DESKTOP HERITAGE IMPACT ASSESSMENT OF THE PROPOSED FOXWOOD DAM NEAR ADELAIDE, EASTERN CAPE PROVINCE



ACTIVE HERITAGE cc.

FOR: NEMAI CONSULTING

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LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1820 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
IIA	Intermediate Iron Age
ISA	Intermediate Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998 and associated regulations (2006).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

EXECUTIVE SUMMARY

A desktop heritage impact assessment and survey of the proposed Foxwood Dam near Adelaide identified no archaeological sites on the footprint. The area is also not part of any known cultural landscape. However, three old farmsteads do occur in the basin and these may also have associated grave sites. A historical weir and associated pump is situated in the Koonap River. Three bridges cross the Koonap River at various localities in the project area. These may also be older than 60 years and will need mitigation. In addition, the SAHRIS Fossil Sensitivity Map indicate a high level of potential paleontological material on the footprint.

It is suggested that the developers initiate a Phase Two Heritage Impact assessment of the footprint before any development commence. This Second Phase Assessment should include a ground survey by a SAHRA registered palaeontologist in order to produce a detailed paleontological impact assessment (PIA) of the area. It is also suggested that a ground survey be conducted of the footprint by a SAHRA accredited 'built heritage specialist' in order to suggest mitigation measures for the old weir and to assess the provenance and significance of the three historical farmsteads, the associated grave sites, as well as the three bridges in the project area. Although the desktop study found no evidence for any archaeological sites it should nevertheless be noted that the Eastern Cape Province is extremely rich in archaeological relating to the indigenous peoples of the region. The consultant therefore also recommends an archaeological ground survey of the footprint as part of a Second Phase Archaeological Impact Assessment. Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) which, requires that operations that expose archaeological, historical or paleontological remains should cease immediately, pending evaluation by the provincial heritage agency.

1 BACKGROUND INFORMATION ON THE PROJECT

Table 1. Background information

Consultant:	Frans Prins (Active Heritage) for Nemai Consulting			
Type of development:	The Department of Water and Sanitation (DWS) is investigating the feasibility of developing a multi-purpose dam on the Koonap River outside of Adelaide in the Eastern Cape. The proposed site is known as the Foxwood Dam site. Foxwood Dam could provide additional assurance of water supply to improve resilience of domestic water supply within the region. In addition, the project is being considered for implementation as a strategic initiative to mobilize the water resources in the area as a stimulus for socio-economic development in this rural, economically depressed region.			
Rezoning or subdivision:	Rezoning			
Terms of reference	To carry out a Heritage Impact Assessment			
Legislative requirements:	The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and following the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).			

1.1. Details of the area surveyed:

The project area is situated in central part of the Eastern Cape, in the Amatole District Municipality and Nxuba Local Municipality. From a southern direction the proposed dam wall site (coordinates 32°40'30"S, 26°16'0"E) is accessed via the R344 (off the R63). The town of Adelaide and the Bezuidenhoutville Township are located to the south-east of the dam (Fig 1). The project infrastructure is mostly located on privately-owned properties that are primarily used for agricultural practices, except for the land in the south-eastern part of the project footprint which is owned by the municipality.

1.2. Relevant Legislation:

According to the National Heritage Resources Act, 1999 (NHRA) (Act No. 25 of 1999), the heritage resources of South Africa include:

a. places, buildings, structures and equipment of cultural significance;

- b. places to which oral traditions are attached or which are associated with living heritage;
- c. historical settlements and townscapes;
- d. landscapes and natural features of cultural significance;
- e. geological sites of scientific or cultural importance;
- f. archaeological and palaeontological sites;
- g. graves and burial grounds, including-
- i. ancestral graves;
- ii. royal graves and graves of traditional leaders;
- iii. graves of victims of conflict;
- iv. graves of individuals designated by the Minister by notice in the Gazette;
- v. historical graves and cemeteries; and
- vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- h. sites of significance relating to the history of slavery in South Africa;
- i. movable objects, including-
- i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
- ii. objects to which oral traditions are attached or which are associated with living heritage;
- iii. ethnographic art and objects;
- iv. military objects;
- v. objects of decorative or fine art;
- vi. objects of scientific or technological interest; and
- vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

2 SCOPE OF WORK

This study aims to identify and assess the significance of any heritage and archaeological resources occurring on or adjacent to the proposed development. Based on the significance, the impact of the development on the heritage resources will be determined and appropriate actions to reduce the impact on the heritage resources put forward. In terms of the NHRA, a place or object is to be considered Active Heritage cc for Nemai Consulting

part of the national estate if it has cultural significance or other special value because of:

- a. its importance in the community, or pattern of South Africa's history;
- b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- f. its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- h. its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- i. sites of significance relating to the history of slavery in South Africa.

3 BACKGROUND TO HISTORY OF THE AREA

3.1 Archaeology

The footprint is situated within a historical frontier area with a rich past of interaction between different indigenous groups, settlers, and individuals (Peires 1987; Mostert 1992). The pre-colonial archaeological history of the area is less clear, mainly because little field research has been conducted here (Binneman 2011). Several Heritage Impact Assessments conducted in recent years west of the study area provide information on the different stone tool industries found in the area from eroded open sites (Webley, et al. 2009; Halket, D. & Webley, L. 2010; Hart, T. & Webley, L. 2010; Booth 2011). In addition, there are a large number of reports, references and accessioned material in museums of the region and nationally which provide us with a general background. A synthesis of this information was compiled by Robin Derricourt

during the early 1970s and published in his book," Prehistoric man in the Ciskei and Transkei" in 1977. He also conducted fieldwork at Middledrift and Ann Shaw in the near environs of the study area.

