia of this type of work. The association

of campgrounds with railways also supports the suggestion that itinerant groups in addition to Afghans used these places.

Figure 82: James Atkinson; Khyber Pass Ali Mosque from the north. The road through a narrow cleft through which a rapid torrent flows; 1840; watercolour, pen, ink; British Library: Asia, Pacific & Africa Collections. The image shows both a camel and a horse being used. James Atkinson was Superintending Surgeon of the Army of the Indus, Bengal Division, in the First Afghan War.

At Afghan hut, the wooden railings were not for use as a water stand (they were structurally too weak), or hitching rails (too close together and too high), or the remains of a structure (there were too many vertical posts). They resemble racks called *khishmish khana* (Figure 83) used in Afghanistan in the present day for fruit drying. Mohamad Ally was described as a fruiterer at Lawlers and was buried 7 km from Afghan hut, and it is possible that he used the racks in a fruit drying business. Dried fruits are an Afghan delicacy (Qaiyum, 1945; Zach Lea, 2005) and are ideal snack foods for days on the road (Carnegie, 1998). Sales may have been dominated by Afghan-run stores.

The well at Afghan hut probably had two functions, as a water source for ritual washing and for irrigation, introducing another layer of complexity to interpretation. The railings, galvanised tubing, deep water well, windmill vanes and the interpretation that the compound fence was built to keep animals out suggest that the well also served to irrigate an orchard in the compound. However, no direct evidence for cultivation was identified at Afghan hut. However, the mosque in Cloncurry (Queensland) had an orchard up to 1947 (Stevens, 2002), and Sayed Jalal Shah (1915, June 27) described vines around the Perth and Adelaide mosques. Fruit growing and drying may also justify the possible secondary function of Afghan hut as a cool room, so the dried fruit industry may have been another Afghan custom imported into Australia.

Figure 83: Racks for drying fruit in modern Afghanistan (*Afghan raisin houses get a facelift to boost productivity*, 2017). Compare with Figure 49.

The association of Afghans with mining is uncertain. The Goldfields Act of 1886 prohibited the issuance of a ‘Miners’ Right, any lease, licence or permit to any Asiatic or African alien before the expiration of five years from the date of the first proclamation of such goldfield’. Aimed initially at the Chinese, the legislation also applied to Afghans. Nonetheless, three Afghans were issued licences in Geraldton

and Broad Arrow in 1896 and 1897 as British subjects (Western Australian Department of Mines, 1897), but this decision was later reversed by the Mines Department because of their Asian origins.

Despite this ‘legal’ obstruction, the archaeological record in campgrounds does show mining-related activity. At many sites there were large, robust ore buckets and shovel blades typically used in mining but potentially with many other uses. The sides of many large containers were perforated with either long cuts or point punctures (Figure 32, Figure 33). Small cans with perforated bases were possibly used as makeshift crucibles for smelting samples of ore. These perforated artefacts were likely related to mining, and some were spatially associated with mine shafts in the Coolgardie campground. Equipment used in mining may have been used by Afghans in illicit, opportunistic mining without a licence. Mining work indicated by campground artefacts may also relate to any unsettled, itinerant or outcast residents of the campgrounds who were not Afghans (Sunseri, 2015; Voss, 2015).

There are records of camels carrying ore to State batteries (Thomas, 1912), but this might have been profitable only with the richest ore, or for samples taken for laboratory assays. The carting of timber (Figure 84) under contract to mines was a major and reliable activity for camel drivers, at times disputed before the Mining Wardens over the low prices charged by Afghan carriers. The cutting of timber was typically done by others, including European Australian men, working under Afghan contractors.

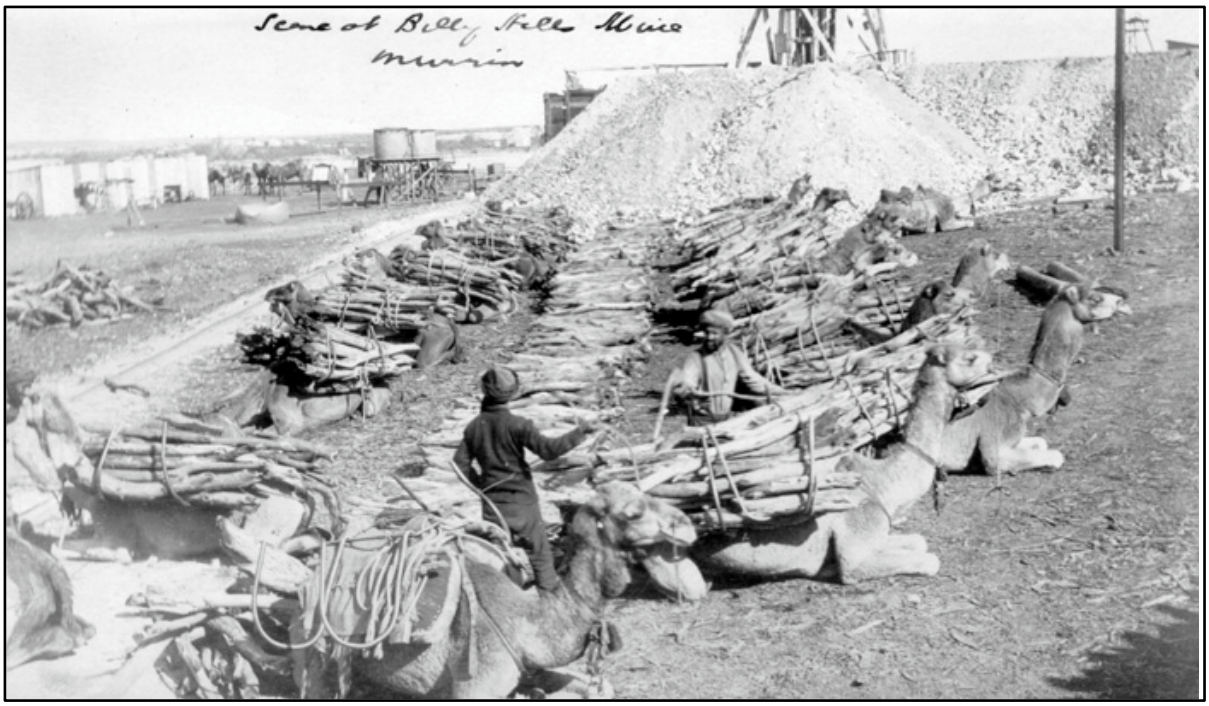

Figure 84: Scene at Billy Hills mine at Murrin. Murrin is between Leonora and Laverton, not far from Bummers Creek and Malcolm (State Library of Western Australia image call number 005645D). Billy Hills operated between 1905 and 1921 (Geological Survey of Western Australia, 2021).

Localities at Afghan hut (Figure 45) in Table 1 show distinct artefact assemblies (alcohol bottles versus fish cans) that suggest different groups occupying the sites and perhaps even contemporaneously, with Afghans with fish cans and European Australians with the alcohol bottles. The Europeans were possibly prospectors, stockmen or fencing crews.

Whereas European teamsters commonly used animals including camels in draught teams, the Afghans mostly used camels as pack animals – but not exclusively (Figure 85). This custom had the consequence that they did not stop for meals during travel as this meant unloading the camels that took hours with seven or eight camels per man. With a draught team, the wagon could simply be unhitched.

Figure 85: A camel team hauling baled wool, Carnarvon, 1925 (State Library of Western Australia image call number 001562PD)

Many Afghans came to Australia under contract to businessmen such as the brothers Faiz and Tagh Mahomet, but it is unclear if contract was the principal mode of bringing them to Australia. Even travelling *mullahs*, of whom there were many, were professionals and contractors. Men commonly took up a wide variety of work when they stayed longer than a few years, especially later in life, and a very few like Mahomet Allum (Batchelor, 2018) became very widely known professionally in business (in his case as a herbalist) and in society. However, he never became a citizen of Australia.

And then they were gone

The final research aim was to understand the circumstances under which the camel transport industry declined and disappeared in the early twentieth century, and what became of the individual Afghans and their families. Archaeological and documentary evidence together enhance the understanding of this decline.

This decline is clearly seen in the archaeology of Afghan campgrounds. The sites of the Mount Magnet, Leonora and Malcolm campgrounds were cleared (Figure 34), most likely repurposed by town authorities and perhaps from as early as 1919 up to 1947 in Leonora to release land for public purposes such as sports fields. However, the Coolgardie campground was not cleared in the same way, but simply fell into disuse and was only rediscovered during this study. The distance between the campground and Coolgardie probably resulted in a different fate for this peripheral area compared to other towns. One locality in the Coolgardie campground, with artefacts comprising window glass, ceramics but lacking alcohol bottles shows a more permanently established household, probably occupied by a Muslim family after the 1920s who had perhaps retired there. Many contracts for cameleers and workers were for two or three years, after which the Afghans may have simply returned home as the work disappeared. However, older men who spoke adequate English and those that had married in Australia may have had nothing to return to in Afghanistan and remained in Australia.

The salver found at the Coolgardie campground had a late stage of modified use that can be dated (Figure 62). The primary function of the salver was probably as a serving dish at social or religious festivities. However, later modifications included the punching of holes in the salver's base with a nail with rectangular cross section 8 mm by 5 mm and a tapered shank. The date for the last use of cut nails, circa 1900 in the U. S. A. (Merritt, 2014), is reasonable for Coolgardie. The artefact's secondary use was to hold galena (lead) ore while it was heated. The melted galena ran through the holes onto a piece of fibrous (asbestos) cement sheet (fibro) leaving a negative imprint of the knotted fibro texture on the melt (Figure 62). Asbestos sheeting became a common building material in the 1920s (*Asbestos history building materials*, 2021), and therefore the secondary use of the artefact postdates 1920 and the period of the camel-based transport industry.

Census data analysed in this study show that the numbers of Afghans in Western Australia declined in the early twentieth century, but the data did not allow precise distinction between cameleers and hawkers or pearl divers - all work commonly done by Asian Muslims. The population data in Western Australia of Afghanistan-born and British India-born residents between 1891 and 1937 (Figure 8) shows various degrees

of decline, by 50% for British Indians (including hawkers who may not have suffered such a loss of work) to a fall of 85% in Afghan-born males from 1901. There was a major, rapid, and uninterrupted fall in numbers from a peak at around 1905 (Figure 8).

By 1920, the government-operated railways (Figure 86) had expanded in the goldfields, reaching its maximum extent in the 1930s. This had the foreseeable effect of limiting the opportunities for cameleering work. As railheads reached further into the mining hinterland, the distances required for further transport of goods to and from mines and towns diminished. In addition, under the exigencies of World War 1, technology rapidly evolved, seen after the war by the improvement in performance and reliability of aeroplanes and motor vehicles. Warfare and remote Western Australia made comparable demands on vehicles. With the availability of vehicles and improvements in road, rail and air networks, the camel lost its peculiar advantage.

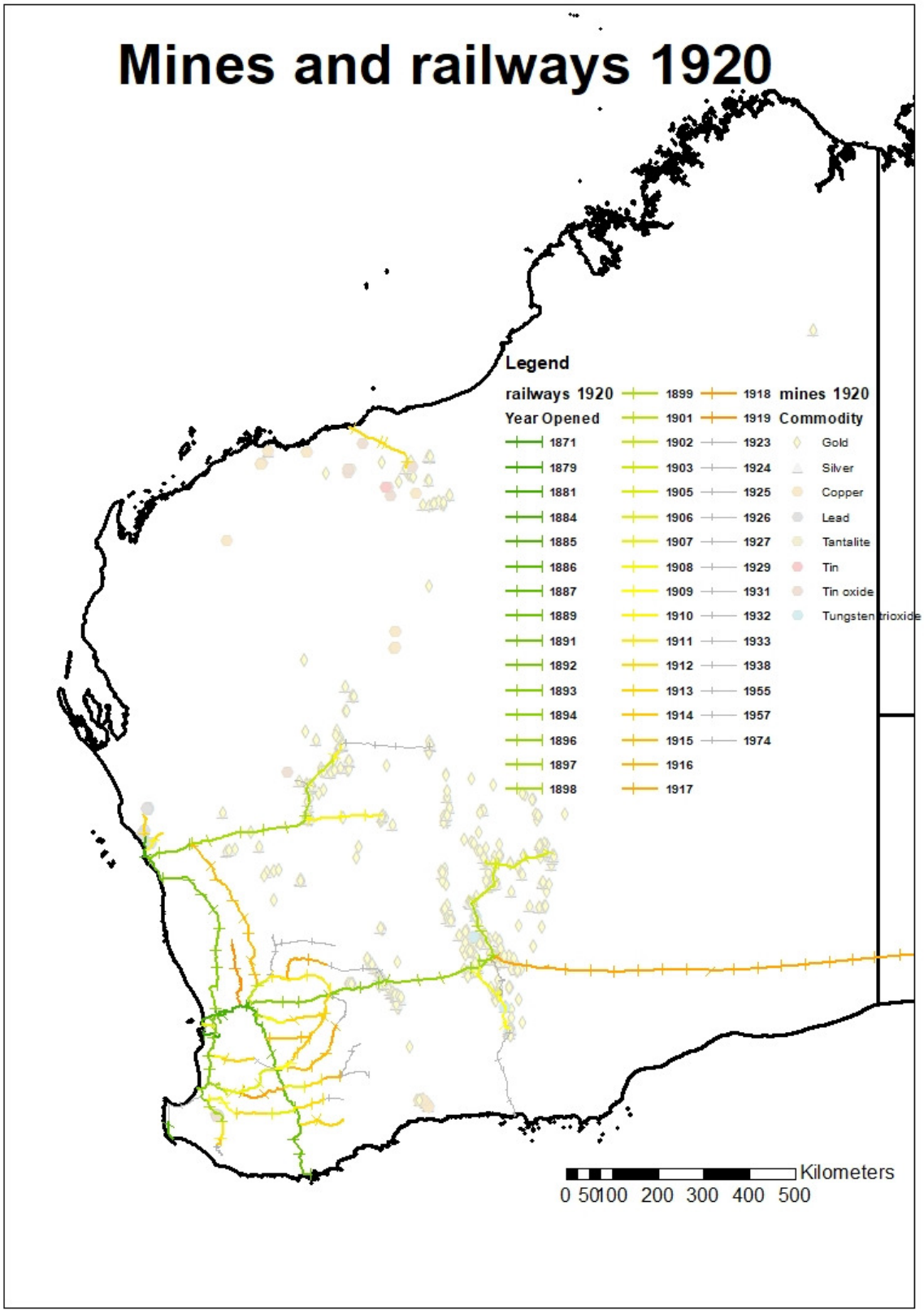

Figure 86: Railway routes in Western Australia, colour coded for the year of construction. Grey denotes railways that were to be built after 1920 (Austin, 2011). Mines, mostly gold, operating in 1920 are also shown to illustrate how the mining industry dominated infrastructure (Geological Survey of Western Australia, 2021).

With the onset of World War 1, the amount of gold mined in Western Australia suffered a precipitate and sustained drop by 90% to 98% from its peak in 1900 (Figure 87). The decline was global, caused by slowing technical advances and changes in gold grades and metallurgy, declining labour supply due to the war, and increasing production costs (Bertola, 2003). There was still high (but falling) production at Fimiston, Mount Charlotte, and Boulder, but these mines had their own spur lines from the major railway station at Kalgoorlie and Boulder and so probably never needed camels for transportation services.

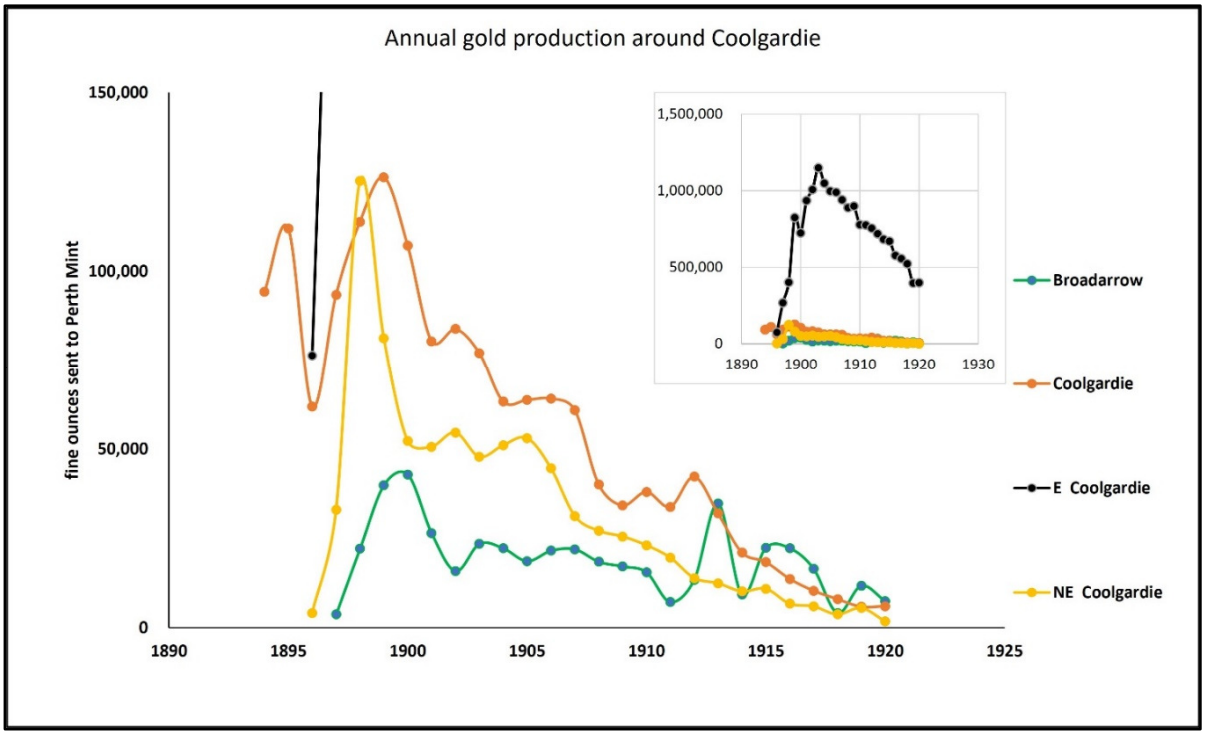

Figure 87: A plot of production figures from 1893 (the beginning of detailed records for the goldfields) to 1920, for mines in four Mineral Fields 200 km around Coolgardie (Geological Survey of Western Australia, 2021). East Coolgardie Mineral Field (in the inset) includes the giant Kalgoorlie mines.

Pastoralism, especially sheep, grew after the 1890s. This had a beneficial effect for cameleers, as it provided the possibility of backloading bales of wool to railheads (Figure 85). The wool industry suffered a calamitous collapse in the 1930s due to drought, further falls in prices and overgrazing, but by this time, cameleering had already largely disappeared. By 1918-1920, cattle grazing suffered from falling prices

and overstocking (Burnside, 1979), but cattle would not have provided cameleers much backloading business.

After transport work in Western Australia declined due to these reasons, draught camel work changed to more sedentary tasks related to pastoralism, digging dams and wells, and pulling ploughs, until the internal combustion engine fully replaced camels in this work too. Some Afghans moved to the eastern states of Australia to work as hawkers after the decline of work in Western Australia (Stevens, 2002). Some European Australians, veterans of the Imperial Camel Corps in Egypt and Palestine in 1916-1918, had acquired camel experience and took up some of the last camel work in the industry (Stevens, 2002). Some Indigenous Australians who had experience working with Afghans also persisted with camels (Khatun, 2018).

Yet not all cameleers left. Around Leonora Sonsa Deen Din Ras had his own mosque at Braemore station near Leonora into the 1930s (Fitzgerald, 2012), and the Leonora campground mosque was in use until its sale in 1947. This may have been a case of people living in remote places migrating to more central sites such as Coolgardie (Figure 69) and Leonora. The mosques were commonly the focus of retired Afghans, such as Hadji Mullah Mehrban who as an old man served as *mullah* in Adelaide before moving to Coolgardie (Jones & Kenny, 2010). Goolam Badoola Rind worked with camels in his earlier days and settled in Mount Magnet, his descendants eventually returning from Afghanistan to live in Western Australia (Day & Morrissey, 1995). Others moved into settled trade or agriculture, their descendants remaining in Australia such as the family of Khawajah Muhammad Bux (Bux, 2016a).

Archaeology has greatly illuminated the decline of the Afghans' transport industry. Afghans are still in Western Australia, with many others throughout Australia with a similar history going back to Afghanistan and British India. Their camels, now abandoned or liberated as feral animals (see frontispiece), are also still in arid and semiarid Australia, as a continuing reminder of the industry.

Distinguishing Afghan and European Australian presence

An outcome of the achievement of the research aims of this study is the definition of criteria distinguishing places of Afghan occupation in Western Australia and those of European Australians. Some of the criteria apply equally well to any transient, itinerant or outcast members of a society (Sunseri, 2015). A distinctive feature of the mobile population of Afghan cameleers was the short period of their presence. The towns of Sir Samuel and Kathleen towns were chosen in this work as examples of settled European Australian life because no evidence of an Afghan presence was found in the archaeological or historical record. The criteria established by Parkes (2009) for distinguishing Afghan residence, listed in Chapter 1, are refined and elaborated here.

When they migrated to Western Australia, Afghans probably brought with them equipment and personal possessions that would be especially important in their new lives such as camel saddles, prayer rugs, specialist food items, and clothing worn on special occasions. With time, these things would wear out, be broken or lost, and be replaced with Australian or British-made substitutes, so the archaeological presence of Afghans would become less apparent with time. Fabric and wood would decay. An import industry existed between Afghanistan and Australia, and goods that were particularly important to the Afghans could be replaced with Asian-made goods.

Islam is the most distinctive facet of the archaeological record. Mosques are characterised by orientation relative to the *qiblah*, a *mihrab* and other structures such as the courtyard. Minarets were not always built. Mosques had multiple detailed functions. This study also identified elements of Islam in the archaeology of landscape. Shrines dedicated to Muslim *pirs* are culturally distinctive and best indicated by associated Islamic cemeteries. Investigation of burials was a focus of this study. Muslim graves were commonly simple and distinctive in style, usually located on the *qiblah* side (western in Australia) of a cemetery, and oriented perpendicular to the *qiblah*. One grave that was very similar to other adjacent Muslim graves included a small cross, therefore not even grave style is an unambiguous, universal criterion.

Anything with Arabic, Urdu or Dari language and script or Islamic ornamentation – gravestones, the Coolgardie salver – are distinctive features. The epitaph of

Mohammad Ally is unique as archaeological evidence of the sentiments of the Afghans themselves in Western Australia.

A principal feature of Afghan presence is the paucity of artefacts related to residence that denote wealth and permanence: there were no floor pads, minimal window glass, few nails. Structures were built of materials such as corrugated iron, whereas the use of stone at Afghan hut is unique. Pressed metal sheeting with geometric patterns may have been a preferred means of decoration in mosques.

The Afghan campgrounds were located on the opposite side of railways relative to European Australian settlements, at the base of hills, and with limited mutual visibility between the campground and the European Australian town. The latter arrangement of visibility may have been desirable to both the Afghans and European Australians (Polk, 2015). The presence of clocks, locks and cool rooms suggest a distinctively regulated and sedentary life in European Australian settlements at Kathleen and Sir Samuel.

Minimal cooking utensils and cutlery were characteristic of Afghan dining habits. In some cases, the abundance of fish cans may indicate Afghan presence, but this is not a clear guide. In contrast with the findings of Parkes (2009), alcohol bottles were present in large numbers at all investigated campgrounds. Campgrounds may have been occupied by a variety of transient or outcast peoples.

According to Parkes (2009), the routes taken by cameleers recorded an extremely light touch on the landscape, and artefacts distinctive of camel transport were sparse. Distinctive artefacts were typically of metal, and may include camel water tanks, bells for ornamenting saddlery, and pack saddle and harness components which were not always recognisable as being from a camel. Buckles and rings may equally be from horse accoutrements, and horseshoes were not distinctive of European Australian settlements as Afghans very likely used horses too. Wooden artefacts decayed rapidly and were rarely found.

CONCLUSIONS

This research enquired into the lifeways of cameleers who worked in Western Australia over the period 1887 to 1920. They were predominantly males, Muslims, and south Asians or 'Afghans'. Research aimed to gather archaeological and historical evidence:

- to understand the circumstances under which they came to Australia;
- associated with the Afghans and their lives in campgrounds;
- associated with the Afghans and their work in the camel transport industry;
- bearing on their religious lives as Muslims;
- to determine the reasons for the demise in this industry.

The work undertaken in this study included a literature review that showed the little work done on this subject in Western Australia and Australia generally. Primary and secondary historical sources were searched for details, in particular newspapers of the time, on cameleer campgrounds, mosques, mining history and railway expansion. A special focus of this study was to examine physical cultural elements that were imported from Asia to Western Australia, with modifications or with none, and viewed as far as the evidence allowed from the Afghans' standpoint. Nine sites were identified for detailed study. In general, artefacts were sparse, but ages could be determined, and the great bulk of artefacts were from the period of Afghan cameleer activity up to circa 1920.

The discovery of major gold deposits in Western Australia in the 1880s prompted the migration of many Asians with skills in handling camels and commercial transport. They arrived in an isolated and semi-arid environment similar to their homelands in Afghanistan, Balochistan and British India. They came from a wide range of tribal groups, principally Pishoris from around Quetta and other Pashtuns. Some migrated

in small family groups of brothers, sons, and fathers. They arrived in Australia having seen a history of struggle between Islam and the British Empire, and conflict amongst the various Afghan tribes. There may have been occasions where former foes encountered each other in Australia, yet there was little evidence of these imported conflicts. Very few Afghan women migrated, and the principle of *purdah* (seclusion) seems to have been as strictly maintained as any Islamic principle, and the census officials counted none. Asian and Muslim culture and customs were imported variously intact or modified, as dictated by circumstances in an essentially Christian and European Western Australia.

On arrival in Western Australian campgrounds, Afghans very frequently encountered fierce antagonisms. Relationships were diverse, with many instances of good and productive relationships, perhaps driven by necessity, but Afghans did live mainly amongst themselves. Campgrounds were allocated to cameleers by town Roads Boards on the outskirts of the more important towns by 1894. Historical accounts focussed on smell and uncleanliness but gave minimal details of their layout or amenity.

The archaeology of the campgrounds comprised remains of commonly great numbers of food cans, yet few were artefacts of unambiguous Afghan or camel affinity. Characteristics of campgrounds parallel those described by Parkes (1997, 2009), but not entirely. There were more alcohol bottles in Western Australia than expected, perhaps indicating a diverse itinerant population. There were few remains of residences (no floor pads, minimal window glass) in the campgrounds, and Afghans may have occupied traditional black goat hair or canvas tents. Cooking and eating were probably communal, using the common enamelled basins, and without utensils (Baxter & Allen, 2015).

Some retail and water condensing work areas in the main campgrounds can be distinguished. Tagh and Faiz Mahomed built water condensers around Coolgardie (Drewery, 2008). The condenser industry ceased abruptly in January 1903, when the Coolgardie pipeline project was opened ("The Nile of Western Australia," 1903, January 24). Some details imply an active import business from Asia in food, clothing, and perhaps other equipment.

Some campgrounds (Leonora, Malcolm, Mount Magnet, Kalgoorlie) were abandoned after 1920, cleared of all remains, and the land allocated to other civic functions, but the Coolgardie Pashtun campground was forgotten until this study. Future research could be directed toward other parts of the northern half of Western Australia, including ports at Geraldton, Port Hedland, Roebourne, Wyndham and inland at Marble Bar, that could yield results about the life of Afghan cameleers.

Details of religious observance are rarely seen distinctly in archaeology (Insoll, 1999), but this study has discovered and recorded two sites associated with religious practices. In one Coolgardie campground there was a stone-marked walkway: a proxy minaret leading to a proxy balcony for the call to prayer that formed a *qiblah* alignment with structural remains that may be of the mosque. Such an Islamic *axis mundi* is also seen in the greatest Islamic monuments, and there are also echoes of sacred locations around Mecca in the layout of the Coolgardie campground. The mosques at Perth, Leonora and Malcolm served the towns regardless of tribal affiliation (a modification from local Afghan mosques), whereas at Bummers Creek the archaeology suggested a wayside, stone-marked mosque that probably served wayfarers in a style imported from Asia. From the historical record, the mosque at Braemore station was a modest private structure (in Islam it is permitted for anyone to build a mosque) to serve a few Muslims isolated within the overwhelmingly Christian Leonora township late in this period.

The stone and adobe structure at Afghan hut interpreted as a mosque may have been built as a shrine (Figure 50) to an unnamed *pir* in a quintessentially Afghan custom. Itinerant *mullahs* were common in both Australia and Afghanistan. Christians – women and men – were welcomed in the mosques and to funerals in Australia, quite different to how it was done in Afghanistan. Most burials were recognisably and conventionally Islamic, but two graves at Afghan hut had a heterodox orientation relative to the *qiblah* that are rare in Australia and the world.

Very few artefacts relating to Afghans were found at waystations such as Bummers Creek, and details of work habits were sparsely recorded in contemporaneous newspapers or reminiscences. Much of the camel equipment was of perishable material and conserved as especially valuable. The result of archaeological surveys found that most accoutrements for horses and camels were not distinctively Afghan,

particularly as hobbles, halters and saddles were replaced by Australian-made equipment. More horseshoes were found in smaller centres than expected, yet Afghans' use of horses is not commonly recognised. The Afghans pursued a variety of trades including merchants, camel importing and breeding, farm work, railways, and moved in and out of cameleering. Business relationships were complex amongst contractors, clients, banks, and suppliers. Even itinerant *mullahs* worked as contractors. Mining Rights were not granted to Asians, including Afghans, but related transport work was available: carrying loads to mines including timber for mine support timbers and fuel, carrying ore to batteries, supplies to pastoral stations and backloading with the wool clip. The archaeology of the campgrounds shows much evidence of packing and of areas used in loading and transport.

The routes travelled by the cameleers were not investigated as they were beyond the scope of this thesis. The archaeology of transient workers such as the Afghans was not well illuminated here because of their light touch on the landscape. Future research could cast new light on the working day of the cameleers by a study of the route taken between Port Hedland and Marble Bar, where it may be possible to trace the precise route. The 32 mile Peterson Government Well east of Port Hedland probably corresponds to the 32 Mile Well ("The camel-owners' strike," 1908, September 11), and this precisely fixes a point on this cameleering route that permits a focussed study.

This industry was not to last forever. Census counts showed a decline of 85% in the number of Afghan-born males in Western Australia from 1901 to 1921. This decline is apparent in the campgrounds' archaeology, as the dateable artefacts show low levels of occupation after 1920. Gold production around Coolgardie and Kalgoorlie showed a parallel decline in the first decades of the twentieth century. This was caused by technical matters of gold grade and metallurgy, costs, and manpower problems due to World War 1. Moreover, the unique service camels provided to mining and pastoralism had been supplanted as railway networks expanded and roads and motor vehicles increased in both number and reliability. Many men returned to Asia as work dried up, but others had families and business success in Australia, or had nothing in Afghanistan, and stayed on. These facts did not mean that cameleers disappeared, as camels today roam the semi-arid regions, and descendants of the men now flourish as Australian citizens.

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APPENDIX 1

Table of artefacts taken from the accession database, simplified by removing columns that are carry fewer data, or less important data.

Site	Artefact ID	Latitude Degree	Longitude Degree	Max Dimension m	Intermed Dimension m	Min Dimension m	Number Artefacts	Date Found	Ware L1	Ware L2	Ware L3	Ware L4	Decoration L1	Decoration L2	Primary Function L1	Primary Function L2	Primary Function L3	Primary Function L4	Secondary Function L1	Secondary Function L2	Secondary Function L3
Afghan Hut	438	-27.56922	120.58652	1.56	0.09	0.09	1	16-Sep-20	Metal/ organic	Ferro/ wood	Post and wire	Not barbed wire			Structure	Architectural/ construction	Fence				
Afghan Hut	439	-27.56922	120.58652	45	0.5	0.15	1	16-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Structure	Architectural/ construction	Fence base				
Afghan Hut	440	-27.56922	120.58652	3	1.5	0.1	1	16-Sep-20	Metal/ organic	Ferro/ wood	Post and wire				Structure	Architectural/ construction	Gate	wire closing loop			
Afghan Hut	441	-27.56955	120.58651	1.6	0.012	0.012	1	16-Sep-20	Metal/ organic	Ferro/ wood	Post and wire				Structure	Architectural/ construction	Fence				
Afghan Hut	442	-27.56958	120.58698	0.1	0.003		3	16-Sep-20	Metal	Ferro	Wire				Structure	Architectural/ construction	Fencing wire				
Afghan Hut	444	-27.56922	120.58697	50	0.5	0.1	0	16-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Structure	Architectural/ construction	Fence base				
Afghan Hut	445	-27.56932	120.58681	18.92	1.17	0.87	1	16-Sep-20	Organic	Wood	bush timber				Structure	Architectural/ construction	Water bore				
Afghan Hut	446	-27.56932	120.58685	0.79	0.23	0.23	1	16-Sep-20	Stone or clay	Excavation	unclear				Structure	Architectural/ construction	unclear				
Afghan Hut	447	-27.56935	120.58672	2	0.3	0.3	1	16-Sep-20	Metal	Ferro	Flue	hand made			Foodways	Preparation	Fuel	Kerosene can	Structure	Architectural/ construction	Air inlet
Afghan Hut	448	-27.56935	120.58672	1	0.4	0.002	1	16-Sep-20	Metal	Ferro/ zinc	galvanised iron	Flat sheet			Structure	Architectural/ construction	Windmill vanes	Support bracket			
Afghan Hut	449	-27.56932	120.58681	2.72	1.98	1.42	1	16-Sep-20	Organic	Wood	bush timber				Structure	Architectural/ construction	Racks	drying			
Afghan Hut	450	-27.56932	120.58681	0.03	0.03	0.003	3	16-Sep-20	Ceramic	Earthenware	Refined earthenware				Foodways	Service	Flatware				
Afghan Hut	451	-27.56933	120.58684	2.2	1	1.5	1	16-Sep-20	Stone or clay	Excavation	Chute				Structure	Architectural/ construction	Entrance				
Afghan Hut	452	-27.56929	120.58682	0.1	0.08	0.02	1	16-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Afghan Hut	453	-27.56929	120.58682	0.1	0.1	0.07	1	16-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Afghan Hut	454	-27.56929	120.58682	0.06	0.025	0.025	1	16-Sep-20	Metal	Ferro	Rod				Profession	Trade	Rock drill bit	hand rock drill			
Afghan Hut	455	-27.56934	120.58683	5.6	4.1	1.4	1	16-Sep-20	Stone or clay	Excavation	Hut				Faith	Building	Mosque		Profession	Trade	Coolroom
Afghan Hut	456	-27.56933	120.58688	0.65	0.46	0.08	1	16-Sep-20	Metal	Ferro	Lid				Personal	Storage	Packing cases	Chest			
Afghan Hut	457	-27.56925	120.58726	0.11	0.11		2	16-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	458	-27.56938	120.58722	0.11	0.11		7	16-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	459	-27.56936	120.58727	0.11			1	16-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	460	-27.56961	120.58724	0.11			2	16-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	461	-27.56966	120.58723	0.43	0.028	0.01	1	16-Sep-20	Metal	Ferro	Bar				Profession	Trade	unclear				
Afghan Hut	462	-27.56963	120.58723	0.11	0.11		2	16-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	463	-27.56940	120.58714	0.1	0.1		20	16-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans	Profession	Trade	Smelting crucible

Afghan Hut	464	-27.56940	120.58714	0.09	0.09		1	16-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans	Profession	Trade	Smelting crucible
Afghan Hut	465	-27.56940	120.58714	0.01			10	16-Sep-20	Glass	Lilac	Bottle	Solarised			Foodways	Service	Storage	Bottle			
Afghan Hut	466	-27.56957	120.58708	0.5	0.003		8	16-Sep-20	Metal	Ferro	Wire				Structure	Architectural/ construction	Fencing wire				
Afghan Hut	468	-27.56946	120.58706	0.055	0.03	0.002	2	16-Sep-20	Metal	Ferro	Small plate				Clothing	Footwear	Boot toe protector				
Afghan Hut	469	-27.56950	120.58699	0.14			1	16-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Afghan Hut	470	-27.56938	120.58703	0.51	0.035	0.002	2	16-Sep-20	Metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Afghan Hut	471	-27.56948	120.58699	0.11			15	16-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	472	-27.56948	120.58699	0.13	0.01	0.006	1	16-Sep-20	Metal	Ferro	Small plate				Clothing	Footwear	Heel plate				
Afghan Hut	473	-27.56963	120.58700	1.2	0.06	0.06	1	16-Sep-20	Metal	Ferro	Pipe				Structure	Architectural/ construction	Water pipe				
Afghan Hut	475	-27.56951	120.58689	0.03	0.03	0.006	5	16-Sep-20	Glass	Lilac	Bottle	Solarised	Moulded	base	Foodways	Service	Storage	Bottle			
Afghan Hut	476	-27.56937	120.58694	1	0.5	0.001	1	16-Sep-20	Metal	Ferro	Corrugated iron				Structure	Architectural/ construction	Structural				
Afghan Hut	477	-27.56929	120.58693	1	0.5	0.001	1	16-Sep-20	Metal	Ferro/ zinc	Corrugated iron	3" corrugations			Structure	Architectural/ construction	Roof or wall				
Afghan Hut	478	-27.56938	120.58692	0.02	0.01	0.005	1	16-Sep-20	Ceramic	Porcelain	Glazed		Decorated	Transfer prints	Foodways	Service	Flatware	Plates			
Afghan Hut	479	-27.56952	120.58688	2	0.07	0.07	1	16-Sep-20	Metal	Ferro/ zinc	galvanised iron	Tube			Structure	Architectural/ construction	Water pipe				
Afghan Hut	480	-27.56962	120.58690	0.2	0.015	0.001	1	16-Sep-20	Metal	Ferro	Strap	flat			Transport	Goods	Packing strap				
Afghan Hut	481	-27.56951	120.58689	0.35	0.35	0.08	1	16-Sep-20	Metal	Ferro/ zinc	Lid				Profession	Trade	container lid				
Afghan Hut	482	-27.56961	120.58685	1.75	0.025	0.008	1	16-Sep-20	Metal	Ferro	Bar				Profession	Trade	unclear				
Afghan Hut	483	-27.56926	120.58666	0.02	0.015	0.005	1	16-Sep-20	Ceramic	Stoneware	Glazed		Decorated	Hotel tableware	Foodways	Service	Flatware	Plates			
Afghan Hut	484	-27.56929	120.58673	0.2	0.015	0.001	3	16-Sep-20	Metal	Ferro	Strap				Transport	Goods	Packing strap				
Afghan Hut	485	-27.56924	120.58671	2.45	1.6	0.1	1	16-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge	outlined with quartz pebbles	Pebble ring	Grave outline	Faith	Burial	Grave	Muslim			
Afghan Hut	486	-27.56924	120.58671	0.05	0.05	0.008	1	16-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring	Unclear			
Afghan Hut	487	-27.56928	120.58666	0.15	0.15		2	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Afghan Hut	488	-27.56928	120.58666	0.16	0.16	0.001	3	17-Sep-20	Metal	Ferro	Strap				Transport	Goods	Packing strap				
Afghan Hut	489	-27.56924	120.58656	0.65	0.05	0.002	3	17-Sep-20	Metal	Ferro	Strap				Transport	Goods	Packing strap				
Afghan Hut	490	-27.56924	120.58656	0.45	0.04	0.003	1	17-Sep-20	Metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Afghan Hut	491	-27.56960	120.58659	0.45	0.04	0.003	1	17-Sep-20	Metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Afghan Hut	492	-27.56962	120.58653	0.11	0.11	0.04	1	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	493	-27.56931	120.58652	1.8	0.08	0.08	5	17-Sep-20	Metal	Ferro/ zinc	galvanised iron	Tube			Structure	Architectural/ construction	Water pipe				
Afghan Hut	494	-27.56931	120.58652	0.45	0.04	0.06	5	17-Sep-20	Metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Afghan Hut	495	-27.56931	120.58652	2.2	0.04	0.003	1	17-Sep-20	Metal	Ferro/ zinc	galvanised iron	Tube			Structure	Architectural/ construction	Water pipe				
Afghan Hut	496	-27.56931	120.58652	1	0.05	0.05	1	17-Sep-20	Metal	Ferro	Pipe				Structure	Architectural/ construction	Water pipe				
Afghan Hut	497	-27.56931	120.58652	0.3			2	17-Sep-20	Metal	Ferro/ zinc	galvanised iron	Flat sheet			Structure	Architectural/ construction	Windmill vanes	Support bracket			
Afghan Hut	498	-27.56931	120.58652	0.2	0.2	0.001	1	17-Sep-20	Metal	Ferro/ zinc	galvanised iron	Flat sheet			Structure	Architectural/ construction	Mounting	Water pipe			
Afghan Hut	499	-27.56931	120.58652	1.85	0.04	0.04	1	17-Sep-20	Metal	Ferro	Angle iron				Personal	Habitation	Bedframe				

Afghan Hut	501	-27.56943	120.58647	0.11	0.11	0.07	2	17-Sep-20	Metal	Ferro/ Plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	502	-27.56935	120.58633	0.11	0.08	0.05	2	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Afghan Hut	503	-27.56935	120.58633	0.11	0.11	0.05	1	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Afghan Hut	504	-27.56931	120.58688	0.11	0.11	0.05	3	17-Sep-20	Metal	Ferro/ Plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	505	-27.56938	120.58695	0.24	0.084	0.065	30	17-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Roof or wall	Bricks			
Afghan Hut	506	-27.56942	120.58683	1	1	0.2	1	17-Sep-20	Stone or clay	Mud	Building residue				Structure	Architectural/ construction	Adobe residue				
Afghan Hut	508	-27.56878	120.58717	2	1		3	17-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Faith	Burial	Grave	doubtful			
Afghan Hut	509	-27.56962	120.58717	0.11	0.02	0.003	1	17-Sep-20	Metal	Ferro	Plate				Clothing	Footwear	Heel plate				
Afghan Hut	510	-27.56962	120.58755	0.1	0.08	0.08	100	17-Sep-20	Metal	Ferro	Can				Foodways	Residue	Can scatter				
Afghan Hut	511	-27.56962	120.58755	0.02	0.02	0.005	1	17-Sep-20	Ceramic	Earthenware	Refined earthenware		Decorated	Hotel tableware	Foodways	Service	Flatware	Plates			
Afghan Hut	512	-27.56962	120.58755	0.2	0.02	0.02	1	17-Sep-20	Metal	Ferro	Spike	Complete			Profession	Trade	Trademen's tools				
Afghan Hut	513	-27.56952	120.58830	4	4		1	17-Sep-20	Stone or clay	Excavation	Rabbit warren				Personal	Habitation					
Afghan Hut	514	-27.56824	120.58830	0.43	0.29	0.28	1	17-Sep-20	Metal	Ferro	Bucket				Profession	Trade	Ore bucket		Profession	Trade	Filter container
Afghan Hut	515	-27.56814	120.58723	2.3	0.4	0.08	1	17-Sep-20	Metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Roof or wall				
Afghan Hut	516	-27.56885	120.58565	0.11	0.11	0.08	15	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	517	-27.56885	120.58565	0.11	0.11	0.08	15	17-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	518	-27.56885	120.58565	0.11	0.11		2	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Afghan Hut	519	-27.56894	120.58559	2	1		1	17-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Faith	Burial	Grave	Muslim			
Afghan Hut	520	-27.56936	120.58736	0.11			1	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	521	-27.56941	120.58739	0.11			1	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	522	-27.56949	120.58731	0.11			1	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	524	-27.56913	120.58660	0.08	0.06	0.005	1	18-Sep-20	Metal	Cupro/ Zinc	Brass				Transport	Animal	Embossed metal				
Afghan Hut	525	-27.56913	120.58660	0.1	0.06	0.06	2	18-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	526	-27.56939	120.58687	0.15	0.08	0.01	2	18-Sep-20	Metal	Ferro	Mechanism				Personal	Storage	Latch				
Afghan Hut	527	-27.56922	120.58652	1.5	0.15	0.15	1	18-Sep-20	Metal/ organic	Ferro/ wood	Post and wire				Structure	Architectural/ construction	Fence				
Afghan Hut	723	-27.56924	120.58671	2	1		1	17-Sep-20	Stone or clay	Mud	Rabbit warren				Personal	Habitation					
Afghan Hut	724	-27.56952	120.58704	2	1		1	17-Sep-20	Stone or clay	Mud	Building residue				Structure	Architectural/ construction	Excavation rubble				
Afghan Hut	736	-27.56934	120.58683	3	2	0.5	1	16-Sep-20	Stone or clay	Soil rock	Mound				Faith	Building	Wall	Gabled end wall			
Afghan Hut	737	-27.56934	120.58683	5.6	4.1	1.5	1	16-Sep-20	Mud/ wood	Adobe/ beam	Tile/ rafters				Structure	Architectural/ construction	Roof				
Afghan Hut	738	-27.56934	120.58683	1.2	1.2	0.65	1	16-Sep-20	Stone or clay	Excavation	Alcove				Faith	Building	Mihrab		Structure	Architectural/ construction	Air inlet
Afghan Hut	739	-27.56935	120.58672	0.44	0.3	0.3	1	16-Sep-20	Metal	Ferro	Bucket	Perforated			Profession	Trade	Container	heavy duty	Structure	Architectural/ construction	Air inlet
Afghan Hut	741	-27.56933	120.58684	5.3	4.3	1.5	1	16-Sep-20	Stone or clay	Excavation	Pit				Structure	Architectural/ construction	Courtyard	Meeting			

Afghan Hut	746	-27.56934	120.58683	5.6	4.1	1.4	1	16-Sep-20	Stone or clay	Mud	Packed smoothed clay				Faith	Building	Floor	smooth for kneeling on			
Afghan Hut	751	-27.56962	120.58755	2	2	0.2	1	17-Sep-20	Metal/ Glass	Ferro/ Glass	Mixed can bottle				Foodways	Service	Hollowware	Can dump			
Afghan Hut	752	-27.56962	120.58755	10	10	0.2	1	17-Sep-20	Stone or clay	Excavation	Pit				Personal	Habitation	Rabbit warren		Foodways	Service	Hollowware
Afghan Hut	753	-27.56962	120.58755	0.1	0.08	0.02	1	17-Sep-20	Glass	Clear	Alcohol				Foodways	Service	Hollowware	Bottle			
Afghan Hut	754	-27.56962	120.58755	0.075	0.055	0.02	1	17-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	756	-27.56962	120.58755	0.05	0.05	0.003	5	17-Sep-20	Glass	Brown	Alcohol				Foodways	Service	Hollowware	Bottle			
Afghan Hut	760	-27.56885	120.58565	0.13	0.07	0.07	2	17-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	768	-27.56934	120.58687	0.121	0.121	0.058	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	769	-27.56908	120.58695	0.105	0.105	0.04	2	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	770	-27.56895	120.58742	0.15	0.01	0.1	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	771	-27.56924	120.58671	2.45	1.6	0.1	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	772	-27.56936	120.58654	0.105	0.105	0.065	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	773	-27.56937	120.58653	0.105	0.105	0.065	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	774	-27.56921	120.58659	0.105	0.105	0.065	2	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	775	-27.56936	120.58655	0.105	0.105	0.065	1	25-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	776	-27.56898	120.58736	1.115	0.21	0.065	1	25-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Windmill vanes				
Afghan Hut	777	-27.56968	120.58744	0.12	0.12	0.01	1	26-Mar-21	metal	Ferro/ Plumbo	Lid				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	778	-27.56994	120.59091	1.15	0.35	0.002	1	26-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Windmill vanes				
Afghan Hut	779	-27.56894	120.58776	0.11	0.11	0.04	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	780	-27.56896	120.58767	0.11	0.11	0.04	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	781	-27.56896	120.58753	0.11	0.11	0.04	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	782	-27.56898	120.58719	1.6	0.021	0.001	1	26-Mar-21	metal	Ferro	Strap				Transport	Goods	Packing strap				
Afghan Hut	783	-27.56903	120.58712	0.11	0.11	0.005	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	784	-27.56992	120.58747	0.068	0.068	0.01	1	26-Mar-21	metal	Ferro	Lid		WD & HO WILLS		personal	Recreational	Tobacco smoking				
Afghan Hut	785	-27.56999	120.58755	0.11	0.11	0.048	2	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	786	-27.57018	120.58761	0.08	0.075	0.075	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	787	-27.57063	120.58789	0.108	0.108	0.014	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	788	-27.57158	120.58852	0.148	0.148	0.02	1	26-Mar-21	metal	Ferro	Lid				Profession	Trade	container lid				
Afghan Hut	789	-27.57180	120.58876	0.7	0.23	0.001	1	26-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Building				
Afghan Hut	790	-27.57201	120.58880	0.322	0.235	0.001	1	26-Mar-21	metal	Ferro	Can				foodways	Preparation	Fuel	Kerosene can			
Afghan Hut	791	-27.57081	120.58663	0.7	0.336	0.001	1	26-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Building				
Afghan Hut	792	-27.57027	120.58588	1.17	0.08	0.09	1	26-Mar-21	metal/ organic	Ferro/ wood	Post and wire				structure	Architectural/ construction	Fence				
Afghan Hut	793	-27.56974	120.58622	0.11	0.11	0.045	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	794	-27.56985	120.58613	0.11	0.09	0.01	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	795	-27.56954	120.58605	0.11	0.11	0.045	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Square can			
Afghan Hut	796	-27.56966	120.58627	0.208	0.02	0.02	1	26-Mar-21	metal	Ferro	Bar				Profession	Trade	Excavation	Hand pick moil			
Afghan Hut	797	-27.56906	120.58667	0.106	0.106	0.015	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	798	-27.56899	120.58670	0.11	0.11	0.001	1	26-Mar-21	metal	Ferro	Lid				foodways	Service	Hollowware	Cans			

Afghan Hut	799	-27.56868	120.58671	0.11	0.11	0.063	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	800	-27.56837	120.58668	0.105	0.105	0.002	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	801	-27.56522	120.58663	1.12	0.07	0.07	1	26-Mar-21	metal/ organic	Ferro/ wood	Post and wire				structure	Architectural/ construction	Fence				
Afghan Hut	802	-27.56576	120.58480	1.5	1.5	0.65	1	26-Mar-21	metal	Ferro/ zinc	galvanised iron	3" corrugations			structure	Architectural/ construction	Water tank				
Afghan Hut	803	-27.56841	120.58477	0.11	0.11	0.05	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	804	-27.56873	120.58526	0.11	0.11	0.05	7	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	805	-27.56879	120.58542	0.111	0.078	0.04	2	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	806	-27.56892	120.58597	0.08	0.06	0.6	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	807	-27.56899	120.58647	0.11	0.11	0.04	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	808	-27.56905	120.58682	0.37	0.09	0.001	1	26-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Windmill vanes	Support bracket			
Afghan Hut	809	-27.56920	120.58608	0.11	0.11		2	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	810	-27.56920	120.58573	0.11			1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	811	-27.56903	120.58555	0.11			1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	812	-27.56895	120.58526	0.11	0.11	0.06	10	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	813	-27.56883	120.58504	0.11	0.11	0.06	100	26-Mar-21	metal	Ferro	Can				Foodways	Residue	Can scatter				
Afghan Hut	814	-27.56883	120.58504	0.09	0.075	0.075	25	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	815	-27.56883	120.58504	0.11	0.08	0.03	2	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	816	-27.56883	120.58504	0.08	0.07	0.055	2	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Square can			
Afghan Hut	817	-27.56883	120.58504	0.03			5	26-Mar-21	glass	Light green	Non-alcohol				foodways	Service	Hollowware	Bottle			
Afghan Hut	818	-27.56883	120.58504	0.065	0.065	0.01	1	26-Mar-21	metal	Ferro	Can		WD & HO WILLS BRISTOL & LONDON		personal	Recreational	Tobacco smoking				
Afghan Hut	819	-27.56853	120.58472	0.11	0.11	0.04	1	26-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	820	-27.56665	120.58186	0.021	0.055	0.055	1	27-Mar-21	glass	Dark green	Non-alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Afghan Hut	821	-27.56933	120.58393	0.38	0.38	0.1	1	27-Mar-21	metal/ enamel	Ferro/ enamel	bowl				personal	Cosmetic	Wash bowl				
Afghan Hut	822	-27.56961	120.58587	0.082	0.074	0.074	1	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	823	-27.56964	120.58598	0.105	0.072	0.022	1	27-Mar-21	metal	Ferro	Can				personal	Recreational	Tobacco smoking				
Afghan Hut	824	-27.56960	120.58614	0.141	0.36	0.36	1	27-Mar-21	metal	Ferro	Can				foodways	Preparation	Billy can				
Afghan Hut	825	-27.56995	120.58493	0.081	0.075	0.075	1	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	826	-27.57224	120.58550	0.125			1	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	827	-27.57002	120.58708	10	10		60	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Afghan Hut	828	-27.57002	120.58708	0.11	0.11	0.06	10	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	829	-27.57002	120.58708	0.082	0.073	0.073	30	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	830	-27.57002	120.58708	0.11	0.085	0.085	10	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans	Profession	Trade	Smelting crucible
Afghan Hut	831	-27.57002	120.58708	0.125	0.1	0.1	5	27-Mar-21	metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Afghan Hut	832	-27.57002	120.58708	0.125	0.1	0.1	2	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Afghan Hut	833	-27.57002	120.58708	0.065	0.04		1	27-Mar-21	glass	Lilac	Bottle	Solarised			Foodways	Service	Storage	Bottle			
Afghan Hut	834	-27.57002	120.58708	0.08	0.01	0.005	1	27-Mar-21	glass	Clear	Alcohol	Bottle	STRONVAAR		foodways	Service	Hollowware	Bottle			

Afghan Hut	835	-27.56993	120.58577	0.12	0.12	0.058	1	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	836	-27.57051	120.58461	0.15	0.14		1	27-Mar-21	metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Afghan Hut	837	-27.57078	120.58408	0.105	0.105	0.005	1	27-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Afghan Hut	838	-27.57106	120.58326	0.11	0.11	0.05	1	27-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Afghan Hut	839	-27.57166	120.58225	0.29	0.088	0.088	1	27-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Afghan Hut	840	-27.57166	120.58225	0.37	0.07	0.07	1	27-Mar-21	glass	Light green	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Afghan Hut	841	-27.57059	120.58276	0.27	0.11	0.11	1	27-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Afghan Hut	842	-27.56927	120.58689	1.52	0.028	0.002	2	27-Mar-21	metal	Ferro	Strap				Profession	Trade	Barrel hoops				
Afghan Hut	843	-27.56935	120.58679	1.11	0.3	0.002	1	27-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Windmill vanes				
Afghan Hut	844	-27.56888	120.58687	0.23	0.23	0.001	1	27-Mar-21	metal	Ferro	Lid		SHELL BRAND KEROSENE MADE IN U.S.A.		foodways	Preparation	Fuel				
Afghan Hut	845	-27.56893	120.58738	0.057	0.052	0.007	1	27-Mar-21	metal	Ferro	Rings				Profession	Trade	Ring				
Afghan Hut	846	-27.56893	120.58562	0.112	0.035	0.035	1	27-Mar-21	metal	Ferro	Tube				Structure	Architectural/ construction	Water pipe				
Afghan Hut	847	-27.56930	120.58683	0.49	0.06	0.025	1	27-Mar-21	metal	Ferro/ zinc	galvanised iron	Tube			structure	Architectural/ construction	Water pipe				
Afghan Hut	848	-27.56921	120.58705	0.134	0.02	0.005	1	27-Mar-21	metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Afghan Hut	849	-27.56941	120.58705	1.11	0.08	0.055	1	27-Mar-21	metal	Ferro/ zinc	galvanised iron	Tube			Structure	Architectural/ construction	Water pipe				
Afghan Hut	1245	-27.56935	120.58683	0.05	0.05	0.05	1	27-Mar-21	Stone or clay	Soil rock	Surface soil around work area				Profession	Trade	Solder scavenging residue	Testwork geochemistry			
Afghan Hut	1246	-27.56934	120.58690	0.05	0.05	0.05	1	27-Mar-21	Stone or clay	Soil rock	Surface soil around work area				Profession	Trade	Solder scavenging residue	Testwork geochemistry			
Boxers Well	855	-28.63972	121.02219	10	2	0.7	1	28-Mar-21	stone or clay	Excavation	Pit				structure	Architectural/ construction	Water bore				
Braemore	299	-28.86886	121.33753	0.3	0.3	0.008	500	13-Sep-20	Glass	Lilac	Bottle	Solarised			Foodways	Service	Hollowware				
Braemore	300	-28.86886	121.33753	0.3	0.3	0.008	500	13-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle midden			
Braemore	301	-28.86893	121.33745	0.18	0.12	0.08	3	13-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick				
Bummers Creek	116	-28.87602	121.68587	50	50		0	11-Sep-20	Stone or clay	Excavation	Mineral drilling				Profession	Business	Modern mineral exploration				
Bummers Creek	117	-28.87627	121.67581	50	50		0	11-Sep-20	Stone or clay	Natural surface											
Bummers Creek	118	-28.87732	121.67531	50	50		0	11-Sep-20	Stone or clay	Natural surface											
Bummers Creek	119	-28.87687	121.68231	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										
Bummers Creek	120	-28.87317	121.67809	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										
Bummers Creek	121	-28.87273	121.67774	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										
Bummers Creek	122	-28.87356	121.67576	20	20		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										
Bummers Creek	123	-28.87557	121.68308	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										
Bummers Creek	124	-28.87550	121.68277	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren										

Bummers Creek	125	-28.87467	121.68377	50	50		0	11-Sep-20	Stone or clay	Natural surface										
Bummers Creek	126	-28.87425	121.68571	10	10		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren									
Bummers Creek	127	-28.87230	121.68497	50	50		0	11-Sep-20	Stone or clay	Natural surface										
Bummers Creek	128	-28.86982	121.68405	50	50		0	11-Sep-20	Stone or clay	Natural surface										
Bummers Creek	129	-28.86966	121.68504	20	20		0	11-Sep-20	Stone or clay	Excavation	Rabbit warren									
Bummers Creek	130	-28.87155	121.68880	50	50		0	11-Sep-20	Stone or clay	Natural surface										
Bummers Creek	131	-28.87970	121.68662	4	4	3	1	11-Sep-20	Metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Water tank	Water storage			
Bummers Creek	133	-28.87970	121.68662	2	0.5	0.002	1	11-Sep-20	Metal	Ferro	Corrugated iron				Structure	Architectural/ construction	Water trough	water for animals			
Bummers Creek	135	-28.87961	121.68691	0.23	0.11	0.065	4	11-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick	Handmade			
Bummers Creek	136	-28.87961	121.68691	0.15	0.078	0.006	1	11-Sep-20	Metal	Ferro	Plate				Profession	Trade	unclear				
Bummers Creek	137	-28.87744	121.68153	0.11	0.11	0.062	1	11-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Bummers Creek	138	-28.87344	121.67707	0.11	0.78	0.78	1	11-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Bummers Creek	139	-28.87671	121.68098	0.3	0.25	0.1	7	11-Sep-20	Stone or clay	Metamorphic rock	Vein quartz	Boulders			Faith	Rock arrangement	wayside prayer site				
Bummers Creek	140	-28.87536	121.68309	15	9	0.3	1	11-Sep-20	Stone or clay	Excavation	Levelled ground				Structure	Architectural/ construction	Building foundation				
Bummers Creek	141	-28.87397	121.68298	200	1.2	0.05	1	11-Sep-20	Metal/ organic	Ferro/ wood	Post and wire	Barbed wire			Structure	Architectural/ construction	Fence				
Bummers Creek	142	-28.87610	121.68298	200	1.2	0.05	1	11-Sep-20	Metal/ organic	Ferro/ wood	Post and wire	Barbed wire			Structure	Architectural/ construction	Fence				
Bummers Creek	143	-28.86679	121.68303	20	1.2	0.003	1	11-Sep-20	Metal/ organic	Ferro/ wood	Post and wire	Barbed wire			Structure	Architectural/ construction	Fence				
Bummers Creek	144	-28.86665	121.68338	200	200		0	11-Sep-20	Stone or clay	Natural surface										
Bummers Creek	145	-28.87693	121.67640	0.36	0.36	0.1	1	11-Sep-20	Metal/ enamel	Ferro/ enamel	bowl				Personal	Cosmetic	Wash bowl				
Bummers Creek	146	-28.88033	121.67789	6	4	2	1	11-Sep-20	Stone or clay	Excavation	Pit				Profession	Trade	Rubbish dump				
Bummers Creek	761	-28.87833	121.67081	1.1	0.08	0.02	1	24-Mar-21	metal/ organic	Ferro/ wood	Post and wire				structure	Architectural/ construction	Fence				
Bummers Creek	762	-28.87835	121.66571	1.1	0.08	0.02	1	24-Mar-21	metal/ organic	Ferro/ wood	Post and wire				structure	Architectural/ construction	Fence				
Bummers Creek	763	-28.87841	121.67669	0.1	0.1	0.067	1	24-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Bummers Creek	764	-28.87630	121.68093	0.28	0.23	0.005	1	24-Mar-21	metal	Ferro	Tool				Profession	Trade	Shovel				
Coolgardie campground	6	-30.95252	121.18868	0.16	0.12	0.4	1	08-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	7	-30.95224	121.18920	8	8	0.1	2000	08-Sep-20	Metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	8	-30.95224	121.18920	8	8	0.1	1	08-Sep-20	Glass	Clear	Unsure				Foodways	Service	Hollowware	Bottle			
Coolgardie campground	9	-30.95224	121.18920	0.08	0.08	0.1	5	08-Sep-20	Glass	Lilac	Bottle	Solarised			Personal	Cosmetic	Jars				

Coolgardie campground	10	-30.95224	121.18920	8	8	0.1	5	08-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	11	-30.95249	121.18914	0.1	0.08	0.02	6	08-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	12	-30.95225	121.18932	4.5	4.5	0.05	200	09-Sep-20	Metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Hole & cap cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	13	-30.95136	121.19197	0.022	0.017	0.001	1	09-Sep-20	Metal	Ferro	Plate				Profession	Trade	Container		Profession	Trade	Filter plate
Coolgardie campground	14	-30.95123	121.19231	0.025	0.02	0.003	4	09-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	15	-30.95092	121.19273	0.06	0.04	0.008	3	09-Sep-20	Glass	Clear	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	16	-30.95107	121.19333	0.022	0.01	0.001	5	09-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	17	-30.95174	121.19150	0.32	0.0125	0.001	6	09-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	18	-30.95174	121.19150	0.32	0.0125	0.001	1	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	19	-30.95175	121.19093	0.3	0.125	0.001	6	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	20	-30.95175	121.19093	0.1	0.125	0.008	1	09-Sep-20	Metal	Ferro	Lid	Resealable			Foodways	Service	Hollowware	Cans			
Coolgardie campground	21	-30.95201	121.18992	0.01	0.01	0.001	11	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	22	-30.95210	121.18948	0.3	0.125	0.001	100	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	23	-30.95364	121.18829	0.1	0.1	0.08	200	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	24	-30.95364	121.18829	0.6	0.5	0.001	1	09-Sep-20	Metal	Ferro/ zinc	galvanised iron	1" ripple			Structure	Architectural/ construction	Roof or wall				
Coolgardie campground	25	-30.95364	121.18829	0.25			1	09-Sep-20	Metal/ enamel	Ferro/ enamel	Plate				Profession	Trade	Nameplate				
Coolgardie campground	27	-30.95364	121.18829	0.11	1	0.8	11	09-Sep-20	Glass	Brown	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	28	-30.95364	121.18829	1	1	0.8	1	09-Sep-20	Metal	Ferro	Corrugated iron	3" corrugations			Structure	Architectural/ construction	Water tank				
Coolgardie campground	29	-30.95364	121.18829	0.16	0.1	0.007	1	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	30	-30.95364	121.18829	0.35	0.3	0.22	1	09-Sep-20	Metal	Ferro	Frame				Personal	Recreational	Radio	Valve			
Coolgardie campground	31	-30.95349	121.18843	0.12	0.09	0.09	100	09-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Hollowware	Cup			
Coolgardie campground	32	-30.95349	121.18843	0.12	0.09	0.09	100	09-Sep-20	Metal	Ferro	Can	Resealable			Profession	Trade	Container				
Coolgardie campground	33	-30.95349	121.18843	0.12	0.09	0.09	100	09-Sep-20	Ceramic	Earthenware	Refined earthenware				Foodways	Service	Teaware	Cups			
Coolgardie campground	34	-30.95349	121.18843	0.12	0.09	0.09	100	09-Sep-20	Glass	Clear	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle dump			
Coolgardie campground	35	-30.95299	121.18928	0.11	0.11	0.08	200	09-Sep-20	Metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	36	-30.95308	121.18986	0.02	0.02	0.008	1	09-Sep-20	Metal	Ferro	Buckle				Personal	Storage	Satchel buckle				
Coolgardie campground	37	-30.95308	121.18986	0.08	0.005	0.005	500	09-Sep-20	Metal	Ferro	Can	Can dump			Profession	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	38	-30.95308	121.18986	0.08	0.005	0.005	500	09-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Coolgardie campground	39	-30.95308	121.18986	0.08	0.005	0.005	1	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			

Coolgardie campground	40	-30.95308	121.18986	0.08	0.005	0.005	500	09-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	41	-30.95308	121.18986	0.08	0.005	0.005	500	09-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Flatware	Platters			
Coolgardie campground	42	-30.95313	121.19045	0.075	0.075	0.005	1	09-Sep-20	Metal	Ferro	Buckle				Transport	Animal	Trappings buckle				
Coolgardie campground	43	-30.95308	121.18986	0.075	0.05	0.005	1	09-Sep-20	Metal	Ferro	Tool				Personal	Other	Pocket knives				
Coolgardie campground	44	-30.95313	121.19045	0.075	0.05	0.005	1	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	45	-30.95284	121.19093	0.08	0.06	0.006	3	09-Sep-20	Glass	Clear	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	46	-30.95284	121.19093	0.08	0.06	0.006	15	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	47	-30.95268	121.19186	0.015	0.01	0.001	10	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	48	-30.95186	121.19255	0.14	0.055	0.006	9	09-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Coolgardie campground	49	-30.95186	121.19255	0.14	0.055	0.006	9	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	50	-30.95152	121.19274	0.07	0.065	0.007	1	09-Sep-20	Metal	Ferro	Plate				Clothing	Footwear	Boot toe protector				
Coolgardie campground	51	-30.95152	121.19274	0.07	0.065	0.007	1	09-Sep-20	Metal	Ferro	Small plate				Clothing	Footwear	Heel plate				
Coolgardie campground	52	-30.95194	121.19381	0.04			10	09-Sep-20	Ceramic	Earthenware	Refined earthenware	Creamware			Foodways	Service	Flatware	Plates			
Coolgardie campground	53	-30.95194	121.19381	0.02			28	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	54	-30.95280	121.19189	0.1	0.095	0.001	3	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	55	-30.95304	121.19105	0.023	0.01	0.01	10	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	56	-30.95304	121.19105	0.09	0.09		10	09-Sep-20	Metal/ enamel	Ferro/ enamel	pot				Foodways	Service	Teaware	Cups			
Coolgardie campground	57	-30.95297	121.19030	0.1	0.04	0.04	10	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Fish can			
Coolgardie campground	58	-30.95297	121.19030	0.1	0.04	0.04	70	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	59	-30.95297	121.19030	0.11	0.08	0.025	5	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	60	-30.95333	121.18991	1.5	1.4	1.4	1	09-Sep-20	Metal	Ferro/ zinc	galvanised iron				Structure	Architectural/ construction	Water tank				
Coolgardie campground	61	-30.95332	121.18976	0.08	0.03	0.008	3	09-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Flatware				
Coolgardie campground	62	-30.95332	121.18976	0.08	0.03	0.008	4	09-Sep-20	Glass	Lilac	Stemware	Solarised			Foodways	Service	Drinking	Goblet			
Coolgardie campground	63	-30.95332	121.18976	0.08	0.03	0.008	6	09-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	64	-30.95332	121.18976	0.08	0.03	0.008	40	09-Sep-20	Glass	Dark green	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle dump			
Coolgardie campground	65	-30.95366	121.18946	0.05	0.05	0.04	100	09-Sep-20	Ceramic	Porcelain	Hard-paste	European			Foodways	Service	Teaware	Cups			
Coolgardie campground	66	-30.95366	121.18946	0.1	0.09	0.09	100	09-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	67	-30.95366	121.18946	0.2	0.15	0.005	15	09-Sep-20	Ceramic	Earthenware	Refined earthenware	Whiteware	T.F. & S. LTD A		Foodways	Service	Flatware	Plates			
Coolgardie campground	68	-30.95366	121.18946	0.5	0.3	0.3	3	09-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	69	-30.95366	121.18946	0.44	0.2	0.001	2	09-Sep-20	Metal	Ferro	Plate				Profession	Trade	container lid		Profession	Trade	Filter plate
Coolgardie campground	70	-30.95398	121.18918	0.09	0.04	0.004	1	09-Sep-20	Ceramic	Stoneware	Brown salt-glazed				Foodways	Service	Hollowware	Jug			

Coolgardie campground	71	-30.95398	121.18918	1.3	0.8	0.001	3	09-Sep-20	Metal	Ferro	Pressed metal		Embossed	Wunderlich	Faith	Building	Cladding			
Coolgardie campground	72	-30.95398	121.18918	1.3	0.8	0.001	10	09-Sep-20	Metal	Ferro/ zinc	galvanised iron				Faith	Building	Mosque			
Coolgardie campground	73	-30.95398	121.18918	1.3	0.001	0.001	10	09-Sep-20	Metal	Ferro	Wire				Structure	Architectural/ construction	Fencing wire		Structure	Architectural/ construction	Stitching wire in wall cladding
Coolgardie campground	74	-30.95398	121.18918	1.3	0.8	0.001	10	09-Sep-20	Metal	Ferro/ zinc	galvanised iron	1" ripple			Structure	Architectural/ construction	Roof or wall				
Coolgardie campground	75	-30.95398	121.18918	0.2	0.15	0.001	1	09-Sep-20	Metal	Ferro/ zinc	galvanised iron				Profession	Trade	cone or funnel				
Coolgardie campground	76	-30.95398	121.18918	1.3	0.8	0.001	10	09-Sep-20	Metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Roof or wall				
Coolgardie campground	78	-30.95366	121.18882	0.56	0.38	0.001	1	09-Sep-20	Metal	Ferro	Pressed metal				Faith	Building	Cladding				
Coolgardie campground	79	-30.95382	121.18835	40	1	0.1	1	09-Sep-20	Stone or clay	Soil rock	Wall				Structure	Architectural/ construction	Walkway				
Coolgardie campground	79	-30.95384	121.18871	40	1	0.1	1	09-Sep-20	Stone or clay	Soil rock	Wall				Structure	Architectural/ construction	Walkway				
Coolgardie campground	79	-30.95384	121.18858	40	1	0.1	1	09-Sep-20	Stone or clay	Soil rock	Wall				Structure	Architectural/ construction	Walkway				
Coolgardie campground	80	-30.95387	121.18858	0.41	0.1	0.001	1	09-Sep-20	Metal	Ferro/ zinc	galvanised iron				Structure	Architectural/ construction	Window decoration				
Coolgardie campground	81	-30.95387	121.18858	0.125	0.08	0.08	20	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	82	-30.95387	121.18858	0.125	0.08	0.08	100	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Fish can			
Coolgardie campground	83	-30.95387	121.18858	0.125	0.08	0.08	100	09-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Fish can			
Coolgardie campground	84	-30.95387	121.18858	0.25	0.23	0.003	1	09-Sep-20	Metal	Ferro	Tool				Profession	Trade	Shovel				
Coolgardie campground	85	-30.95394	121.18919	0.06	0.03	0.003	6	10-Sep-20	Metal	Ferro	Rings				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	86	-30.95394	121.18919	0.017	0.017	0.012	1	10-Sep-20	Metal/ Glass	Plumbo/ Glass	stopper				Foodways	Service	Storage	Bottle stoppers			
Coolgardie campground	87	-30.95394	121.18919	0.03	0.02	0.001	100	10-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Fish can			
Coolgardie campground	88	-30.95394	121.18919	0.03	0.02	0.001	100	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	89	-30.95394	121.18919	0.03	0.02	0.001	5	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	90	-30.95394	121.18919	0.02	0.015	0.001	100	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	91	-30.95446	121.18976	0.01			1000	10-Sep-20	Glass	Brown	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle dump			
Coolgardie campground	92	-30.95388	121.19041	0.095	0.095	0.04	8	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	93	-30.95388	121.19041	0.095	0.095	0.04	8	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	94	-30.95377	121.19069	0.18	0.012	0.001	20	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	95	-30.95377	121.19069	0.18	0.012	0.001	20	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Coolgardie campground	96	-30.95377	121.19069	0.34	0.012	0.001	1	10-Sep-20	Metal	Ferro	sheet metal				Profession	Trade	cone or funnel				
Coolgardie campground	97	-30.95377	121.19069	0.08		0.003	1	10-Sep-20	Metal	Ferro	Buckle				Transport	Animal	Trappings buckle				
Coolgardie campground	98	-30.95238	121.19379	0.9	0.01	0.01	7	10-Sep-20	Metal	Ferro	Wire				Structure	Architectural/ construction	Fencing wire	Cans			
Coolgardie campground	99	-30.95238	121.19379	0.11	0.11	0.001	1	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			

Coolgardie campground	100	-30.95238	121.19379	0.25	0.25	0.001	1	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	101	-30.95232	121.19419	0.03	0.02	0.02	15	10-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Coolgardie campground	102	-30.95232	121.19419	0.03	0.02	0.02	15	10-Sep-20	Metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Cans			
Coolgardie campground	103	-30.95232	121.19419	0.03	0.02	0.02	15	10-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking				
Coolgardie campground	104	-30.95327	121.19332	0.4	0.35	0.001	6	10-Sep-20	Metal	Ferro	Container				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	105	-30.95327	121.19332	0.48	0.4	0.001	6	10-Sep-20	Metal	Ferro	Drum				Profession	Trade	Container				
Coolgardie campground	106	-30.95394	121.19121	0.15	0.15		1	10-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	107	-30.95394	121.19121	0.4	0.4		1	10-Sep-20	Metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Roof or wall				
Coolgardie campground	108	-30.95394	121.19121	0.08	0.8		1	10-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans	Profession	Trade	Smelting crucible
Coolgardie campground	109	-30.95412	121.19074	0.06	0.06	0.005	9	10-Sep-20	Ceramic	Stoneware	Glazed		Decorated	Transfer prints	Foodways	Service	Flatware	Plates			
Coolgardie campground	110	-30.95412	121.19074	0.05	0.04	0.035	1	10-Sep-20	Glass	Dark green	Vials	Bottle			Profession	Business	Inkwells				
Coolgardie campground	111	-30.95474	121.19090	0.015	0.015	0.001	1	10-Sep-20	Metal	Ferro	Plate				Profession	Trade	Perforated plate	wire handle			
Coolgardie campground	856	-30.95200	121.19385	0.101	0.101	0.052	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	857	-30.95239	121.19400	0.11			1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	858	-30.95252	121.19401	0.152	0.092	0.092	2	29-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	859	-30.95252	121.19401	0.09	0.09	0.001	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	860	-30.95273	121.19423	0.12	0.1	0.1	1	29-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	861	-30.95285	121.19415	0.08	0.08	0.06	1	29-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	862	-30.95285	121.19415	0.15	0.15	0.06	1	29-Mar-21	metal	Ferro	Pressed metal				foodways	Preparation	Mixing bowl	Junket cake mould			
Coolgardie campground	863	-30.95286	121.19415	0.11	0.088	0.088	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	864	-30.95304	121.19443	0.2	0.2	0.18	1	29-Mar-21	metal/ enamel	Ferro/ enamel	pot				foodways	Preparation	Kettle				
Coolgardie campground	865	-30.95336	121.19429	0.124	0.11	0.11	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	866	-30.95336	121.19429	0.08	0.07	0.07	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	867	-30.95322	121.19430	0.061	0.051	0.051	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	868	-30.95307	121.19420	0.18	0.12	0.001	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	869	-30.95283	121.19402	0.124	0.07	0.07	2	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	870	-30.95252	121.19379	0.103	0.098	0.098	1	29-Mar-21	metal	Ferro	Can	Resealable			Foodways	Service	Hollowware	Cans			
Coolgardie campground	871	-30.95252	121.19379	0.124	0.07	0.07	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	872	-30.95244	121.19382	0.081	0.072	0.075	1	29-Mar-21	metal	Ferro	Can	Perforated			foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	873	-30.95244	121.19382	0.08	0.08	0.05	1	29-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	874	-30.95241	121.19385	0.28	0.28	0.015	1	29-Mar-21	metal	Ferro	Lid				Profession	Trade	Container	heavy duty			

Coolgardie campground	875	-30.95108	121.19322	0.09	0.09	0.06	15	29-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	876	-30.95111	121.19300	0.128	0.08	0.08	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	877	-30.95229	121.19355	0.52	0.45	0.001	2	29-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	878	-30.95242	121.19366	0.11	0.11	0.06	2	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	879	-30.95329	121.19399	0.35	0.23	0.23	1	29-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	Profession	Trade	Filter container
Coolgardie campground	880	-30.95373	121.19413	0.124	0.08	0.08	3	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	881	-30.95379	121.19401	0.09	0.09	0.05	3	29-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	882	-30.95379	121.19401	0.75	0.75	0.68	2	29-Mar-21	glass	Light green	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	883	-30.95379	121.19401	0.1	0.1	0.1	1	29-Mar-21	glass	Black (French)	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	884	-30.95379	121.19401	0.17	0.09	0.09	1	29-Mar-21	glass	Light green	Alcohol	Bottle	Moulded		foodways	Service	Hollowware	Bottle			
Coolgardie campground	885	-30.95379	121.19401	0.117	0.041	0.041	1	29-Mar-21	glass	Clear	Non-alcohol	Bottle	37		foodways	Service	Storage	Bottle			
Coolgardie campground	886	-30.95379	121.19401	0.05	0.044	0.038	1	29-Mar-21	glass	Light green	Vials	Bottle			Profession	Business	Inkwells				
Coolgardie campground	887	-30.95379	121.19401	0.124	0.08	0.08	2	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	888	-30.95344	121.19385	0.11	0.11	0.07	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	889	-30.95302	121.19360	0.68	0.56	0.028	1	29-Mar-21	metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Coolgardie campground	890	-30.95218	121.19335	0.15	0.1	0.002	1	29-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	891	-30.95195	121.19314	0.117	0.07		1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	892	-30.95140	121.19291	0.08	0.073	0.073	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	893	-30.95103	121.19261	0.115	0.084	0.084	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	894	-30.95103	121.19261	0.11	0.07	0.03	1	29-Mar-21	glass	Clear	Non-alcohol	Torpedo bottle	ELFAST		foodways	Service	Hollowware	Bottle			
Coolgardie campground	895	-30.95103	121.19247	0.115	0.08	0.08	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	896	-30.95103	121.19247	0.08	0.073	0.073	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	897	-30.95150	121.19269	0.11	0.094	0.094	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	898	-30.95164	121.19283	0.102	0.072	0.072	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	899	-30.95164	121.19283	0.27	0.19	0.001	1	29-Mar-21	metal	Ferro	Can				foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	900	-30.95331	121.19335	0.6	0.48	0.48	1	29-Mar-21	metal	Ferro	Drum				Profession	Trade	Container				
Coolgardie campground	901	-30.95331	121.19335	0.073	0.025	0.025	1	29-Mar-21	glass	Clear	Unsure				foodways	Service	Hollowware	Bottle			
Coolgardie campground	902	-30.95342	121.19322	1.31	0.11	0.005	1	29-Mar-21	metal	Ferro/ zinc	galvanised iron	Tube			Structure	Architectural/ construction	Water pipe				
Coolgardie campground	903	-30.95342	121.19322	0.42	0.27	0.002	1	29-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			Personal	Cosmetic	Tub	Lid			
Coolgardie campground	904	-30.95342	121.19322	0.1	0.09	0.068	10	29-Mar-21	stone or clay	Brick	Orange		no markings or frog		structure	Architectural/ construction	unclear				

Coolgardie campground	905	-30.95342	121.19322	0.1	0.075	0.075	3	29-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	906	-30.95342	121.19322	0.16	0.009	0.005	1	29-Mar-21	metal	Ferro	Nails				structure	Architectural/ construction	Attaching and fixing				
Coolgardie campground	907	-30.95342	121.19322	0.05	0.035	0.035	1	29-Mar-21	glass	Clear	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	908	-30.95342	121.19322	0.08	0.075	0.075	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	909	-30.95260	121.19258	0.105	0.105	0.062	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	910	-30.95243	121.19247	0.08	0.08	0.08	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	911	-30.95243	121.19247	0.115	0.09	0.09	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	912	-30.95243	121.19247	0.12	0.1	0.1	1	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	913	-30.95195	121.19227	0.168	0.168	0.065	1	29-Mar-21	metal	Ferro	Container				foodways	Preparation	Billy can				
Coolgardie campground	914	-30.95108	121.19193	0.08	0.073	0.073	6	29-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	915	-30.95218	121.18926	8	8	0.3		29-Mar-21	Stone or clay	Soil rock	Surface soil around work area				Profession	Trade	Solder scavenging residue	Testwork geochemistry			
Coolgardie campground	916	-30.95102	121.19178	0.082	0.075	0.075	250	30-Mar-21	Metal	Ferro	Can	Can dump	Embossed		Profession	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	917	-30.95102	121.19178	0.122	0.1	0.1	100	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	918	-30.95102	121.19178	0.15	0.092	0.092	50	30-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	919	-30.95102	121.19178	0.13	0.085	0.04	50	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	920	-30.95102	121.19178	0.11	0.083	0.025	25	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	921	-30.95102	121.19178	0.13	0.13	0.063	25	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	922	-30.95143	121.19180	0.122	0.1	0.1	3	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	923	-30.95245	121.19189	5	5	0.005	17	30-Mar-21	metal	Ferro	Can	Scatter			Profession	Trade	Solder scavenging residue		Profession	Trade	Solder scavenging residue
Coolgardie campground	924	-30.95245	121.19189	0.112	0.085	0.085	10	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	925	-30.95245	121.19189	0.08	0.075	0.075	5	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	926	-30.95245	121.19189	0.102	0.102	0.04	2	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	927	-30.95190	121.19194	0.122	0.1	0.1	3	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	928	-30.95264	121.19193	0.17	0.128	0.052	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	929	-30.95264	121.19193	0.11	0.11	0.08	2	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	930	-30.95355	121.19217	0.088	0.062	0.062	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	931	-30.95422	121.19231	0.117	0.07	0.07	2	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	932	-30.95422	121.19231	0.13	0.13	0.04	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	933	-30.95348	121.19199	0.108	0.108	0.008	1	30-Mar-21	metal	Ferro	Can				Profession	Trade	Container				

Coolgardie campground	934	-30.95348	121.19199	0.078	0.06	0.06	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	935	-30.95252	121.19168	10	10	0.01	300	30-Mar-21	Metal	Ferro	Can	Can dump			foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	936	-30.95252	121.19168	0.115	0.086	0.086	152	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	937	-30.95252	121.19168	0.122	0.122	0.1	70	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	938	-30.95252	121.19168	0.105	0.085	0.025	20	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	939	-30.95252	121.19168	0.105	0.105	0.072	60	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	940	-30.95252	121.19168	0.23	0.23	0.11	1	30-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	Profession	Trade	Container
Coolgardie campground	941	-30.95252	121.19168	0.13	0.085	0.04	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	942	-30.95252	121.19168	0.15	0.092	0.092	1	30-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	943	-30.95183	121.19140	3	3	0.05	51	30-Mar-21	metal	Ferro	Can	Scatter			Profession	Trade	Solder scavenging residue				
Coolgardie campground	944	-30.95183	121.19140	0.18	0.12	0.048	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	945	-30.95183	121.19140	0.105	0.105	0.005	10	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	946	-30.95183	121.19140	0.11	0.11	0.005	10	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	947	-30.95183	121.19140	0.12	0.12	0.12	30	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	948	-30.95183	121.19140	0.095	0.07	0.002	1	30-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	949	-30.95183	121.19140	0.088	0.062	0.003	1	30-Mar-21	metal	Ferro	Can		C.Q.M.E.CO LTD QUEENSLAND 1894		personal	Recreational	Tobacco smoking				
Coolgardie campground	950	-30.95144	121.19095	0.41	0.32	0.001	1	30-Mar-21	metal	Ferro	sheet metal				structure	Architectural/ construction	unclear				
Coolgardie campground	951	-30.95218	121.19111	0.12	0.002	0.002	2	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	952	-30.95218	121.19111	0.105	0.075	0.075	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	953	-30.95218	121.19111	0.065	0.065	0.001	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	954	-30.95343	121.19147	1.25	0.65	0.002	1	30-Mar-21	metal	Ferro	Corrugated iron	3" corrugations			structure	Architectural/ construction	Building				
Coolgardie campground	955	-30.95459	121.19138	0.295	0.23	0.14	1	30-Mar-21	metal	Ferro	Container				Profession	Trade	Container				
Coolgardie campground	956	-30.95459	121.19138	0.08	0.07	0.07	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	957	-30.95459	121.19138	0.4	0.04	0.001	1	30-Mar-21	metal	Ferro/ zinc	sheet metal				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	958	-30.95438	121.19125	0.15	0.06		1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	959	-30.95438	121.19125	0.128	0.109	0.109	1	30-Mar-21	metal	Ferro	Container				foodways	Service	Teaware	Cups			
Coolgardie campground	960	-30.95438	121.19125	0.295	0.23	0.14	1	30-Mar-21	metal	Ferro	Can				foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	961	-30.95413	121.19119	0.24	0.24	0.2	1	30-Mar-21	metal	Ferro	Container				foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	962	-30.95376	121.19099	0.16	0.16	0.12	1	30-Mar-21	metal/ enamel	Ferro/ enamel	bowl				foodways	Preparation	Cooking vessels				

Coolgardie campground	963	-30.95376	121.19099	0.15	0.09	0.07	1	30-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	964	-30.95376	121.19099	0.124	0.105	0.105	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	965	-30.95360	121.19096	0.18	0.095	0.001	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	966	-30.95360	121.19096	0.123	0.123	0.105	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	967	-30.95360	121.19096	0.128	0.128	0.005	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	968	-30.95348	121.19089	0.18	0.18	0.005	1	30-Mar-21	metal	Ferro	Lid				foodways	Preparation	Billy can	Lid			
Coolgardie campground	969	-30.95327	121.19070	0.08	0.073	0.073	3	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	970	-30.95327	121.19070	0.1	0.1	0.007	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	971	-30.95287	121.19070	0.08	0.05	0.05	2	30-Mar-21	glass	Dark green	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	972	-30.95287	121.19070	0.085	0.73	0.073	3	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	973	-30.95287	121.19070	0.09	0.08	0.05	1	30-Mar-21	glass	Clear	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	974	-30.95287	121.19070	0.124	0.07	0.07	1	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	975	-30.95261	121.19053	1	0.05	0.02	1	30-Mar-21	metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Coolgardie campground	976	-30.95261	121.19053	0.11	0.11	0.073	1	30-Mar-21	metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Coolgardie campground	977	-30.95253	121.19031	30	20	0.01	85	30-Mar-21	metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	978	-30.95253	121.19031	0.11	0.11	0.05	40	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	979	-30.95253	121.19031	0.08	0.073	0.073	40	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	980	-30.95253	121.19031	0.18	0.095	0.001	5	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	981	-30.95239	121.18975	20	20	0.3	1	30-Mar-21	Metal/ Glass	Ferro/ Glass	Mixed can bottle				structure	Architectural/ construction	Building	collapsed			
Coolgardie campground	982	-30.95239	121.18975	2.5	0.5	0.001	1	30-Mar-21	metal	Ferro	Corrugated iron	3" corrugations			structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	983	-30.95239	121.18975	0.48	0.44	0.06	1	30-Mar-21	metal	Ferro	Frame				transport	Vehicle	Bicycle frame				
Coolgardie campground	984	-30.95239	121.18975	0.65	0.3	0.07	1	30-Mar-21	Rubber	Tyre	Fabric reinforcement				transport	Vehicle	Tyre				
Coolgardie campground	985	-30.95239	121.18975	0.43	0.16	0.95	1	30-Mar-21	metal	Ferro	Vehicle				transport	Vehicle	Muffler				
Coolgardie campground	986	-30.95239	121.18975	0.14	0.14	0.05	4	30-Mar-21	ceramic	Earthenware	Refined earthenware	Creamware			personal	Cosmetic	Jug				
Coolgardie campground	987	-30.95239	121.18975	0.19	0.19	0.135	1	30-Mar-21	metal	Ferro	Bucket				Profession	Trade	Ore bucket				
Coolgardie campground	988	-30.95239	121.18975	0.46	0.37	0.05	1	30-Mar-21	metal	Ferro	Lid				Profession	Trade	container lid				
Coolgardie campground	989	-30.95239	121.18975	0.08	0.03	0.003	1	30-Mar-21	metal	Ferro	Small plate				Clothing	Footwear	Boot toe protector				
Coolgardie campground	990	-30.95239	121.18975	0.6	0.05	0.05	1	30-Mar-21	metal	Ferro/ zinc	galvanised iron	Tube			structure	Architectural/ construction	Water pipe				
Coolgardie campground	991	-30.95239	121.18975	0.18	0.18	0.04	1	30-Mar-21	metal	Ferro	Lid				foodways	Preparation	Billy can	Lid			
Coolgardie campground	992	-30.95239	121.18975	0.65	0.43	0.003	1	30-Mar-21	Fibrous cement	Sheet	Building residue				structure	Architectural/ construction	Building	Cladding			
Coolgardie campground	993	-30.95239	121.18975	0.86	0.8	0.09	1	30-Mar-21	Metal/ organic	Ferro/ wood	Wood and wire				Foodways	Production	Kitchen garden				

Coolgardie campground	994	-30.95239	121.18975	0.08	0.73	0.73	200	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	995	-30.95239	121.18975	0.18	0.07	0.04	50	30-Mar-21	glass	Clear	Non-alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	996	-30.95239	121.18975	0.11	0.11	0.05	200	30-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	997	-30.95239	121.18975	0.5	0.08	0.4	1	30-Mar-21	Fibrous cement	corner strip	Building residue				structure	Architectural/ construction	Building	Cladding			
Coolgardie campground	998	-30.95239	121.18975	0.288	0.075	0.075	1	30-Mar-21	glass	Clear	Non-alcohol	Bottle			Foodways	Service	Hollowware	Dressing, sauce bottle			
Coolgardie campground	999	-30.95239	121.18975	0.13	0.1	0.003	9	30-Mar-21	glass	Clear	Window glass				structure	Architectural/ construction	Light source	Window glass			
Coolgardie campground	1000	-30.95239	121.18975	1.1	0.075	0.075	15	30-Mar-21	glass	Clear	Non-alcohol	Jar			foodways	Storage	Hollowware				
Coolgardie campground	1001	-30.95239	121.18975	0.17	0.06	0.02	4	30-Mar-21	Stone or clay	Terracotta	Tile				structure	Architectural/ construction	Roof				
Coolgardie campground	1002	-30.95216	121.18955	10	10	0.01	100	31-Mar-21	metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Cans			
Coolgardie campground	1003	-30.95216	121.18955	0.12	0.12	0.068	20	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1004	-30.95216	121.18955	0.12	0.12	0.078	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1005	-30.95216	121.18955	0.18	0.11	0.002	10	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1006	-30.95216	121.18955	0.152	0.09	0.09	5	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1007	-30.95216	121.18955	0.1	0.07	0.001	3	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1008	-30.95216	121.18955	0.8	0.73	0.73	12	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1009	-30.95199	121.18936	0.11	0.7	0.7	3	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1010	-30.95199	121.18936	0.105	0.078	0.022	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1011	-30.95199	121.18936	0.11	0.065	0.065	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1012	-30.95223	121.18934	5	5	0.14	300	31-Mar-21	metal	Ferro	Can	Can dump			Profession	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1013	-30.95223	121.18934	0.124	0.1	0.1	70	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1014	-30.95223	121.18934	0.08	0.073	0.073	140	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1015	-30.95223	121.18934	0.18	0.12	0.09	20	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1016	-30.95223	121.18934	0.11	0.11	0.07	60	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1017	-30.95223	121.18934	0.1	0.07	0.001	10	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1018	-30.95223	121.18934	0.11	0.11	0.002	1	31-Mar-21	metal	Ferro	Can		CONRAD'S PURE BEEF DRIPPING		foodways	Service	Hollowware	Cans			
Coolgardie campground	1019	-30.95245	121.18961	6	6	0.01	200	31-Mar-21	metal	Ferro	Can	Can dump			Profession	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1020	-30.95245	121.18961	0.11	0.11	0.05	100	31-Mar-21	metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1021	-30.95245	121.18961	0.08	0.73	0.73	80	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1022	-30.95245	121.18961	0.15	0.09	0.07	20	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			

Coolgardie campground	1023	-30.95256	121.18962	5	5	0.005	100	31-Mar-21	metal	Ferro	Can				Profession	Trade	Solder scavenging residue				
Coolgardie campground	1024	-30.95256	121.18962	0.11	0.11	0.05	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1025	-30.95256	121.18962	0.18	0.12	0.005	5	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1026	-30.95256	121.18962	0.1	0.75	0.04	3	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1027	-30.95256	121.18962	0.15	0.09	0.09	3	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1028	-30.95256	121.18962	0.46	0.46	0.001	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1029	-30.95272	121.18964	20	20	0.05	20	31-Mar-21	metal	Ferro	Can	Scatter			foodways	Service	Hollowware	Cans			
Coolgardie campground	1030	-30.95272	121.18964	0.11	0.11	0.05	19	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1031	-30.95272	121.18964	0.15	0.09	0.09	1	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1032	-30.95290	121.18972	0.18	0.13	0.13	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1033	-30.95290	121.18972	0.1	0.1	0.05	7	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1034	-30.95310	121.18983	4	4	0.005	500	31-Mar-21	glass	Dark green	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle dump			
Coolgardie campground	1035	-30.95310	121.18983	0.1	0.08	0.05	100	31-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1036	-30.95310	121.18983	0.09	0.08	0.05	250	31-Mar-21	glass	Clear	Non-alcohol	Torpedo bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1037	-30.95310	121.18983	0.05	0.02	0.003	100	31-Mar-21	glass	Clear	Unsure	Bottle dump			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1038	-30.95310	121.18983	0.05	0.02	0.003	50	31-Mar-21	glass	Dark green	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1039	-30.95310	121.18983	0.08	0.05	0.003	100	31-Mar-21	ceramic	Earthenware	Refined earthenware				foodways	Service	Flatware	Plates			
Coolgardie campground	1040	-30.95310	121.18983	0.1	0.1	0.005	20	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1041	-30.95310	121.18983	0.09	0.09	0.06	1	31-Mar-21	glass	Brown	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1043	-30.95336	121.18989	0.5	0.3	0.3	5	31-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1044	-30.95336	121.18989	0.07	0.04	0.04	1	31-Mar-21	metal	Ferro	Container				Profession	Trade	Container	Drum			
Coolgardie campground	1045	-30.95336	121.18989	0.18	0.11	0.05	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1046	-30.95336	121.18989	0.09	0.09	0.06	1	31-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1047	-30.95336	121.18989	0.11	0.11	0.06	5	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1048	-30.95336	121.18989	0.7	0.5	0.02	1	31-Mar-21	metal	Ferro	Hoops				Profession	Trade	Barrel hoops				
Coolgardie campground	1049	-30.95356	121.19000	0.32	0.23	0.23	1	31-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	Profession	Trade	Filter container
Coolgardie campground	1050	-30.95356	121.19000	0.08	0.073	0.073	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1051	-30.95389	121.19010	0.15	0.09	0.09	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1052	-30.95389	121.19010	0.11	0.09	0.09	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1053	-30.95389	121.19010	0.25	0.19	0.19	1	31-Mar-21	metal	Ferro	Can				foodways	Preparation	Fuel	Kerosene can			

Coolgardie campground	1054	-30.95389	121.19010	0.11	0.07	0.07	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1055	-30.95389	121.19010	0.03	0.02	0.008	5	31-Mar-21	glass	Lilac	Bottle	Solarised			Foodways	Service	Tableware				
Coolgardie campground	1056	-30.95389	121.19010	0.15	0.1	0.1	1	31-Mar-21	metal	Ferro	Container				foodways	Preparation	Billy can				
Coolgardie campground	1057	-30.95389	121.19010	0.055	0.055	0.05	1	31-Mar-21	glass	Clear	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1058	-30.95428	121.19061	0.3	0.24	0.001	5	31-Mar-21	metal	Ferro	Can		MADE IN WESTERN AUSTRALIA SHELL logo		Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1059	-30.95502	121.19079	0.42	0.28	0.28	1	31-Mar-21	metal	Ferro	Bucket	Perforated			Profession	Trade	Ore bucket		Profession	Trade	Filter container
Coolgardie campground	1060	-30.95450	121.19031	4.5	3.5	0.5	1	31-Mar-21	stone or clay	Brick	Orange		Cardup Pressed Brick		structure	Architectural/ construction	Building foundation				
Coolgardie campground	1061	-30.95450	121.19031	0.34	0.23	0.23	1	31-Mar-21	metal	Ferro	Container				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1062	-30.95450	121.19031	0.15	0.11	0.08	50	31-Mar-21	Stone or clay	Brick	Orange	No frog			structure	Architectural/ construction	Building foundation				
Coolgardie campground	1063	-30.95450	121.19031	0.22	0.11	0.05	10	31-Mar-21	Stone or clay	Brick	Orange		DR and CP		structure	Architectural/ construction	Building foundation				
Coolgardie campground	1064	-30.95450	121.19031	0.14	0.1	0.08	5	31-Mar-21	Stone or clay	Brick	Black	Vitrified			structure	Architectural/ construction	Brick				
Coolgardie campground	1065	-30.95417	121.19022	0.42	0.42	0.002	1	31-Mar-21	metal	Ferro	Lid				profession	Trade	unclear		Profession	Trade	unclear
Coolgardie campground	1066	-30.95408	121.19007	0.45	0.41	0.002	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			profession	Trade	unclear				
Coolgardie campground	1067	-30.95397	121.18987	3.6	1.6	1.3	1	31-Mar-21	metal	Ferro	Vehicle				transport	Vehicle	Car				
Coolgardie campground	1068	-30.95381	121.18976	0.45	0.3	0.001	1	31-Mar-21	metal	Ferro	Corrugated iron	3" corrugations			Structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1069	-30.95381	121.18976	0.15	0.09	0.09	1	31-Mar-21	metal	Ferro	Can	Resealable			foodways	Storage	Hollowware	Resealable can			
Coolgardie campground	1070	-30.95381	121.18976	0.15	0.15	0.13	3	31-Mar-21	metal	Ferro	Container				foodways	Preparation	Billy can				
Coolgardie campground	1071	-30.95381	121.18976	0.08	0.073	0.073	2	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1072	-30.95364	121.18962	0.56	0.34	0.22	1	31-Mar-21	Metal	Ferro	Big basin				Personal	Cosmetic	Tub				
Coolgardie campground	1073	-30.95331	121.18919	5	5	1	1	31-Mar-21	stone or clay	Soil rock	Surface soil around work area				profession	Trade	Mine shaft				
Coolgardie campground	1074	-30.95331	121.18919	3	2	0.02	100	31-Mar-21	metal	Ferro	Can	Can dump			foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1075	-30.95331	121.18919	0.74	0.1	0.1	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Water pipe				
Coolgardie campground	1076	-30.95331	121.18919	0.44	0.21	0.002	2	31-Mar-21	metal	Ferro	Plate				profession	Trade	Perforated plate				
Coolgardie campground	1077	-30.95331	121.18919	0.32	0.21	0.21	3	31-Mar-21	metal	Ferro	Bucket	Perforated			profession	Trade	Ore bucket		Profession	Trade	Filter container
Coolgardie campground	1078	-30.95331	121.18919	0.18	0.13	0.002	2	31-Mar-21	ceramic	Earthenware	Refined earthenware		JOHNSON BROS ENGLAND RO NO 15587		foodways	Service	Flatware	Plates			
Coolgardie campground	1079	-30.95331	121.18919	5	5	0.1	50	31-Mar-21	metal	Ferro	Can	Scatter			foodways	Service	Hollowware	Cans			
Coolgardie campground	1080	-30.95331	121.18919	0.18	0.11	0.05	3	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			

Coolgardie campground	1081	-30.95331	121.18919	0.22	0.075	0.075	5	31-Mar-21	glass	Brown	Alcohol	Bottle	THE WEST AUSTRALIA GLASS MANUFACTURERS LTD. THIS BOTTLE ALWAYS REMAINS THE PROPERTY OF		foodways	Service	Hollowware	Bottle			
Coolgardie campground	1082	-30.95331	121.18919	0.7	0.55	0.5	1	31-Mar-21	ceramic	Earthenware	Refined earthenware		A MADE IN ENNGLAND T.F.&S. ltd		foodways	Service	Teaware	Cups			
Coolgardie campground	1083	-30.95331	121.18919	0.2	0.09	0.04	1	31-Mar-21	metal	Ferro	Can				profession	Trade	Oil can	small			
Coolgardie campground	1084	-30.95331	121.18919	0.12	0.12	0.09	10	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1085	-30.95331	121.18919	0.09	0.09	0.08	40	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1086	-30.95304	121.18910	3	3	0.01	12	31-Mar-21	metal	Ferro	Can	Scatter			foodways	Service	Hollowware	Cans			
Coolgardie campground	1087	-30.95304	121.18910	0.12	0.09	0.09	0	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1088	-30.95304	121.18910	0.08	0.73	0.73	4	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1089	-30.95216	121.18932	8	8	0.3	400	31-Mar-21	metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1090	-30.95216	121.18932	0.18	0.11	0.05	20	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1091	-30.95216	121.18932	0.13	0.1	0.1	200	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1092	-30.95216	121.18932	0.08	0.07	0.07	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1093	-30.95216	121.18932	0.15	0.11	0.11	5	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1094	-30.95216	121.18932	0.11	0.11	0.07	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1095	-30.95216	121.18932	0.5	0.09	0.09	30	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1096	-30.95216	121.18932	0.05	0.04	0.02	5	31-Mar-21	glass	Lilac	Bottle	Solarised			Foodways	Service	Tableware				
Coolgardie campground	1097	-30.95218	121.18926	8	8	0.3	1050	31-Mar-21	metal	Ferro	Can	Can dump			Profession	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1098	-30.95218	121.18926	0.18	0.11	0.05	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1099	-30.95218	121.18926	0.13	0.1	0.1	600	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1100	-30.95218	121.18926	0.08	0.07	0.07	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1101	-30.95218	121.18926	0.11	0.11	0.07	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1102	-30.95218	121.18926	0.5	0.09	0.09	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1103	-30.95218	121.18926	0.15	0.08	0.08	50	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1104	-30.95218	121.18926	0.11	0.08	0.02	40	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1105	-30.95218	121.18926	0.07	0.06	0.02	10	31-Mar-21	glass	Dark green	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1106	-30.95239	121.18887	1.6	0.9	0.9	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	1107	-30.95241	121.18882	1.45	1.2	0.002	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Water tank	Water storage			

Coolgardie campground	1108	-30.95236	121.18920	6	6	0.1	300	31-Mar-21	metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1109	-30.95236	121.18920	0.1	0.1	0.06	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1110	-30.95236	121.18920	0.08	0.07	0.07	100	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1111	-30.95236	121.18920	0.11	0.11	0.05	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1112	-30.95236	121.18920	0.15	0.09	0.09	20	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1113	-30.95236	121.18920	0.12	0.11	0.11	30	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1114	-30.95232	121.18876	0.62	0.57	0.002	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	1115	-30.95240	121.18870	5	5	0.01	100	31-Mar-21	metal	Ferro	Can	Can dump			Foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1116	-30.95240	121.18870	0.08	0.073	0.073	40	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1117	-30.95240	121.18870	0.1	0.1	0.06	50	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1118	-30.95240	121.18870	0.12	0.075	0.002	5	31-Mar-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1119	-30.95240	121.18870	0.12	0.12	0.12	5	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1120	-30.95217	121.18861	3	3	0.04	50	31-Mar-21	metal	Ferro	Can	Scatter			Profession	Trade	Solder scavenging residue				
Coolgardie campground	1121	-30.95217	121.18861	0.105	0.075	0.025	5	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1122	-30.95217	121.18861	0.08	0.75	0.075	30	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1123	-30.95217	121.18861	0.1	0.055	0.055	10	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1124	-30.95217	121.18861	0.185	0.15	0.05	5	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1125	-30.95217	121.18861	0.06	0.04	0.03	1	31-Mar-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1126	-30.95275	121.18872	0.165	0.7	0.6	1	31-Mar-21	metal	Ferro	Corrugated iron	3" corrugations			structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	1127	-30.95288	121.18872	0.6	0.4	0.4	1	31-Mar-21	metal	Ferro	Drum				Profession	Trade	Container		Foodways	Preparation	Barbeque
Coolgardie campground	1128	-30.95349	121.18906	0.75	0.45	0.45	1	31-Mar-21	metal	Ferro	Corrugated iron	3" corrugations			structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	1129	-30.95349	121.18906	0.85	0.048	0.048	1	31-Mar-21	metal	Ferro	Pipe				Structure	Architectural/ construction	Water pipe				
Coolgardie campground	1130	-30.95349	121.18906	0.08	0.05	0.004	2	31-Mar-21	glass	Lilac	Bottle	Solarised			Foodways	Service	Tableware				
Coolgardie campground	1131	-30.95369	121.18916	0.34	0.23	0.23	1	31-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1132	-30.95369	121.18916	0.11	0.11	0.074	1	31-Mar-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1133	-30.95385	121.18928	0.23	0.23	0.19	1	31-Mar-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	Profession	Trade	Container
Coolgardie campground	1134	-30.95386	121.18925	0.4	0.1	0.1	1	31-Mar-21	metal	Ferro	Drum				profession	Trade	Container				
Coolgardie campground	1135	-30.95386	121.18925	0.06	0.004	0.008	1	31-Mar-21	metal	Ferro	Container				personal	Recreational	Tobacco smoking				
Coolgardie campground	1136	-30.95402	121.18921	1.25	1.25	0.003	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Tank	Cover			

Coolgardie campground	1137	-30.95402	121.18921	0.46	0.46	0.35	1	31-Mar-21	metal	Ferro/ zinc	galvanised iron				Profession	Trade	Container				
Coolgardie campground	1138	-30.95402	121.18921	0.31	0.31	0.02	1	31-Mar-21	metal	Ferro	Pressed metal		decorated curlicues		Foodways	Service	Salver	Ornamental	Profession	Trade	Filter plate
Coolgardie campground	1139	-30.95411	121.18924	1	0.4	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1140	-30.95423	121.18912	1	0.9	0.001	5	01-Apr-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1141	-30.95423	121.18912	0.09	0.09	0.07	2	01-Apr-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1142	-30.95439	121.18908	1.3	0.06	0.001	2	01-Apr-21	metal	Ferro/ zinc	galvanised iron	3" corrugations			structure	Architectural/ construction	Water tank				
Coolgardie campground	1143	-30.95439	121.18908	0.42	0.42	0.002	1	01-Apr-21	metal	Ferro	Container				profession	Trade	Square container	Lid			
Coolgardie campground	1144	-30.95437	121.18924	0.92	0.3	0.3	1	01-Apr-21	metal	Ferro	Tube	Square			structure	Architectural/ construction	unclear				
Coolgardie campground	1145	-30.95437	121.18924	0.41	0.41	0.02	1	01-Apr-21	metal	Ferro	Plate	Machine perforated			Foodways	Storage	Preservation	Coolgardie safe wall-plate			
Coolgardie campground	1146	-30.95437	121.18924	1.1	0.065	0.001	1	01-Apr-21	metal	Ferro	sheet metal				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1147	-30.95437	121.18924	0.15	0.15	0.15	3	01-Apr-21	metal	Ferro	Container				Profession	Trade	Container	Drum			
Coolgardie campground	1148	-30.95476	121.18922	4	3	0.2	200	01-Apr-21	stone or clay	Brick dump	Grey				structure	Architectural/ construction	Building foundation				
Coolgardie campground	1149	-30.95476	121.18922	2	1	0.15	40	01-Apr-21	stone or clay	Brick	Orange				structure	Architectural/ construction	Brick	Handmade			
Coolgardie campground	1150	-30.95476	121.18922	0.105	0.105	0.78	1	01-Apr-21	stone or clay	Brick	Orange		TCR		structure	Architectural/ construction	Brick	Frog			
Coolgardie campground	1151	-30.95476	121.18922	0.15	0.07	0.003	1	01-Apr-21	Fibrous cement	Sheet	Building residue				structure	Architectural/ construction	Roof or wall	Cladding			
Coolgardie campground	1152	-30.95476	121.18922	0.08	0.08	0.032	1	01-Apr-21	metal	Ferro	Can				personal	Recreational	Tobacco smoking				
Coolgardie campground	1153	-30.95476	121.18922	0.06	0.055	0.05	1	01-Apr-21	glass	Clear	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1154	-30.95476	121.18922	0.444	0.4	0.1	1	01-Apr-21	metal	Ferro	Drum				profession	Trade	Container	Drum			
Coolgardie campground	1155	-30.95476	121.18922	0.93	0.221	0.001	1	01-Apr-21	metal	Ferro/ zinc	sheet metal				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1156	-30.95442	121.18992	0.46	0.45	0.31	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				profession	Trade	Square container				
Coolgardie campground	1157	-30.95445	121.18981	2.5	1.5	0.2	1000	01-Apr-21	glass	Brown	Alcohol	Bottle			foodways	Service	Hollowware	Bottle dump			
Coolgardie campground	1158	-30.95445	121.18981	0.18	0.07	0.07	1	01-Apr-21	glass	Clear	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1159	-30.95445	121.18981	0.14	0.08	0.04	1	01-Apr-21	glass	Brown	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1160	-30.95445	121.18981	0.16	0.09	0.025	8	01-Apr-21	Metal/ cement	Iron/ cement	Block				structure	Architectural/ construction	Building foundation				
Coolgardie campground	1161	-30.95445	121.18981	0.11	0.105	0.075	5	01-Apr-21	stone or clay	Brick	Orange				structure	Architectural/ construction	Brick	Frog			
Coolgardie campground	1162	-30.95523	121.18899	1.7	1.5	0.5	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Water tank				
Coolgardie campground	1163	-30.95344	121.18880	0.52	0.28	0.15	1	01-Apr-21	metal	Ferro	Big basin				Personal	Cosmetic	Wash bowl				
Coolgardie campground	1164	-30.95357	121.18879	3.1	0.28	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	3" corrugations			structure	Architectural/ construction	Water tank	Water storage			
Coolgardie campground	1165	-30.95357	121.18879	0.25	0.25	0.004	1	01-Apr-21	metal	Ferro	Can				foodways	Storage	Hollowware	Square can			
Coolgardie campground	1166	-30.95357	121.18879	0.15	0.11	0.05	1	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			

Coolgardie campground	1167	-30.95362	121.18881	0.74	0.68	0.68	5	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1168	-30.95362	121.18881	0.13	0.13	0.005	1	01-Apr-21	metal	Ferro	Container	Screw cap			foodways	Preparation	Fuel	Petrol can			
Coolgardie campground	1169	-30.95362	121.18881	0.42	0.36	0.32	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				profession	Trade	Barrel hoops				
Coolgardie campground	1170	-30.95365	121.18879	0.4	0.21	0.12	1	01-Apr-21	metal/ enamel	Ferro/ enamel	pan				foodways	Preparation	Frying pan				
Coolgardie campground	1171	-30.95364	121.18879	0.58	0.39	0.001	1	01-Apr-21	metal	Ferro	Pressed metal				structure	Architectural/ construction	Furnishings/ Accessories	Decorative sheeting			
Coolgardie campground	1172	-30.95364	121.18879	0.22	0.1	0.07	5	01-Apr-21	stone or clay	Brick	Orange	Frogged			structure	Architectural/ construction	Brick	Frog			
Coolgardie campground	1173	-30.95369	121.18890	0.6	0.47	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1174	-30.95376	121.18887	0.1	0.075	0.02	3	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1175	-30.95376	121.18887	0.2	0.16	0.16	1	01-Apr-21	metal/ enamel	Ferro/ enamel	pot				foodways	Service	Teaware	Teapot			
Coolgardie campground	1176	-30.95378	121.18883	0.95	0.9	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1177	-30.95378	121.18883	0.22	0.22	0.02	1	01-Apr-21	metal	Ferro	Plate				foodways	Service	Flatware	Plates			
Coolgardie campground	1178	-30.95378	121.18883	0.111	0.09	0.09	1	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1179	-30.95381	121.18892	0.22	0.22	0.001	1	01-Apr-21	metal	Ferro	Container		PENNANT KEROSENE		foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1180	-30.95380	121.18880	0.13	0.12	0.002	1	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1181	-30.95380	121.18880	0.1	0.07	0.07	1	01-Apr-21	metal	Ferro	Can		PIERCE LID AT ARROW AND LEVER UPWARDS TO OPEN		foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1182	-30.95380	121.18880	0.12	0.11	0.002	9	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1183	-30.95380	121.18880	0.75	0.025	0.002	1	01-Apr-21	metal	Ferro	Strap				Transport	Goods	Packing strap				
Coolgardie campground	1184	-30.95380	121.18880	0.14	0.11	0.07	1	01-Apr-21	stone or clay	Brick	Orange				structure	Architectural/ construction	Brick	Handmade			
Coolgardie campground	1185	-30.95376	121.18873	0.225	0.225	0.002	1	01-Apr-21	metal	Ferro	Container		DRIALENE MINERAL TURPENTINE		profession	Trade	Container	Turpentine			
Coolgardie campground	1186	-30.95376	121.18873	0.11	0.09	0.075	1	01-Apr-21	stone or clay	Brick	Orange				structure	Architectural/ construction	Brick				
Coolgardie campground	1187	-30.95376	121.18873	0.128	0.08	0.08	11	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1188	-30.95376	121.18873	0.12	0.1	0.1	10	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1189	-30.95376	121.18873	1	0.5	0.001	1	01-Apr-21	metal	Ferro	Wire				structure	Architectural/ construction	Garden				
Coolgardie campground	1191	-30.95376	121.18871	0.18	0.11	0.04	3	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1192	-30.95376	121.18871	0.17	0.84	0.84	1	01-Apr-21	glass	Brown	Alcohol	Bottle	THE WEST AUSTRALIA GLASS MANUFACTURERS LTD. THIS BOTTLE ALWAYS REMAINS THE PROPERTY OF		foodways	Service	Hollowware	Bottle			
Coolgardie campground	1193	-30.95371	121.18874	0.07	0.06	0.002	20	01-Apr-21	ceramic	Earthenware	Refined earthenware				foodways	Service	Flatware	Plates			
Coolgardie campground	1194	-30.95362	121.18870	0.79	0.43	0.002	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	unclear				

Coolgardie campground	1195	-30.95349	121.18865	20	20	0.01	50	01-Apr-21	metal	Ferro	Can	Scatter			foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1196	-30.95349	121.18865	0.105	0.09	0.09	20	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1197	-30.95349	121.18865	0.11	0.11	0.1	20	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1198	-30.95349	121.18865	0.1	0.1	0.1	10	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1199	-30.95329	121.18859	0.18	0.11	0.05	2	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1200	-30.95344	121.18851	7	7	0.1	50	01-Apr-21	metal	Ferro	Can	Scatter			Foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1201	-30.95344	121.18851	0.18	0.11	0.05	5	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1202	-30.95344	121.18851	0.12	0.08	0.08	15	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1203	-30.95344	121.18851	0.08	0.07	0.07	20	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1204	-30.95344	121.18851	0.1	0.1	0.06	10	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1205	-30.95361	121.18849	0.48	0.22	0.005	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				personal	Cosmetic	Wash bowl				
Coolgardie campground	1206	-30.95361	121.18849	0.08	0.08	0.001	5	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1207	-30.95361	121.18849	0.18	0.08	0.004	1	01-Apr-21	metal	Ferro	Hook				Clothing	Storage	Coat hook				
Coolgardie campground	1208	-30.95358	121.18840	0.75	0.75	0.55	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Water tank				
Coolgardie campground	1209	-30.95367	121.18829	0.36	0.36	0.12	1	01-Apr-21	metal/ enamel	Ferro/ enamel	pan				personal	Cosmetic	Wash bowl				
Coolgardie campground	1210	-30.95367	121.18829	1.05	1.05	0.52	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	3" corrugations			Structure	Architectural/ construction	Water tank				
Coolgardie campground	1211	-30.95367	121.18829	1.4	0.52	0.24	5	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Roof or wall	Chimney			
Coolgardie campground	1212	-30.95367	121.18829	1.35	0.7	0.35	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Roof or wall				
Coolgardie campground	1213	-30.95367	121.18829	0.18	0.11	0.05	1	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1214	-30.95367	121.18829	0.11	0.09	0.04	3	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1215	-30.95378	121.18835	0.1	0.09	0.09	1	01-Apr-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1216	-30.95386	121.18833	0.83	0.03	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Tube			structure	Architectural/ construction	Water pipe				
Coolgardie campground	1217	-30.95373	121.18867	0.76	0.46	0.002	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron	Flat sheet			structure	Architectural/ construction	Air inlet				
Coolgardie campground	1218	-30.95375	121.18863	0.23	0.23	0.07	3	01-Apr-21	metal	Ferro	Can				foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1219	-30.95375	121.18863	0.18	0.11	0.07	2	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1220	-30.95379	121.18864	0.77	0.3	0.004	1	01-Apr-21	metal	Ferro	Box				profession	Trade	Ship's tank	Water container	Profession	Trade	Water condenser tank
Coolgardie campground	1221	-30.95379	121.18860	4	4	0.02	200	01-Apr-21	metal	Ferro	Can	Can dump			foodways	Service	Hollowware	Cans	Profession	Trade	Solder scavenging residue
Coolgardie campground	1222	-30.95379	121.18860	0.124	0.09	0.09	50	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1223	-30.95379	121.18860	0.11	0.09	0.04	50	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1224	-30.95379	121.18860	0.85	0.75	0.75	50	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			

Coolgardie campground	1225	-30.95379	121.18860	0.09	0.09	0.05	50	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1226	-30.95379	121.18860	0.24	0.24	0.002	1	01-Apr-21	metal	Ferro	Tool				profession	Trade	Shovel				
Coolgardie campground	1227	-30.95379	121.18860	0.69	0.69	0.045	3	01-Apr-21	metal	Ferro	Hoops				profession	Trade	Barrel hoops				
Coolgardie campground	1228	-30.95379	121.18860	0.075	0.075	0.06	10	01-Apr-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1229	-30.95385	121.18860	0.43	0.092	0.001	1	01-Apr-21	metal	Ferro/ zinc	galvanised iron				structure	Architectural/ construction	Window decoration				
Coolgardie campground	1230	-30.95250	121.18811	0.15	0.15	0.05	1	01-Apr-21	metal	Ferro	Small basin				foodways	Preparation	Frying pan				
Coolgardie campground	1231	-30.95250	121.18811	0.49	0.16	0.002	1	01-Apr-21	metal	Ferro	Bar				transport	Vehicle	Handle bar				
Coolgardie campground	1232	-30.95250	121.18811	0.45	0.33	0.19	3	01-Apr-21	metal	Ferro	Big basin				profession	Trade	Basin	not enamelled			
Coolgardie campground	1233	-30.95250	121.18811	0.23	0.23	0.001	1	01-Apr-21	metal	Ferro	Lid				foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1234	-30.95258	121.18799	20	20	1	1	01-Apr-21	stone or clay	Soil rock	Mound				profession	Trade	Mine shaft				
Coolgardie campground	1235	-30.95258	121.18799	0.23	0.23	0.35	2	01-Apr-21	metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Coolgardie campground	1236	-30.95258	121.18799	0.075	0.075	0.07	5	01-Apr-21	glass	Black	Alcohol	Bottle			foodways	Service	Hollowware	Bottle			
Coolgardie campground	1237	-30.95258	121.18799	0.18	0.11	0.05	20	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1238	-30.95258	121.18799	0.18	0.13	0.03	1	01-Apr-21	metal/ enamel	Ferro/ enamel	pan				foodways	Preparation	Baking pans				
Coolgardie campground	1239	-30.95258	121.18799	0.01	0.08	0.02	30	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Coolgardie campground	1240	-30.95258	121.18799	0.08	0.073	0.073	30	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Hole & cap cans			
Coolgardie campground	1241	-30.95258	121.18799	0.085	0.055	0.055	2	01-Apr-21	metal	Ferro	Can				foodways	Service	Hollowware	Cans			
Coolgardie campground	1242	-30.95258	121.18799	0.43	0.43	0.04	1	01-Apr-21	metal	Ferro	Big basin				profession	Trade	Basin	Gold pan			
Coolgardie campground	1243	-30.95258	121.18799	0.27	0.27	0.13	2	01-Apr-21	metal	Ferro/ zinc	Bucket	Perforated			profession	Trade	Perforated can side	filter			
Coolgardie cemetery	1	-30.94964	121.14365	2	1	0.3	1	08-Sep-20	Stone or clay	Soil rock	Mound		No plinth	No mound	Faith	Burial	Grave	Muslim			
Coolgardie cemetery	2	-30.94966	121.14373	2	1	0.3	1	08-Sep-20	Metal/ cement	Iron/ cement	Block		Plinth	Symbolic mound	Faith	Burial	Grave	Muslim			
Coolgardie cemetery	3	-30.94962	121.14381	2	1	0.3	1	08-Sep-20	Stone or clay	Soil rock	Mound				Faith	Burial	Grave	Muslim			
Coolgardie cemetery	4	-30.94968	121.14359	2	1	0.3	1	08-Sep-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Grave	Muslim			
Coolgardie cemetery	5	-30.94974	121.14379	2	1	0.3	31	08-Sep-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Grave	Muslim			
Cue campground	556	-27.43134	117.90705	0.26	0.19	0.001	1	20-Sep-20	Metal	Ferro	Pressed metal		Embossed	Wunderlich	Structure	Architectural/ construction	Furnishings/ Accessories	Decorative sheeting			
Cue campground	558	-27.43156	117.90697	0.2	0.07	0.07	300	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	559	-27.43175	117.90682	0.08	0.08	0.08	301	20-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	560	-27.43175	117.90682	0.06	0.03	0.006	5	20-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Cue campground	561	-27.43175	117.90682	0.3	0.2	0.08	1	20-Sep-20	Metal	Cupro/ Ferro	Bracket		Ornate	Twisted wire	Profession	Trade	Bracket				

Cue campground	563	-27.43183	117.90676	0.85	0.55	0.08	1	20-Sep-20	Metal	Ferro	Pressed metal		Embossed	Wunderlich	Structure	Architectural/ construction	Furnishings/ Accessories				
Cue campground	566	-27.43173	117.90691	0.17	0.13	0.005	1	20-Sep-20	Metal	Ferro	Frame				Unclear						
Cue campground	568	-27.43173	117.90691	0.08	0.08	0.005	1	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	570	-27.43173	117.90691	0.05	0.01	0.005	1	20-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking				
Cue campground	576	-27.43204	117.90701	0.22	0.17	0.004	1	20-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Cue campground	579	-27.43204	117.90701	0.052	0.052	0.01	1	20-Sep-20	Glass	Lilac	Stemware	Solarised			Foodways	Service	Hollowware	Stemware			
Cue campground	580	-27.43204	117.90701	0.3	0.3	0.3	1	20-Sep-20	Metal	Ferro	Container				Foodways	Service	Hollowware	Bucket			
Cue campground	581	-27.43204	117.90701	0.15	0.09	0.015	1	20-Sep-20	Metal	Ferro	Bar				Transport	Animal	Harness component				
Cue campground	591	-27.43274	117.90750	0.14	0.09	0.09	1	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	592	-27.43274	117.90750	0.07	0.07		1	20-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	594	-27.43314	117.90679	100	2	0.2	500	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	595	-27.43314	117.90679	0.18	0.11	0.11	1000	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	598	-27.43314	117.90679	0.12	0.11	0.005	2	20-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Cue campground	599	-27.43314	117.90679	0.11	0.07	0.05	1	20-Sep-20	Metal	Ferro	Tool				Profession	Trade	Screw press				
Cue campground	603	-27.43327	117.90655	0.61	0.36	0.33	1	20-Sep-20	Metal	Ferro	Case				Personal	Storage	Chest				
Cue campground	604	-27.43314	117.90679	0.12	0.07	0.07	3	20-Sep-20	Glass	Clear	Non-alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	605	-27.43314	117.90679	0.07	0.07	0.01	3	20-Sep-20	Glass	Lilac	Bottle	Solarised			Personal	Medicinal	Toiletries				
Cue campground	606	-27.43289	117.90669	0.25			1	20-Sep-20	Metal	Ferro	Chain				Transport	Animal	Mouth bit	Full cheek			
Cue campground	608	-27.43251	117.90652	0.22	0.13	0.03	1	20-Sep-20	Metal	Ferro	Mechanism				Structure	Architectural/ construction	Door lock				
Cue campground	610	-27.43251	117.90652	0.15			1	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	614	-27.43021	117.90582	0.1	0.04	0.004	2	20-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Cue campground	616	-27.42989	117.90510	6	2	0.3	1	20-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick	Handmade			
Cue campground	617	-27.42981	117.90518	0.5	0.03	0.005	1	20-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				
Cue campground	618	-27.42967	117.90548	0.27	0.18	0.008	1	20-Sep-20	Ceramic	Stoneware	Glazed		Decorated	Shell edge	Personal	Cosmetic	Jars				
Cue campground	619	-27.42962	117.90542	3	3		1	20-Sep-20	Ceramic	Earthenware	Coarse earthenware				Profession	Trade	Batteries				
Cue campground	620	-27.42950	117.90543	0.06	0.05	0.005	1	20-Sep-20	Metal	Ferro	Buckle				Transport	Animal	Trappings buckle				
Cue campground	622	-27.42927	117.90531	0.65	0.35	0.009	2	20-Sep-20	Metal	Ferro	Frame				Personal	Storage	Gladstone bag frame				
Cue campground	623	-27.42910	117.90552	5	5	0.1	100	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Sanitary can			
Cue campground	627	-27.42903	117.90553	0.07	0.07		1	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	628	-27.42854	117.90570	0.7	0.7	0.4	100	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			

Cue campground	630	-27.42854	117.90570	0.1	0.1		1	20-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	632	-27.42802	117.90558	10	10	0.2	1000	20-Sep-20	Glass	Black	Alcohol	Bottle dump			Foodways	Service	Hollowware				
Cue campground	634	-27.42766	117.90577	0.1			100	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware				
Cue campground	636	-27.42737	117.90576	0.1	0.07	0.07	50	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Sanitary can			
Cue campground	637	-27.42737	117.90601	3	3	0.1	1	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	639	-27.42792	117.90585	0.11			5	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	640	-27.42837	117.90597	0.1			100	20-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	641	-27.42837	117.90597	0.25	0.7	0.7	500	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	645	-27.42904	117.90601	0.1	0.1		50	20-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Cue campground	650	-27.42937	117.90597	0.75			1	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	652	-27.43005	117.90592	0.11			50	20-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Cue campground	653	-27.42737	117.90576	3	3	0.1	1	20-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware				
Cue cemetery	714	-27.43638	117.88854	2	1		1	20-Sep-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Grave	Muslim			
Cue cemetery	715	-27.43695	117.88942	2	1		1	20-Sep-20	Metal/ cement	Iron/ cement	Block		Plinth	Symbolic mound	Faith	Burial	Grave	Muslim			
Cue old cemetery	713	-27.42800	117.90699	2	1		9	20-Sep-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Cemetery	Muslim			
Guildford cemetery	740	-31.91750	115.97650	2	1	0.2	400	11-Aug-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Cemetery	Muslim			
Kalgoorlie	1244	-30.74162	121.45312	10	10	5	1	01-Apr-21	Metal/ organic	Ferro/ wood	building				Structure	Architectural/ construction	Building	Rotunda			
Kalgoorlie campground	112	-30.75376	121.45489	200	150	5	1	10-Sep-20	Stone or clay	Built up surface					Structure	Architectural/ construction	Water tank	Water storage			
Kalgoorlie campground	113	-30.75333	121.45665	0.3	0.022	0.013	1	10-Sep-20	Metal	Ferro	Bar	Curved			Profession	Trade	Tradesman tools				
Karrakatta cemetery	716	-31.97550	115.79880	2	1		21	28-Jul-20	Stone or clay	Marble (stone)	Headstone		Plinth	Headstone	Faith	Burial	Grave	Muslim			
Karrakatta cemetery	717	-31.97550	115.79880	2	1		1	28-Jul-20	Stone or clay	Marble (stone)	Block				Faith	Burial	Grave	Muslim			
Karrakatta cemetery	718	-31.97550	115.79880	2	1		1	28-Jul-20	Stone or clay	Marble (stone)	Block				Faith	Burial	Grave	Muslim			
Karrakatta cemetery	719	-31.97550	115.79880	2	1		1	28-Jul-20	Stone or clay	Marble (stone)	Block				Faith	Burial	Grave	Muslim			
Karrakatta cemetery	720	-31.97550	115.79880	2	1		1	28-Jul-20	Stone or clay	Marble (stone)	Block				Faith	Burial	Grave	Muslim			
Karrakatta cemetery	721	-31.97550	115.79880	2	1		1	28-Jul-20	Stone or clay	Marble (stone)	Block				Faith	Burial	Grave	Muslim			
Kathleen townsite	528	-27.51089	120.56515	100	100	5	1	18-Sep-20	Metal/ organic	Ferro/ wood	Townsite				Structure	Architectural/ construction	Habitation				

Kathleen townsite	529	-27.51085	120.56585	0.3	0.2	0.001	1	18-Sep-20	Metal	Ferro	Pressed metal		Embossed	Wunderlich	Structure	Architectural/ construction	Furnishings/ Accessories	Decorative sheeting			
Kathleen townsite	530	-27.51063	120.56557	20	10	2	1	18-Sep-20	Metal/ organic	Ferro/ wood	Townsite				Structure	Architectural/ construction	Habitation				
Kathleen townsite	531	-27.51050	120.56556	3	0.5	0.001	1	18-Sep-20	Metal	Ferro	Corrugated iron				Structure	Architectural/ construction	Building	collapsed			
Kathleen townsite	532	-27.50978	120.56526	5	5	0.3	1	18-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Building foundation				
Kathleen townsite	533	-27.50978	120.56526	0.1	0.07		1	18-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Kathleen townsite	534	-27.50962	120.56517	0.1	0.07	0.07	3	18-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Cans			
Kathleen townsite	535	-27.50962	120.56517	0.15	0.1	0.006	1	18-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Storage	Bottle			
Kathleen townsite	536	-27.50999	120.56529	0.03	0.03	0.005	1	18-Sep-20	Metal	Cupro/ Zinc	Brass				Personal	Decorative	Pocket watch frame				
Kathleen townsite	537	-27.51042	120.56514	0.2	0.15	0.08	1	18-Sep-20	Metal	Ferro	Can				Personal	Other	Lamp				
Kathleen townsite	538	-27.51056	120.56503	0.5	0.5	0.5	1	18-Sep-20	Metal/ organic	Ferro/ wood	Mechanical device				Profession	Trade	Container		Personal	Cosmetic	Washing machine
Kathleen townsite	539	-27.51060	120.56500	0.6	0.2	0.001	1	18-Sep-20	Metal	Ferro/ zinc	Mechanism				Structure	Architectural/ construction	Windmill vanes				
Kathleen townsite	540	-27.51064	120.56501	0.5	0.4	0.01	1	18-Sep-20	Metal	Ferro	Frame				Foodways	Preparation	Oven				
Kathleen townsite	542	-27.51090	120.56532	3	3	0.1	100	18-Sep-20	Metal	Ferro/ plumbo	Can				Foodways	Service	Hollowware	Can dump			
Kathleen townsite	543	-27.51030	120.56513	0.05	0.02	0.004	1	18-Sep-20	Metal	Ferro	Plate				Transport	Vehicle	Wheel jack	plate on lifting piston			
Kathleen townsite	544	-27.51072	120.56608	7	5	2	1	18-Sep-20	Metal/ organic	Ferro/ wood	Townsite				Structure	Architectural/ construction	Chook coop				
Kathleen townsite	744	-27.51050	120.56556	0.3	0.2	0.001	1	18-Sep-20	Metal	Ferro	Pressed metal				Structure	Architectural/ construction	Furnishings/ Accessories	Decorative sheeting			
Kathleen townsite	745	-27.51072	120.56608	3	2	2	1	18-Sep-20	Metal	Ferro	Corrugated iron				Structure	Architectural/ construction	Water tank				
Kathleen townsite	757	-27.51056	120.56503	0.5	0.2	0.001	1	18-Sep-20	Metal	Ferro/ zinc	Mechanism				Structure	Architectural/ construction	Windmill vanes				
Kathleen townsite	765	-27.51036	120.56545	4.75	3.65	1.75	1	25-Mar-21	Stone or clay	Excavation	Pit				Foodways	Storage	Preservation				
Kathleen townsite	766	-27.51080	120.56523	1.78	1.78	1.78	1	25-Mar-21	metal	Ferro	Box				Profession	Trade	Ship's tank	Water container	Profession	Trade	Water condenser tank
Kathleen townsite	767	-27.51074	120.56520	1.6	1.1	0.75	1	25-Mar-21	Stone or clay	Excavation	Pit				Foodways	Storage	Preservation				
Lawlers	853	-28.15126	120.57223	6	2	2	1	28-Mar-21	metal	Ferro/ zinc	Windmill		THE AEROMOTOR CHICAGO		Structure	Architectural/ construction	Windmill	Ruin			
Lawlers cemetery	850	-28.06850	120.51511	1	0.4	0.05	1	28-Mar-21	stone or clay	Soil rock	Mound				faith	Burial	Grave	Christian			
Lawlers cemetery	851	-28.06851	120.51508	1	0.4	0.05	1	28-Mar-21	stone or clay	Soil rock	Mound				faith	Burial	Grave	Christian			
Lawlers cemetery	852	-28.06854	120.51511	1	0.4	0.05	1	28-Mar-21	stone or clay	Soil rock	Mound				faith	Burial	Grave	Christian			
Leonora campground	114	-28.88544	121.32279	0.08	0.04	0.04	1	10-Sep-20	Glass	Lilac	Bottle	Solarised			Personal	Medicinal	Toiletries				
Leonora campground	115	-28.88567	121.32218	0.34	0.03	0.009	1	10-Sep-20	Metal	Ferro	Bar				Profession	Business	Beam balance				
Leonora campground	302	-28.88315	121.32435	0.17	0.08	0.007	1000	13-Sep-20	Glass	Black (French)	Alcohol	Bottle dump			Foodways	Service	Hollowware				

Leonora campground	303	-28.88311	121.32438	4	0.095	0.095	1	13-Sep-20	Metal	Ferro	Pipe				Structure	Architectural/ construction	Water pipe				
Leonora campground	305	-28.88305	121.32421	0.1	0.1	0.005	22	13-Sep-20	Glass	Brown	Alcohol	Bottle			Foodways	Service	Hollowware				
Leonora campground	307	-28.88313	121.32415	0.24	0.18	0.1	1	13-Sep-20	Metal	Ferro	Can				Profession	Trade	Container	Screw lid			
Leonora campground	308	-28.88314	121.32390	0.12	0.04	0.02	9	13-Sep-20	Metal	Ferro	Spike				Profession	Trade	Rail dog spike				
Leonora campground	309	-28.88317	121.32365	0.3	0.13	0.001	1	13-Sep-20	Metal	Ferro	handle, drum				Foodways	Service	Hollowware	Milk can			
Leonora campground	311	-28.88330	121.32354	0.1	0.08	0.05	4	13-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick				
Leonora campground	312	-28.88330	121.32354	0.11	0.08	0.04	1	13-Sep-20	Metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Leonora campground	314	-28.88354	121.32339	0.08	0.07	0.002	1	13-Sep-20	Metal	Ferro	Pressed metal				Profession	Trade	Embossed metal	unclear			
Leonora campground	315	-28.88373	121.32328	0.1	0.08	0.006	100	13-Sep-20	Glass	Green	Alcohol	Bottle dump			Foodways	Service	Hollowware	Bottle			
Leonora campground	317	-28.88334	121.32435	0.34	0.24	0.24	1	13-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can			
Leonora campground	318	-28.88362	121.32407	0.41	0.41	0.002	1	13-Sep-20	Metal	Ferro/ zinc	galvanised iron				Personal	Cosmetic	Washing machine	lid			
Leonora campground	319	-28.88378	121.32367	0.16	0.13	0.005	1	13-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Leonora campground	320	-28.88387	121.32356	0.3	0.03	0.008	1	13-Sep-20	Metal	Ferro	Bracket				Profession	Trade	Bracket				
Leonora campground	321	-28.88397	121.32324	0.11	0.05	0.015	5	13-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Leonora campground	322	-28.88397	121.32324	0.09	0.05	0.01	1	13-Sep-20	Metal	Ferro	Rings				Profession	Trade	Bracket				
Leonora campground	323	-28.88422	121.32303	20	1	0.1	1000	13-Sep-20	Glass	Black	Alcohol	Bottle dump			Foodways	Service	Hollowware	Bottle	Structure	Architectural/ construction	Demolition, clearing
Leonora campground	324	-28.88426	121.32258	0.15	0.15	0.04	6	13-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Leonora campground	325	-28.88426	121.32258	0.05	0.04	0.003	6	13-Sep-20	Metal	Ferro	Buckle				Personal	Storage	Satchel buckle				
Leonora campground	326	-28.88426	121.32258	0.06	0.06	0.004	5	13-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Leonora campground	327	-28.88426	121.32258	0.055	0.05	0.003	5	13-Sep-20	Metal	Ferro	D ring				Transport	Animal	Hobbles				
Leonora campground	328	-28.88426	121.32258	0.055	0.05	0.004	1	13-Sep-20	Metal	Cupro/ Zinc	Brass				Clothing	Fasteners	Buckle				
Leonora campground	329	-28.88426	121.32258	0.56	0.08	0.016	1	13-Sep-20	Metal	Ferro	Bar				Transport	Vehicle	Handle bar				
Leonora campground	330	-28.88446	121.32271	0.08	0.06	0.01	2	13-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Hollowware	Jug			
Leonora campground	331	-28.88446	121.32271	0.2	0.15	0.008	200	13-Sep-20	Glass	Black	Alcohol	Bottle dump			Foodways	Service	Hollowware	Bottle			
Leonora campground	332	-28.88454	121.32271	0.31	0.31	0.05	1	13-Sep-20	Metal	Ferro	Basin small shallow				Foodways	Preparation	Frying pan				
Leonora campground	333	-28.88442	121.32242	0.06	0.05	0.01	1	13-Sep-20	Metal	Ferro	Buckle				Profession	Trade	Buckle				
Leonora campground	334	-28.88433	121.32268	0.06	0.05	0.005	1	13-Sep-20	Metal	Ferro	Buckle				Profession	Trade	Buckle				
Leonora campground	335	-28.88433	121.32268	0.1	0.06	0.005	1	13-Sep-20	Metal	Cupro/ Zinc	Brass				Clothing	Fasteners	Buckle				
Leonora campground	336	-28.88432	121.32260	0.21	0.11	0.005	1	14-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Billy can				
Leonora campground	337	-28.88432	121.32260	0.1	0.04	0.02	1	14-Sep-20	Metal	Ferro	Bar				Unclear						
Leonora campground	338	-28.88432	121.32260	0.2	0.2	0.05	2	14-Sep-20	Metal/ enamel	Ferro/ enamel	bowl				Personal	Cosmetic	Wash bowl				

Leonora campground	339	-28.88432	121.32260	0.25	0.25	0.002	1	14-Sep-20	Metal	Ferro	Plate				Profession	Trade	Perforated plate				
Leonora campground	340	-28.88379	121.32423	0.28	0.26	0.003	1	14-Sep-20	Metal	Ferro	Tool				Profession	Trade	Shovel				
Leonora campground	341	-28.88379	121.32423	0.16	0.015	0.003	1	14-Sep-20	Metal	Ferro	Tool				Profession	Trade	Wrench				
Leonora campground	342	-28.88379	121.32423	0.075	0.075	0.008	1	14-Sep-20	Metal	Ferro	D ring				Profession	Trade	D ring				
Leonora campground	343	-28.88379	121.32423	0.06	0.05	0.006	1	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring				
Leonora campground	344	-28.88417	121.32306	0.2	0.08	0.08	1000	14-Sep-20	Glass	Dark green	Alcohol	Bottle dump			Foodways	Service	Hollowware		Structure	Architectural/ construction	Demolition, clearing
Leonora campground	345	-28.88417	121.32306	0.17	0.17	0.008	1	14-Sep-20	Metal	Ferro	Plate				Personal	Decorative	Baseplate	for candles?			
Leonora campground	346	-28.88398	121.32352	0.14	0.042	0.004	1	14-Sep-20	Metal	Ferro	Mechanism				Personal	Storage	Latch				
Leonora campground	347	-28.88394	121.32370	0.15	0.03	0.003	1	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Leonora campground	348	-28.88386	121.32392	0.33	0.18	0.001	1	14-Sep-20	Metal/ enamel	Ferro/ enamel	pot				Foodways	Service	Teaware	Teapot			
Leonora campground	349	-28.88381	121.32412	0.11	0.08	0.002	3	14-Sep-20	Metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Leonora campground	350	-28.88381	121.32412	0.15	0.035	0.004	1	14-Sep-20	Metal	Ferro	Hook				Personal	Habitation	Tent guy rope hook				
Leonora campground	351	-28.88380	121.32420	0.2	0.165	0.01	1	14-Sep-20	Metal/ enamel	Ferro/ enamel	pot				Foodways	Service	Hollowware	Cans			
Leonora campground	352	-28.88380	121.32420	0.1	0.08	0.05	1	14-Sep-20	metal	Ferro	Can				foodways	Service	Hollowware	Fish can			
Leonora campground	353	-28.88376	121.32423	0.07	0.07	0.004	7	14-Sep-20	Ceramic	Stoneware	Glazed		Decorated		Foodways	Service	Hollowware	Bowls			
Leonora campground	354	-28.88416	121.32354	0.1	0.1	0.09	20	14-Sep-20	Glass	Clear	Unsure	Bottle dump			Foodways	Service	Hollowware	Bottle			
Leonora campground	356	-28.88416	121.32354	0.1	0.1	0.08	1	14-Sep-20	Metal	Ferro	Can				Foodways	Service	Storage	Cans			
Leonora campground	357	-28.88416	121.32354	0.1	0.08	0.09	1	14-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick				
Leonora campground	358	-28.88430	121.32338	0.08	0.05	0.008	1	14-Sep-20	Metal	Ferro	Can				Personal	Recreational	Matchbox				
Leonora campground	359	-28.88439	121.32322	0.095	0.075	0.005	1	14-Sep-20	Metal	Ferro	D ring				Transport	Animal	Harness component				
Leonora campground	361	-28.88446	121.32312	0.25	0.2	0.2	20	14-Sep-20	Stone or clay	Brick	Yellow	Fragments			Structure	Architectural/ construction	Brick				
Leonora campground	362	-28.88458	121.32292	0.2	0.06	0.005	1	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				
Leonora campground	363	-28.88458	121.32292	0.3	0.01	0.01	1	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Harness component				
Leonora campground	364	-28.88464	121.32277	0.06	0.04	0.003	5	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring				
Leonora campground	365	-28.88464	121.32277	0.09	0.085	0.009	1	14-Sep-20	Metal	Ferro	Bar				Unclear						
Leonora campground	367	-28.88464	121.32277	0.04	0.02	0.003	10	14-Sep-20	Ceramic	Earthenware	Coarse earthenware				Foodways	Service	Flatware				
Leonora campground	368	-28.88478	121.32238	0.08	0.05	0.01	5	14-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Leonora campground	369	-28.88478	121.32238	0.08	0.01	3	5	14-Sep-20	Metal	Ferro	Spike				Profession	Trade	Rail dog spike				
Leonora campground	371	-28.88471	121.32319	0.03	0.02	0.002	2	14-Sep-20	Metal	Ferro	Buckle				Clothing	Fasteners	Buckle				
Leonora campground	373	-28.88471	121.32319	0.09	0.06	0.004	7	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				

Leonora campground	374	-28.88471	121.32319	0.46	0.07	0.01		14-Sep-20	Metal	Ferro	Rod		Moulded	Floral motif	Personal	Habitation	Bedframe				
Leonora campground	375	-28.88471	121.32319	0.19	0.1	0.005	1	14-Sep-20	Metal	Ferro	Bar				Profession	Business	Beam balance				
Leonora campground	376	-28.88471	121.32319	0.05	0.03	0.005	1	14-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Hollowware	Jug			
Leonora campground	377	-28.88463	121.32336	0.15	0.035	0.006	6	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				
Leonora campground	378	-28.88463	121.32336	0.13	0.015	0.003	2	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Leonora campground	380	-28.88462	121.32355	0.11	0.07	0.009	2	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				
Leonora campground	381	-28.88462	121.32355	0.07	0.06	0.01	2	14-Sep-20	Metal	Ferro	Buckle				Profession	Trade	Buckle				
Leonora campground	382	-28.88462	121.32355	0.14	0.03	0.01	1	14-Sep-20	Metal	Ferro	Mechanism				Foodways	Preparation	Can opener				
Leonora campground	383	-28.88446	121.32383	0.18	0.06	0.01	1	14-Sep-20	Metal	Ferro	Rod		Moulded	Geometric motif	Structure	Architectural/ construction	unclear				
Leonora campground	384	-28.88438	121.32408	0.07	0.07	0.001	1	14-Sep-20	Metal	Ferro	Can				Clothing	Footwear	Boot polish tin				
Leonora campground	385	-28.88435	121.32396	0.05	0.04	0.005	1	14-Sep-20	Glass	Brown	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Leonora campground	386	-28.88446	121.32374	0.09	0.05	0.012	1	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	split ring				
Leonora campground	387	-28.88467	121.32277	0.09	0.05	0.005	1	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring				
Leonora campground	388	-28.88467	121.32277	0.07	0.07	0.005	1	14-Sep-20	Metal	Ferro	Buckle		Moulded	Geometric motif	Profession	Trade	Buckle				
Leonora campground	389	-28.88467	121.32236	0.14	0.05	0.02	1	14-Sep-20	Metal	Ferro	Spike				Profession	Trade	Rail dog spike				
Leonora campground	390	-28.88466	121.32226	0.42	0.37	0.002	1	14-Sep-20	Metal	Ferro	Bucket				Profession	Trade	Ore bucket				
Leonora campground	391	-28.88457	121.32210	0.2	0.2	0.05	1	14-Sep-20	Metal/ enamel	Ferro/ enamel	bowl				Personal	Cosmetic	Wash bowl				
Leonora campground	392	-28.88457	121.32210	0.095	0.095	0.07	1	14-Sep-20	Glass	Black	Alcohol	Bottle dump			Foodways	Service	Hollowware	Bottle			
Leonora campground	393	-28.88457	121.32210	0.08	0.08	0.02	1	14-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking				
Leonora campground	394	-28.88484	121.32238	0.01	0.01	0.001	100	14-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Leonora campground	395	-28.88484	121.32238	0.13	0.1	0.003	1	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Leonora campground	396	-28.88494	121.32336	0.07	0.05	0.005	2	14-Sep-20	Metal	Ferro	Buckle				Personal	Storage	Satchel buckle				
Leonora campground	397	-28.88494	121.32336	0.09	0.09	0.004	1	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring				
Leonora campground	398	-28.88494	121.32336	0.22	0.11	0.07	2	14-Sep-20	Stone or clay	Brick	Orange				Structure	Architectural/ construction	Brick				
Leonora campground	399	-28.88639	121.32236	0.07	0.065	0.008	1	14-Sep-20	Metal	Ferro	Chain				Transport	Animal	Hobble chain				
Leonora campground	405	-28.88643	121.32086	0.35	0.22	0.22	1	14-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Bucket			
Leonora campground	406	-28.88646	121.32052	0.2	0.1	0.07	25	14-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Leonora campground	408	-28.88518	121.32120	0.4	0.25	0.25	1	14-Sep-20	Metal	Ferro/ zinc	Container				Profession	Trade	Water tank		Profession	Trade	unclear
Leonora campground	410	-28.88541	121.32297	0.23	0.025	5	1	14-Sep-20	Metal	Ferro	Bar				Profession	Trade	Bracket				
Leonora campground	411	-28.88481	121.32202	0.15			1	14-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Hole & cap cans			
Leonora campground	413	-28.88476	121.32214	0.11	0.11	0.005	1	14-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			

Leonora campground	415	-28.88478	121.32222	0.1	0.02	0.003	1	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe		
Leonora campground	417	-28.88481	121.32235	0.13	0.11	0.005	1	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe		
Leonora campground	418	-28.88498	121.32265	0.13	0.12	0.005	1	14-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe		
Leonora campground	419	-28.88505	121.32278	0.1	0.09	0.001	1	14-Sep-20	Metal	Ferro	Can				foodways	Service	Hollowware	Fish can	
Leonora campground	422	-28.88497	121.32301	0.05	0.05		1	14-Sep-20	Glass	Lilac	Bottle	Solarised			Foodways	Service	Hollowware	Bottle	
Leonora campground	732	-28.88497	121.32301	0.04	0.04	0.005	1	14-Sep-20	Metal	Ferro	Rings				Profession	Trade	Ring		
Leonora campground	733	-28.88497	121.32301	0.07	0.03	0.01	1	14-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking		
Leonora campground	734	-28.88497	121.32301	0.1			1	14-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans	
Leonora campground	735	-28.88497	121.32301	0.15	0.15		1	14-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans	
Leonora campground	746	-28.88376	121.32423	0.07	0.07	0.004	7	14-Sep-20	Ceramic	Stoneware	Glazed				Foodways	Service	Hollowware	Jug	
Leonora campground	747	-28.88315	121.32435	0.1	0.1	0.03	1	13-Sep-20	Metal	Ferro	Rings				Profession	Trade	unclear		
Leonora campground	748	-28.88426	121.32258	0.07	0.06	0.004	6	13-Sep-20	Metal	Ferro	Buckle				Profession	Trade	Buckle		
Leonora campground	749	-28.88462	121.32355	0.07	0.06	0.01	2	14-Sep-20	Metal	Ferro	Buckle				Personal	Storage	Satchel buckle		
Leonora cemetery	729	-28.89806	121.34495	2	1	0.2	1000	14-Sep-20	Stone or clay	Soil rock	Mound				Burial	Grave	Christian		
Leonora pioneers	727	-28.88404	121.31176	2	1	0.1	25	14-Sep-20	Stone or clay	Soil rock	Mound				Faith	Burial	Grave	Christian	
Malcolm campground	148	-28.93152	121.51929	0.088	0.04	0.04	1	12-Sep-20	Glass	Lilac	Bottle	Solarised			Personal	Medicinal	Toiletries		
Malcolm campground	149	-28.93146	121.51949	0.09	0.07	0.005	1	12-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking		
Malcolm campground	151	-28.93154	121.52002	0.13	0.13	0.045	1	12-Sep-20	Metal	Ferro	Basin small shallow				Profession	Trade	Basin	not enamelled	
Malcolm campground	152	-28.93148	121.52027	0.09	0.08	0.005	1	12-Sep-20	Glass	Black	Alcohol				Foodways	Service	Hollowware	Bottle	
Malcolm campground	153	-28.93135	121.52022	0.2	0.12	0.001	1	12-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	
Malcolm campground	155	-28.93146	121.51937	0.3	0.3	0.11	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans	
Malcolm campground	156	-28.93142	121.51904	0.135	0.04	0.04	1	12-Sep-20	Metal	Ferro	Spike				Profession	Trade	Rail dog spike		
Malcolm campground	157	-28.93146	121.51876	0.3	0.3	0.11	4	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans	
Malcolm campground	158	-28.93141	121.51873	0.4			200	12-Sep-20	Ceramic	Earthenware	Refined earthenware		Decorated	Hotel tableware	Foodways	Service	Flatware	Plates	
Malcolm campground	159	-28.93141	121.51873	0.4			200	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle	
Malcolm campground	160	-28.93140	121.51849	0.09	0.08	0.003	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans	
Malcolm campground	161	-28.93134	121.51823	0.08	0.085		11	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans	
Malcolm campground	162	-28.93134	121.51823	0.08	0.085		11	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle	
Malcolm campground	163	-28.93132	121.51814	0.125	0.09	0.09	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans	

Malcolm campground	164	-28.93114	121.51826	0.35	0.2	0.2	3	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	166	-28.93114	121.51826	0.06	0.06	0.01	1	12-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking				
Malcolm campground	168	-28.93111	121.51864	0.9	0.9	0.77	25	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	170	-28.93106	121.51880	0.11	0.11	0.05	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	171	-28.93106	121.51880	0.48	0.25	0.001	1	12-Sep-20	Metal	Ferro	Tube				Unclear						
Malcolm campground	172	-28.93104	121.51904	0.11	0.11		1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	173	-28.93107	121.51922	0.2	0.06	0.06	2	12-Sep-20	Glass	Clear	Alcohol		Moulded		Foodways	Service	Hollowware	Bottle			
Malcolm campground	174	-28.93102	121.51953	0.06	0.05	0.007	2	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	175	-28.93102	121.51972	0.085	0.075	0.07	30	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	176	-28.93102	121.51972	0.44	0.44	0.15	1	12-Sep-20	Metal	Ferro	Basin small shallow				Personal	Cosmetic	Wash bowl				
Malcolm campground	177	-28.93094	121.51980	0.1	0.1	0.06	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware				
Malcolm campground	178	-28.93086	121.52004	0.03			1	12-Sep-20	Metal	Ferro	Mechanism				Foodways	Service	Hollowware	Key opener			
Malcolm campground	179	-28.93086	121.52004	0.11	0.11	0.08	50	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans			
Malcolm campground	180	-28.93092	121.52011	50	2	0.3	20	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	181	-28.93092	121.52011	0.15	0.08	0.04	1	12-Sep-20	Ceramic	Stoneware	Glazed				Profession	Business	Ink Jug				
Malcolm campground	182	-28.93092	121.52011	0.1	0.003	0.003	1	12-Sep-20	Metal	Ferro	Spike				Profession	Trade	Spike	Coachwork			
Malcolm campground	183	-28.93092	121.52011	50	2	0.3	5	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	184	-28.93092	121.52011	100	2	0.2	100	12-Sep-20	glass	black	alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	185	-28.93092	121.52011	0.04			1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware				
Malcolm campground	186	-28.93092	121.52011	50	2	0.3	20	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	187	-28.93092	121.52011	0.08	0.08	0.03	10	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	188	-28.93092	121.52011	0.07	0.07	0.04	1	12-Sep-20	Glass	Clear	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	189	-28.93089	121.52015	0.11	0.11	0.005	1	12-Sep-20	Metal	Ferro	Horseshoe				Transport	Animal	Horseshoe				
Malcolm campground	190	-28.93089	121.52015	0.09			1	12-Sep-20	Glass	Opaque white	Bottle				Foodways	Service	Hollowware	Bottle			
Malcolm campground	191	-28.93089	121.52015	0.09	0.006		2	12-Sep-20	Metal	Ferro	Spike				Transport	Vehicle	Wagon frame spike				
Malcolm campground	194	-28.93067	121.51838	0.3	0.3	0.04	1	12-Sep-20	Metal	Ferro	Container				Profession	Trade	Barrel hoops				
Malcolm campground	196	-28.93062	121.51825	0.17	0.08	0.03	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Fish can			
Malcolm campground	198	-28.93086	121.51809	0.11	0.11	0.01	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Cans	Profession	Trade	Smelting crucible
Malcolm campground	199	-28.93293	121.51990	0.3	0.23	0.23	1	12-Sep-20	Metal	Ferro	Bucket				Foodways	Service	Hollowware	Bucket			
Malcolm campground	203	-28.93337	121.51845	0.07	0.05	0.005	1	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	204	-28.93337	121.51845	0.285	0.18	0.18	1	12-Sep-20	Metal	Ferro	Container				Profession	Trade	Ore bucket				

Malcolm campground	206	-28.93337	121.51845	0.1	0.1	0.18	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	207	-28.93311	121.51847	0.12			1000	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	208	-28.93311	121.51847	0.08	0.08	0.007	1	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	209	-28.93311	121.51847	50	2	0.3	20	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	210	-28.93311	121.51847	0.1	0.08	0.01	1	12-Sep-20	Metal	Ferro	Can				Personal	Recreational	Tobacco smoking				
Malcolm campground	211	-28.93311	121.51847	0.08	0.008	0.008	1	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	212	-28.93311	121.51847	0.08	0.06	0.008	1	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	213	-28.93311	121.51847	0.05			10	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	214	-28.93311	121.51847	0.08	0.07	0.02	1	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	219	-28.93295	121.51843	0.15			1	12-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Structure	Architectural/ construction	Demolition, clearing				
Malcolm campground	220	-28.93267	121.51842	0.08	0.08		1	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	221	-28.93303	121.51876	0.05			1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	222	-28.93303	121.51876	0.2	0.2	0.02	2	12-Sep-20	Stone clay glass metal	ridge	earthmoving										
Malcolm campground	223	-28.93264	121.51989	0.26	0.26		1	12-Sep-20	Metal	Ferro	Lid				Profession	Trade	Container	heavy duty			
Malcolm campground	225	-28.93269	121.51887	1.1	0.17	0.002	1	12-Sep-20	Metal	Ferro	Container				Profession	Trade	Ore bucket				
Malcolm campground	226	-28.93252	121.51816	0.08	0.08	0.075	1	12-Sep-20	Glass	Lilac	Bottle	Solarised			Personal	Medicinal	Toiletries				
Malcolm campground	227	-28.93241	121.51850	0.03	0.025	0.02	1	12-Sep-20	Glass	Lilac	Bottle	Solarised			Foodways	Service	Hollowware	Bottle			
Malcolm campground	228	-28.93236	121.51926	0.11	0.11	0.08	1	12-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Hole & cap cans			
Malcolm campground	229	-28.93236	121.51926	0.07	0.05	0.006	20	12-Sep-20	Glass	Black	Alcohol	Bottle			Foodways	Service	Hollowware	Bottle			
Malcolm campground	231	-28.93218	121.52034	0.36	0.33	0.33	1	12-Sep-20	Metal	Ferro	Drum				Profession	Trade	Container		Foodways	Preparation	Barbeque
Malcolm campground	233	-28.93207	121.51959	20	0.4	0.1	1	12-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Structure	Architectural/ construction	Demolition, clearing				
Malcolm campground	234	-28.93193	121.51894	0.19	0.11	0.08	2	12-Sep-20	Stone or clay	Brick	Yellow				Structure	Architectural/ construction	Brick	Frog			
Malcolm campground	238	-28.93178	121.51984	0.35	0.235	0.235	1	12-Sep-20	Metal	Ferro	Can				Foodways	Preparation	Fuel	Kerosene can	Profession	Trade	Filter container
Malcolm campground	239	-28.93189	121.52001	0.3	0.285	0.285	1	12-Sep-20	Metal	Ferro	Drum	Heating			Foodways	Preparation	Water condenser				
Malcolm campground	654	-28.93260	121.51943	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	655	-28.93261	121.51936	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	656	-28.93257	121.51936	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	657	-28.93256	121.51927	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	658	-28.93258	121.51923	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	659	-28.93259	121.51917	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	660	-28.93266	121.51919	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			

Malcolm campground	661	-28.93258	121.51908	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	662	-28.93257	121.51897	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	663	-28.93265	121.51868	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	664	-28.93264	121.51859	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	665	-28.93250	121.51812	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	666	-28.93247	121.51828	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	667	-28.93234	121.51867	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	668	-28.93239	121.51880	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	669	-28.93236	121.51899	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	670	-28.93237	121.51909	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	671	-28.93245	121.51917	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	672	-28.93239	121.51924	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	673	-28.93237	121.51928	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	674	-28.93235	121.51930	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	675	-28.93233	121.51943	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	676	-28.93241	121.51966	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	677	-28.93215	121.52027	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	678	-28.93214	121.52000	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	679	-28.93206	121.51970	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	680	-28.93208	121.51962	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	681	-28.93204	121.51948	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	682	-28.93194	121.51931	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	683	-28.93192	121.51916	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	684	-28.93192	121.51896	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	685	-28.93192	121.51875	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	686	-28.93188	121.51857	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	687	-28.93188	121.51837	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	688	-28.93191	121.51819	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	689	-28.93192	121.51796	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	690	-28.93170	121.51826	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	691	-28.93180	121.51856	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			

Malcolm campground	692	-28.93185	121.51893	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	693	-28.93187	121.51901	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	694	-28.93187	121.51925	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	695	-28.93187	121.51931	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	696	-28.93192	121.51932	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	697	-28.93191	121.51951	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	698	-28.93188	121.51950	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	699	-28.93186	121.51961	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	700	-28.93181	121.51969	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	701	-28.93180	121.51970	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	702	-28.93181	121.51982	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	703	-28.93182	121.51981	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	704	-28.93182	121.51981	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	705	-28.93182	121.51979	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	706	-28.93178	121.51997	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	707	-28.93181	121.51997	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	708	-28.93183	121.51998	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	709	-28.93190	121.52000	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	710	-28.93193	121.51999	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	711	-28.93182	121.51992	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	712	-28.93189	121.52000	0.11			1	09-Sep-20	Metal	Ferro	can				Foodways	Service	Hollowware	Cans			
Malcolm campground	742	-28.93303	121.51876	0.07	0.07	0.008	1	09-Sep-20	Metal	Ferro	Rings				Transport	Animal	Hobble chain				
Malcolm campground	743	-28.93295	121.51843	0.19	0.045	0.02	1	12-Sep-20	Metal	Ferro	Tool				Profession	Trade	Pincers	cut packing straps, wire			
Malcolm cemetery	728	-28.98319	121.50421	2	1	0.1	30	09-Sep-20	Stone or clay	Soil rock	Mound				Faith	Burial	Grave	Christian			
Mount Magnet cemetery	722	-28.06080	117.86275	2	1	0.4	1	19-Sep-20	Stone or clay	Metamorphic rock	rockpile or ridge				Faith	Burial	Grave	Shahid			
Mount Magnet cemetery	726	-28.06080	117.86275	60	20	0.2	9	17-Sep-20	Stone or clay	Soil rock	Mound		Pebble ring	Grave outline	Faith	Burial	Cemetery	Muslim			
Poison Creek	854	-28.25299	120.69116	10	2	0.7	1	28-Mar-21	stone or clay	Excavation	Pit				structure	Architectural/ construction	Water bore				

Sir Samuel cemetery	423	-27.61396	120.54828	0.1	0.1	0.1	3	15-Sep-20	Metal	Ferro	Stainless steel plaque				Faith	Burial	Cemetery	Muslim			
Sir Samuel cemetery	424	-27.61410	120.54761	1	0.5	0.12	1	15-Sep-20	Stone or clay	Marble (stone)	Headstone		Pebble ring	Grave outline	Faith	Burial	Grave	Muslim			
Sir Samuel townsite	425	-27.62610	120.54958	0.2	0.04	0.002	1	15-Sep-20	Metal	Ferro	Hinge				Structure	Architectural/ construction	Door hinge				
Sir Samuel townsite	426	-27.62610	120.54958	0.9	0.17	0.2	1	15-Sep-20	Stone or clay	Brick	Grey				Structure	Architectural/ construction	Building				
Sir Samuel townsite	427	-27.62586	120.54926	2.4	2.7	1.5	1	15-Sep-20	Metal/ clay	Ferro	Brick				Structure	Architectural/ construction	Furnace				
Sir Samuel townsite	428	-28.88520	121.32310	10	10	0.15	500	15-Sep-20	Metal	Ferro	Can				Foodways	Service	Hollowware	Can dump			
Sir Samuel townsite	429	-27.62612	120.54949	5	3	0.5	2000	15-Sep-20	Stone or clay	Brick dump	Orange				Structure	Architectural/ construction	Building	collapsed			
Sir Samuel townsite	430	-27.62628	120.54943	10	10	0.1	1	15-Sep-20	Glass	Brown	Alcohol	Bottle			Foodways	Service	Hollowware				
Sir Samuel townsite	431	-27.62665	120.54987	15	0.8	0.8	1	15-Sep-20	Rock	Excavation	Shaft				Profession	Trade	Mine shaft				
Sir Samuel townsite	432	-27.62697	120.55009	0.07	0.55	0.005	1	15-Sep-20	Metal/ Glass	Ferro/ Glass	Mixed can bottle				Foodways	Service	Hollowware	Mixed can bottle midden			
Sir Samuel townsite	433	-27.62697	120.55009	0.07	0.055	0.005	1	15-Sep-20	Metal	Ferro/ zinc	Mechanism				Personal	Decorative	Clock mechanism				
Sir Samuel townsite	434	-27.62673	120.54910	0.05	0.04	0.005	25	15-Sep-20	Ceramic	Earthenware	Refined earthenware		Decorated	Floral	Foodways	Service	Hollowware	Jug			
Sir Samuel townsite	435	-27.62721	120.54875	0.13	0.105	0.01	2	15-Sep-20	Metal	Ferro/ zinc	Mechanism				Structure	Architectural/ construction	Door lock				
Sir Samuel townsite	436	-27.62682	120.54777	4	2	2	1	15-Sep-20	Stone/ organic	Rock	Vegetation				Structure	Architectural/ construction	Garden				
Sir Samuel townsite	437	-27.62682	120.54777	4	2	2	1	15-Sep-20	Metal	Ferro	Vehicle				Transport	Vehicle	Ute				
Sir Samuel townsite	759	-27.62586	120.54926	10	10		4	15-Sep-20	Metal/ cement	Iron/ cement	Block				Structure	Architectural/ construction	Building foundation				

APPENDIX 2

Solder Scavenging from Hole-and-Cap Food Cans: A Site Modification Process in Can Dumps in the Western Australian Goldfields

ABSTRACT

Site modification of large and dense can dumps found in the Western Australian goldfields, dating from the gold rushes from the 1890s, may profoundly affect the archaeological interpretation of these sites. Can dumps comprising hundreds of cans, stacked up and in mutual contact and without other artefacts such as bottles, were not all the unmodified remains of meals and camps of transient people. This work presents a geochemical technique applied to soil samples around these dumps, showing high levels of tin and lead contamination, inconsistent with the underlying geology and similar to the composition of the solder used to seal the cans. This is consistent with the written reminiscence of a family supplementing its income by scavenging solder from hole-and-cap food cans from the period 1894-1909. This process of site modification by solder scavenging must be considered before food-can distribution patterns can be interpreted in terms of primary site occupation.

Keywords: Solder, scavenging, hole-and-cap cans, site modification, goldfields

INTRODUCTION

The concept of a milieu of global gold mining (Lawrence Cheney, 1992) involves the view that all mining communities through space and time share many important characteristics. This includes migrations of peoples to goldfields, marginal and remote lifestyles in communities mostly of males, the recycling and reuse after modification of mine-site materials such as mining equipment (Fleming, 2011), buildings, and smaller-scale utensils. In remote areas and in new fields with a high risk of marginal returns, this is an important means of reducing costs (Lawrence, 1995). However, the concept has limitations, in that many mining centres have fundamental and very individual features that closely control the ways of life there (Fleming, 2011). These local features relevant to Western Australian goldfields include aridity, low topographic relief and poor outcrop, and the highly weathered state of the gold-bearing rocks that allows for profitable artisanal surficial mining before the high costs of underground mining were confronted. These are all features that are archaeologically visible. The process of artefact and site modification considered here likely belongs in the more universal part of the world mining milieu of this era.

A feature of late 19th century campgrounds in the Western Australian goldfields are accumulations of empty cans and bottles that contained foodstuffs and alcohol (Bateman, in preparation; Bolton, 2009). These have been deposited from the outset of exploration, travel, settlement, and commerce in mining, agriculture, and pastoralism. The semi-arid conditions of the Western Australian goldfields mean that these cans and bottles were commonly the principal archaeological artefacts found on domestic campgrounds, whether for short or long term or for small or large groups of people.

The formation of these features might appear straightforward: an individual or a small group camped in the area while travelling or working, and the remains of meals were abandoned there and then. The results below show that this simple scenario of ‘dine and dump’ does not fit with the data, and that a process of site modification had been superimposed on the primary distribution of foodways artefacts.

One process of site modification, a process of solder scavenging, was briefly considered by Bolton (2009) in her study of transient workers' camps on a major colonial project, the Goldfields Water Supply scheme of 1897 to 1903 (through the transition from colonial status to national Federation in 1901). In this nation-building infrastructural scheme, workers occupied transient work camps over the 560 km of the scheme, leaving behind deposits of artefacts such as cans, bottles, and larger structural features. She examined soil chemistry near what she termed 'metal can circles' at some of the campgrounds and suggested that these dumps were the sites for collecting/recycling of the tin-lead solder that sealed the seams of the abundant hole-and-cap food cans. To this end, she did some basic soil geochemical work (Pb), but without tin (Sn) her results were not conclusive.

Bolton's can circles appear to be identical to the cans described below. The present work presents a technique for detecting a process of site modification in deposits of hole-and-cap food cans, applied to can dumps in a campground at Coolgardie (Eastern Goldfields, Western Australia, Figure 1). The process is termed site modification in the sense that the primary distribution of hole-and-cap cans, consumption of the contained food and abandonment of the cans, was followed by a redistribution of the cans and bottles that changed the meaning of the site and the assemblages of artefacts.

Site and artefact modification

When considering the significance of an individual artefact, it is important to consider what goes into the presence of the artefact at the site (Fagan & Durrani, 2016). Firstly, an object must be brought to the site, and it must be useful for people's lifeways. Once on site, an artefact may be abandoned, such as a food can when empty. This contrasts with necessary equipment that can be repaired and equipment that would rarely break (Bateman, in preparation). A pannikin for drinking in a desert is essential and should never be lost (and if made of iron it should not readily break) so pannikins might have been ubiquitous but are rarely found. Cans and bottles form a very high proportion of surviving artefacts because they were very commonly used, once empty

they had no further value, and in the semiarid climate of Western Australia they have a high chance of preservation.

A correct understanding of site modification processes affecting dumps of food cans may profoundly modify the understanding of life in Western Australia during the colonial era of exploration, mining, and the emergence of more settled pastoralism and urbanism. Harrison (2002) reported metal from tin cans and other artefacts being reused as toys, containers, cooking equipment, spear points and lamps, and a flaked stone tool served as a can opener. Munt and Owen (2022) described reuse by Indigenous Australians of glass and ceramic flakes on a site near Sydney. In another situation of marginal living (Dixon et al., 2012), metal and other artefacts on Guam Island were reused by Japanese Army stragglers during the late stages of World War II. Many were American supplies used by the Japanese for their intended functions (mosquito nets), but in the case of cartridge cases they were repurposed as thimbles, and bedsprings became needles. Other examples, more relevant to Coolgardie where there is minimal potable water most of the year, include ship tanks repurposed as water condensers (Bolton, 2009; Pearson, 1992), and kerosene fuel cans and smaller food cans that were systematically perforated for a secondary use, most likely as forms of sieves or filters in mining (Bateman, in preparation). Bell (1998) described the recycling of materials from entire buildings and their structural components as settlements were closed and others opened, and as mine sites or residences were abandoned and later reoccupied (Lawrence, 1995). Fleming (2011) discussed recycling of building materials, with the presence of numerous nails on remote sites possibly indicating the former presence of structures. The mixed technologies of nail manufacture also allowed for interpretations of reuse. Button reuse made the differentiation of male and female clothing and presence uncertain.

COLONISATION, EXPLORATION AND CAMPGROUNDS IN REMOTE WESTERN AUSTRALIA

From the beginning of the British colonial era of Western Australia in 1826, a principal activity was exploration of the mostly arid interior in search of agricultural land and

mineral resources. Cameleers from south Asia (mostly from Afghanistan and British India) were an important element of this exploration period, starting with the expeditions of Peter Warburton in 1873 and Ernest Giles in 1873 to 1876 (Rajkowski, 1987). The first mineral deposits in the colony were found at Northampton in 1851 (lead), and later gold was found in the Kimberley (in the far north) in 1886 and at Southern Cross in 1889 (Geological Survey of Western Australia, 2021), 400 km east of Perth, the Western Australian state capital. Gold was discovered in 1892 in Coolgardie, 600 km east of Perth (Figure 1), and the Eastern Goldfields was opened up from that moment.

Afghan cameleers were critical in the transport industry throughout early Western Australia, from about 1873 to 1920 (Bateman, in preparation; Stevens, 2002). They were usually allocated a campground outside a town site (Jones & Kenny, 2010). These campgrounds were characterised by abandoned food cans. The peak of this activity started in 1892 when Coolgardie first emerged as the first truly major gold mining centre (Stevens, 2002) in Western Australia. Coolgardie became a very important centre at the time: it was gazetted in 1893 (Landgate, 2020), and the railway arrived in 1897 (Austin, 2011). The can deposits are also a feature of all settlements and camps throughout the Eastern Goldfields.

The site for this study is an Afghan campground near Coolgardie. This campground is marked on a Western Australian Government Lands Office cadastral map, UCL 6075 Vacant Crown Land (Landgate, 2021). The campground likely had hundreds of residents at times (Western Australian Registrar General, 1899). The campground lies 2 km east of the Coolgardie town site and has not been recognised, disturbed or studied in any way over the 130 years after initial occupation until now (Bateman, in preparation).

COOLGARDIE CAN DUMPS

The food cans used by this very mobile and transient colonising population were typically hole-and-cap cans, comprising a central hole in the end of the can that was sealed with solder after the can was filled with food, commonly meat and/or

vegetables: (Bateman, in preparation; Bolton, 2009; Burke & Smith, 2004; Stevens, 2002).

Cans found on this campground site date to the period 1892 to 1920. The abundant hole-and-cap cans date to before ~1910 - (Burke & Smith, 2004; Ritchie & Bedford, 1985; Rock, 1993; Rock, 1984). One rectangular hole-and-cap can base (9 cm by 6 cm) had the embossed label and date ‘C.Q.M.E.Co. Ld. QUEENSLAND 1894’. The acronym stands for the Central Queensland Meat Export Company, of Rockhampton and Townsville ("Q.M.E. Co. profit of £33,262," 1942, January 26). The top of another hole-and-cap can (11 cm diameter) bore the embossed text ‘CONRAD'S PURE BEEF DRIPPING’. Conrad’s was an Adelaide (South Australia) smallgoods company advertising between 1895 and 1916 (Advertising, 1895, February 16, 1916, July 6). Sanitary cans broadly date to after 1920 (Burke & Smith, 2004; Busch, 1981) and were very rare in the Coolgardie campground. These observations date the cans in the campground to this period of Afghan occupation and indicate that the campground was largely abandoned by ~1920 due to the decline in gold mining (Bateman, in preparation).

These cans occur in accumulations that can be divided into three classes. A ‘can dump’ is loosely defined as having more than 100 cans that have been piled up, commonly two or more cans deep, so that many were in mutual contact. A very prominent feature of the Coolgardie campground is the presence of several large can dumps, consisting of hole-and-cap cans. In some cases, the dumps were annular in shape, termed circles by Bolton (2009), with a clear central area enclosed by an annulus of piled cans (Figure 88). The can dumps observed at the Coolgardie site were all well-defined accumulations yet not all form such well-defined circular or annular shapes. Almost all the cans have no solder on their seams and the caps lie loose on the ground. These can dumps typically contain no bottles or other artefacts of any type. In contrast, a ‘can scatter’ comprises fewer than 100 cans, which were not piled one on top of the other, and typically were not all in mutual contact. The third class defined, simply termed ‘cans’, refers to a few isolated cans, up to ten, clustered within a few metres’ radius. Two features of ‘can dumps’ – the very high can density and the absence of other artefacts - cannot be readily reconciled with a ‘dine and

dump' manner of can deposition, although the 'can scatters' and 'cans' deposit types appear to be consistent with it.

Figure 88: The can dump at Coolgardie campground that was sampled. Note the size of the dump, the density of piled cans, and the absence of glassware or of any other artefacts. A 1 m ranging pole stands in the centre of the circle.

A CONTEMPORARY ACCOUNT

Bolton (2009) briefly considered solder recycling as a means of producing these can accumulations. This interpretation drew on the personal reminiscences of Facey (2005) and his childhood in Coolgardie between 1905 and 1909, during the peak of

gold mining there. He gave an account of this process of solder scavenging by his family in Coolgardie:

> Aunt and Grandma gathered the tins, then we would gather bushes, scrub and sticks, spread them on the ground, and pile the cans on top. A pile would be left for a few days until the bushes and scrub dried enough to burn. Then we would come back and set it alight. The heat from the fire would melt the solder. Then, when the fire finished burning we used to sieve the ashes and the ground under the ashes, to get the solder. We put these into a bag and took them home. When we had enough Aunt Alice would melt them in an iron pot. Then she would wet a small piece of level ground, and make impressions in the damp soil to the size of a stick of solder, and pour the melted solder into them. When the solder cooled she used to wash it and take it to Kalgoorlie where she got five shillings a pound for it. A fairly large heap of tins would be worth about thirty shillings.

Kalgoorlie is another major mining town in the Eastern Goldfields of Western Australia, 45 km east of Coolgardie.

At this price, the process appears to be a significant means of supplementing family incomes, so it may have been a widespread yet unrecognised practice in rural and remote areas. In the Facey family, adult brothers had left home, and the uncle and cousins were away on woodcutting work, so family members left in Coolgardie supplemented the family income as best they could. His book is the most detailed primary source to document these scavenging activities, despite an extensive search of contemporaneous newspapers, through scans available through the National Library of Australia. Gaston (1984) and Carnegie (1998) also briefly reported the practice in the late nineteenth to early 20th century, presenting it as relatively common. The work reported here was done to test the hypothesis that can dumps were the remains of such solder scavenging.

A SOIL SAMPLING AND GEOCHEMISTRY TECHNIQUE

One circular can dump (Figure 88) in the campground at Coolgardie was selected for a detailed study of soil contamination by Pb and Sn. The dump forms an annulus with an overall diameter of 8 m with a central area (diameter 3 m) clear of cans. The annulus was up to 4 cans deep, or approximately 20 cm.

Methodology

Around this can dump in the Coolgardie campground, four soil samples were collected from inside the can circle and four from outside. For each soil sample, surface gravel coarser than 1 cm was removed, and a 200 g sample was taken and bagged from a small pit less than 5 cm deep. These eight samples were analysed using a portable XRF analyser (X-Ray Fluorescence). Four spots per sample (care had been taken to avoid homogenisation of the sample) were analysed, giving a final total of 32 analyses. The results are presented graphically in Figure 89, and individual analyses are presented in the supplementary data file.

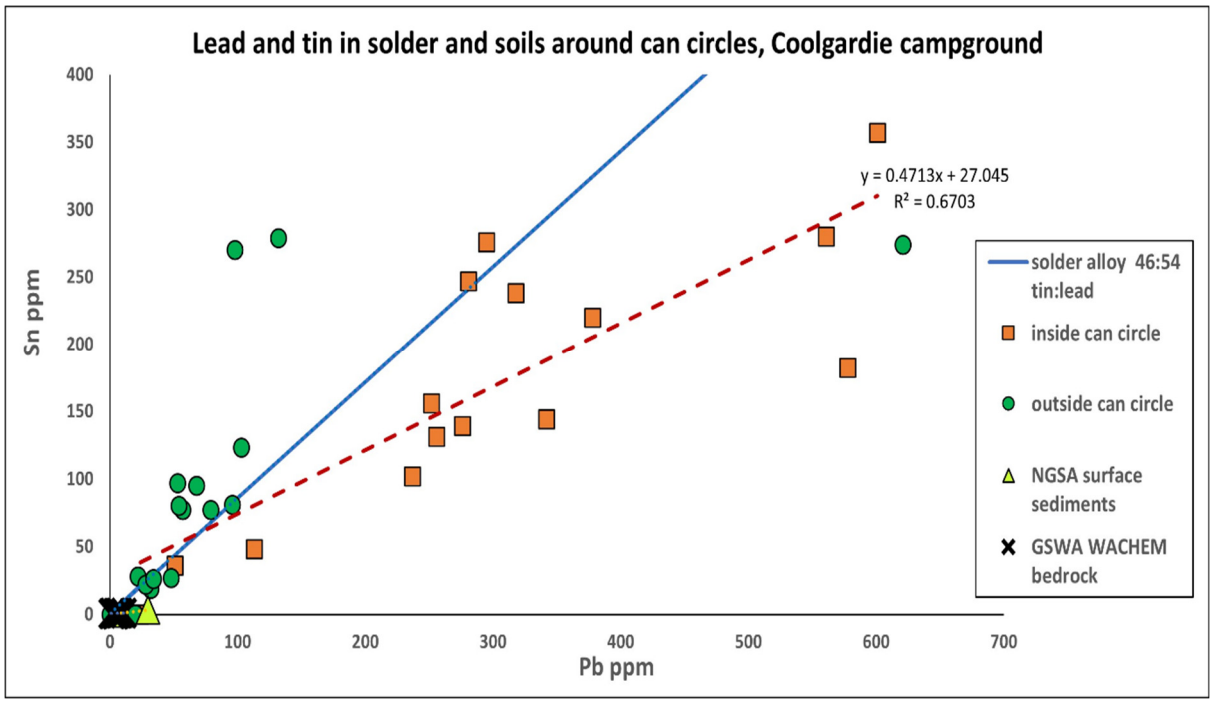

Figure 89: Tin (Sn) and lead (Pb) contents in parts per million (ppm) for soil samples taken from within and outside the can circle of Figure 1. The analyses were carried out using an Olympus Vanta M Series portable X Ray Fluorescence analyser, using 2 x 30 second exposure process. NGSA: National Geochemical Survey of Australia. GSWA WACHEM: Geological Survey of Western Australia WA Geochemistry database.

For purposes of comparison, two soil samples from the National Geochemical Survey of Australia (de Caritat & Cooper, 2011) and 12 local rock samples (Geological Survey of Western Australia, 2022) from its WACHEM geochemistry database are included to give an indication of ‘natural’ or ‘background’ contents of Pb and Sn in the fresh and weathered bedrock, which in this area are basalt and komatiite (komatiite is a type of basalt with very high magnesium, nickel and chromium contents, and very low Sn and Pb). All these soil and bedrock samples are from within a radius of 2 km of the can dump.

The 32 campground soil samples were also searched for small pieces of solder. The soil samples were passed through a 1.18 mm aperture sieve to give a coarse fraction of 1.18 mm to ~1 cm in size. This was rinsed, dried, and searched with a hand lens for metal fragments or solder droplets.

The solder composition

Solder with a composition of 50 per cent Sn and 50 per cent Pb was used on cans of this age (Mebs & Roeser, 1950; Pearson, 2016): solder with 50 per cent Pb or more (wiping or plumbers' solder) solidifies over a range of temperature, and so it can be 'wiped' or smeared to ensure a seal that is airtight for food cans or watertight for water pipes. A Sn/Pb ratio of around 60/40 is more suitable for electrical connections. There is very little compositional data on historical solder.

An example of a hole-and-cap can top with intact solder was tested, to obtain the composition of the solder used on these cans. A hole-and-cap can that was found elsewhere in the Coolgardie campground had a piece of solder 7 mm in diameter still attached to the cap, and this was analysed with the portable XRF analyser. This solder alloy gave a Sn/Pb ratio of 46/54. Analysis only gave a Sn/Pb ratio and not absolute abundance because the relatively wide beam (8 mm) on the portable XRF device also included the iron of part of the can.

Results

These data give a complex pattern, shown in Figure 89. The solder analysed in this study comprised about 46 per cent Sn and 54 per cent Pb, a ratio Sn/Pb=0.85. The soil sample arrays from the 'outside can circle' and 'inside can circle' sets are quite distinct, except for a single datapoint (a sample from 'outside can circle' that plots on the 'inside can circle' array). The greatest difference in the two sets is in total Pb+Sn content: 20 to 411 parts per million in the 'outside can circle' samples, and 24 to 958 parts per million in the 'inside can circle' samples. The Sn/Pb ratio for the 'outside can circle' samples averages 1.19 (ranging from 0.56 to 2.11) – they were Sn enriched or Pb depleted relative to solder. The 'inside can circle' samples had an average Sn/Pb ratio of 0.54 (between 0.3 and 0.9) – they were Sn depleted or Pb enriched relative to solder. The two arrays of soil samples are approximately bisected by the solder alloy line.

With regard to the analyses of samples of bedrock from the Geological Survey of Western Australia geochemical database, Pb and Sn contents in these rock types were very low, up to 11 parts per million and 1 part per million (respectively), and commonly below detection limits: there were 30 other samples from the Geological Survey of Western Australia WACHEM database from this area that were not used because either or both of these two elements were below detection limits. The two National Geochemical Survey of Australia soil samples also had equally low Sn (3 and 1 parts per million) and Pb (30 and 8 parts per million) contents. These samples all plot in the bottom left corner, the origin of the graph.

The Coolgardie campground soil samples collected in this study have Sn and Pb contents over 600 parts per million and 300 parts per million (respectively), far higher than the local soil and rock compositions. The soils, however, also have the high nickel (Ni) and chromium (Cr) levels (not illustrated) to be expected from the local bedrock. With Sn, Pb, Cr and Ni all high, these soil samples were not derived from normal basalts or komatiites, which are well studied in the broader geological province (Bateman et al., 2001; Geological Survey of Western Australia, 2022).

Nonetheless, the Pb and Sn values of soil samples from the campground still seem very low to be analyses of samples that include discrete pieces of solder. The samples were sieved as described above, and a single 2 mm grain was analysed by the portable XRF device to test if it was solder. It was not solder and was most likely a small fragment of bedrock, as indicated by its high Ni and Cr contents. No metallic droplets were identified.

INTERPRETATION

The geochemical data presented here show considerable Sn and Pb contamination of the soils around the can dump. The Ni and Cr levels in the campground soil samples show they were derived from the local bedrock, yet the levels of Sn and Pb were well above any natural contents of these elements in the local bedrock. The levels of Sn and Pb content in the soil samples were geologically inconsistent with their Cr and Ni

contents. The account of Facey (2005) gives an entirely plausible explanation: the campground soils were contaminated with Sn and Pb during solder scavenging by fire.

In early stages of this work, it was speculated that scavenging may have occurred during the Great Depression years from 1929. However, the evidence from datable cans shows that this process took place between 1894 and 1920, when Facey (2005) was living there between 1905 and 1909. There is no evidence for when such scavenging may have ceased, and it may well have continued for as long as there was solder remaining on cans in the campground.

There is no direct forensic evidence for any fires associated with these can dumps as described by Facey, or of cooking fires and the presence of ashes or stone rings (Bateman, in preparation). A century of sun, rain, water flow and termites have eliminated all evidence of any fire, charcoal and of any timber in any form. The best forensic evidence for this fire-based process is the detachment of the hole-in-cap caps, and the fact that many of the cans in the dumps were relatively more rusted than elsewhere.

The data available do not allow for a confident interpretation of the unexpected feature of the double array in Figure 89, but a tentative hypothesis can be made that involves the differing melting temperatures of the two metals. Sn melts at 232 C, whereas Pb melts at 327 C, and temperatures of boiling are 2507 C for Sn and 1740 C for Pb (Royal Society of Chemistry, 2022). For comparison, iron melts at 1535 C. Sn will melt before Pb at the relatively low temperatures of a wood fire (discussed below) and may be more widely dispersed as fine melt droplets or even in vapour form beyond the focus of the fire. The centre of the can circle may have been the fire centre and was depleted in Sn relative to Pb because some of the early-melting Sn was mobilised as fine droplets, widely dispersed in the air movement generated by the fire, and condensed further out from the fire centre where temperatures were lower. Pb was not widely dispersed because it solidified at higher temperatures. Due to this dispersion, the Sn/Pb ratio was lowest nearest the fire and higher further out. According to this hypothesis, Sn and Pb were not added to the soil only as large pieces of molten solder (no pieces were found), but as fine airborne droplets of metal that permeated the soil and solidified within it.

The temperatures attained by wood fires are difficult to estimate, are very variable across zones of the fire and through time, and also depend on the type of wood. Fahrni et al. (2018) showed that temperatures within burning wood plateaued at between 750 C and 950 C after between 11 and 45 minutes. In experimental burns in the field (Werts & Jahren, 2007), temperatures briefly reached nearly 700 C at a soil depth of 1 cm below a fire, and at 1-2 cm 400 C was maintained for an hour.

Proof that fires did reach these temperatures is provided by a salver found in the Coolgardie campground with an embossed Islamic vegetal pattern that can be dated to the period of the Afghan cameleers (Bateman, in preparation). The salver had been perforated, a sample of galena (PbS, lead ore, tested by the portable XRF device) had been melted on it, and the melt had run through the perforations. PbS melts at 1114 C (Royal Society of Chemistry, 2022), so fires did reach these temperatures.

Fire temperatures are consistent with the melting temperatures of Sn and Pb. The ratios of Sn and Pb are broadly comparable with known solder compositions, and most likely represent natural local soils contaminated under the fires that melted the solder. However, no grains or fragments of solder were identified. The interpretation of fine droplets of metal contaminating the soil is consistent with the absence of fragments of metal, and with the double array described above. The simplest and most convincing explanation is that suggested by Bolton (2009), that they represent the residue of solder scavenging works as described by Facey (2005). The effect of bottle collectors can be largely discounted because the can dumps were very concentrated features, they have not been dispersed by a search for bottles.

While the cans were deposited in the Afghan campground, historical accounts show that at least some of the scavenging was done by European Australians: women and children and men. It is not known if Afghans also took part in this solder scavenging, and there is nothing to suggest that this scavenging was resisted by Afghans. The children who collected the melted solder in this way evidently did so in a very efficient process. That this scavenging was done by women and children indicates marginal living by an extended family. This extra income was earned on a gender and age basis in Facey’s family. This could have been no more than one means of earning an income, or as one specifically formulated response to the economic downturn

accompanying the decline in gold mining in the Eastern Goldfields after 1910 (Bateman, in preparation).

Further work

Studies similar to this work should further refine the description and classification of these can dumps, and establish criteria for distinguishing those can deposits that have been processed in this way. It may be considered desirable in some situations to investigate further the details of distinct geochemical arrays from inside and outside a can dump. Scanning electron microscopy with back-scattered electron imagery may identify very fine globules of metal that could texturally suggest a melt or condensation from a vapour - or show other features that refute the idea. More extensive sieving of the soil under and around a can dump may isolate solder fragments. A suite of soil samples along extended radii out from the circle could define the spatial extent of the contamination process.

CONCLUSIONS

Geochemistry of soils from a campground in Coolgardie dating from the Western Australian gold rushes of the 1890s shows a high level of contamination by Sn and Pb. This is readily explicable as the result of the solder scavenging process described by Facey (2005). In his account, the fire was in the centre of the can dump, and the annulus was created by unstacking the cans to sieve the underlying soil to retrieve melted solder. The absence of solder pieces in the soil implies that the whole scavenging process was efficient. The prices suggest it was profitable.

The period of scavenging included the years between 1894 and 1909 (Carnegie, 1998; Facey, 2005; Gaston, 1984). Some cans in Coolgardie can be confidently dated to that period. This period coincides with the decline in gold mining in the Eastern Goldfields, and this means of income supplementation may have been promoted by a

decline in other income. Solder was no longer used to seal cans after around 1920 (Burke & Smith, 2004; Ritchie & Bedford, 1985). It is possible that scavenging also took place later than this period if there were any substantial can deposits left unprocessed and after abandonment of the campground, such as during the Depression years after 1929, but there is no data to substantiate this. This process may have been common in the Eastern Goldfields of Western Australia.

For the archaeologist, these can dumps are important. Some or most of these large, dense concentrations of cans with seams sealed by solder (but now with no solder remaining) were moved around in a site-modifying process. Can dumps may have been assembled from cans collected over a wide area. The commonly complete absence of bottles suggests that they were carefully sorted by the scavengers. Thus, such large can circles and dumps do not represent the *in situ* and unmodified remains of meals. Can scatters, where there were fewer cans not in mutual contact, may be products of primary dining habits, but could also be the product of dismantling a small can fire. Single isolated cans very likely represent brief occupation of a site, and an isolated cluster of a few cans is a testimony to the transient nature of Goldfields life, where people would often go on long expeditions seeking new gold occurrences (Carnegie, 1998; Gaston, 1984).

Another view concerns the sites from which the cans were collected and removed. The cans may have been moved tens or hundreds of metres, or perhaps kilometres in some cases. A site with exclusively sanitary cans may not represent a campground that was first occupied after ~1920, it may have been occupied earlier but cans of that older age had been removed. A site with only bottles may have been dominated by hole-and-cap cans at the time of site occupation. Other sites with signs of human use but with sparse signs of residence, such as a small mine site, could today have very few cans and appear to imply only sporadic occupation, yet it may in fact have had many longer-term residents, with the abandoned cans having been moved in this scavenging process.

A third implication for such site modification relates to dating of site occupation and use. If solder scavenging had taken place during the Depression years after 1929 and after the introduction of sanitary cans, timing relationships could become confused. Reliable dating of solder scavenging would require something specific like a historical

account (Facey, 2005). The primary archaeological meanings of can deposits can only be determined after considering the extent of site modification of this type and distinguishing between classes of can deposits.

Can Circle	Sample	Sub sample	Pb ppm	Sn ppm	Co ppm	Cr ppm	Mn ppm	Ni ppm
internal to can circle	1	1	378	220	142	1279	842	742
internal to can circle	1	2	276	139	510	755	551	499
internal to can circle	1	3	252	156	538	733	591	531
internal to can circle	1	4	342	144	432	646	558	463
internal to can circle	2	1	256	131	545	695	589	495
internal to can circle	2	2	295	276	496	668	538	503
internal to can circle	2	3	237	102	518	680	548	539
internal to can circle	2	4	281	247	570	757	704	713
internal to can circle	3	1	24	0	515	727	518	466
internal to can circle	3	2	113	48	526	740	526	494
internal to can circle	3	3	51	36	511	782	478	437
internal to can circle	3	4	318	238	477	684	507	462
internal to can circle	4	1	561	280	529	683	586	520
internal to can circle	4	2	601	357	533	722	560	466
internal to can circle	4	3	578	182	529	655	579	588
internal to can circle	4	4	621	274	549	734	566	509
external to can circle	1	1	20	0	596	866	590	508
external to can circle	1	2	22	28	536	758	544	462
external to can circle	1	3	32	19	518	747	587	492
external to can circle	1	4	28	22	568	738	562	495
external to can circle	2	1	0	0	605	971	612	493
external to can circle	2	2	103	123	723	999	700	488
external to can circle	2	3	132	279	1030	1261	858	569
external to can circle	2	4	98	270	877	1224	788	584
external to can circle	3	1	68	95	517	808	501	477
external to can circle	3	2	79	77	407	746	453	483
external to can circle	3	3	57	77	513	792	557	485
external to can circle	3	4	53	97	376	674	416	525
external to can circle	4	1	54	80	546	761	608	460
external to can circle	4	2	34	26	526	808	529	527
external to can circle	4	3	96	81	514	732	574	488
external to can circle	4	4	48	27	505	708	549	477

Table 3: Analyses of 32 soil samples in and around a can circle in the Coolgardie campground, ID915. The analyses were carried out using an Olympus Vanta M Series portable X Ray Fluorescence analyser, using 2 30-second exposure process. Ppm means parts per million.