From the archival information and limited field work, it is evident that the area has an interesting and complex archaeological past (Binneman 2011). Earlier Stone Age (ESA) hand axes, cleavers and other stone tools, dating to approximately a million or more years old, were found on the slopes of the Thyume River around the University of Fort Hare in Alice (Opperman 1979). The Albany Museum also houses a large collection of ESA material from the Grahamstown area. Large numbers of ESA stone tools were also found at Middledrift (Hewitt 1925; Burkitt 1928). These sites were regarded important at the time and were investigated by the pioneer archaeologist A.J.H. Goodwin (Goodwin & Lowe 1929).

Both locations also yielded Middle Stone Age (MSA) stone artefacts dating between 200 000 and 30 000 years old. MSA artefacts can be found throughout the region, but carry little information because they are not associated with any other archaeological material. Excavations at MSA sites in the close environs to the study area include the well-known type site for the Howieson's Poort Industry (rock shelter with the same name) near Grahamstown (Stapleton & Hewitt 1927) and Oakleigh Farm Shelter near Queenstown (Derricourt 1977).

Later Stone Age open sites, dating to the past 20 000 years are also widely scattered throughout the area (Binneman 2011). The bulk of information for the wider region comes from the Cape Fold Mountains to the south of the study area where several sites were excavated. Among these are Wilton Large Rock Shelter (Deacon 1972), Melkhoutboom Cave (Deacon 1976) and Uniondale Rock Shelter (Leslie-Brooker 1987). Two rock shelters, Edgehill and Welgeluk excavated by Hall (1990) in the Koonap River Valley close to the study area, provide an excellent archaeological record of exclusive subsistence and cultural risk management strategies during the past 5 500 years for Eastern Cape Midlands. Another small shelter at Adam's Kranz in the Great Fish River valley has also been excavated. A hafted arrowhead was recovered from the site (Binneman 1994). Further north in the southern Winterberg Mountains, research at Fairview Shelter (Robertshaw 1984) suggests mobile seasonal movements between the Winterberg and the Fish River regions during the Late Holocene. Derricourt (1977) excavated several mounds at Middledrift and Ann Shaw

where he found a stone tool tradition in the bottom layers which he called the Middledrift Tradition, dating to some 5 000 years old. The origins of the upper deposits of these mounds are not clear, but it would appear that they were associated with pastoralist groups. Thin, fine, mainly undecorated pot shards, a Khoisan burial and complete cow burials found in these mounds, would strongly suggest Khoi occupation. Early European travellers such as Beutler (Theal 1896) also found the Gonaqua Khoi in 1752 living here and along the Keiskamma River towards the nearby coast. The Eastern Cape Midland, Koonap River valley and the adjacent Winterberg Mountains to the north and Cape Fold Belt to the south are also rich in San and Khoisan rock art (Binneman 2011).

Although there are no records of Early Iron Age sites or material from this area, it is possible that such settlements may be present in the region (Binneman 2011; Maggs 1973). Evidence in the form of thick walled well-decorated pot shards is present along the coast (Rudner 1968) and the nearest settlement was excavated just west of East London (Nongwaza 1994). Research by Dr Johan Binneman (1994) in the Great Kei River Valley indicates that the first mixed farmers were already settled in the Eastern Cape A.D. 600 - 700. In the same area at Ann Shaw, Derricourt (1977) also excavated a Late/Historical Iron Age settlement with grain pits and ash heaps. The grain pits were of typical Nguni type; jar-shaped with a small opening. The floor was lined with stones and sealed with a layer of clay (Binneman 2011)

3.2 Historical Period

By the end of the 18th Century the Trekboers who had been steadily moving northwards from the Cape of Good Hope (then under the administration of the Dutch East India Company) had reached the Fish River and the boundary of the Cape Colony. By crossing the Fish River, the Trekboers and Xhosa people who occupied the area north of the river came into conflict. Eight Frontier Wars developed out of this conflict that eventually led to the domination of the Xhosa by the British Colony by the mid-1850s. When the British took over the Cape in the early 1800s, they established a military post on the southern banks of the Koonap River which today is the farm Haddon just to the south of the town of Adelaide. In 1834, a Captain Armstrong established a more established military encampment which he named Fort Adelaide, after the wife of King William IV. The town Adelaide grew out of this encampment. According to the landowner, the name of the farm 'The Glebe' refers to a piece of land

that was given to a church to provide a place where the wagons and carts used by the congregants could be 'parked' during church services. According to another description, 'glebe land' is a piece of land serving as part of a clergyman's benefice and providing income (Beater 2012).

3.3.3 Paleontology

A summary of the paleontology relating to the greater project area has been given by Dr Gess (2012). Accordingly the greater Adelaide area, including footprint, is underlain by sediments belonging to the Balfour Formation (Adelaide subgroup, Beaufort Group, Karoo Supergroup. The flood plains of the Beaufort Group (Karoo Supergroup) provide an internationally important record of life during the early diversification of land vertebrates. Giant amphibians coexisted with diapsid reptiles (the ancestors of dinosaurs, birds and most modern reptiles), anapsids (which probably include the ancestors of tortoises) and synapsids, the dominant group of the time which included the diverse therapsids (including the ancestors of mammals). Rocks of the Beaufort Group provide the world's most complete record of the important transition from early reptiles to mammals. Therapsid diversity, along with that of most plant and animals was decimated during the end- Permian extinction event, a serious contender for the most severe extinction event to affect life on Earth. Ongoing research on the effects of this extinction event is facilitated by the detailed record, afforded by Beaufort Group strata, of life immediately before and after the event, as well as the gradual recovery of life afterwards. The Beaufort Group is subdivided into a series of biostratigraphic units on the basis of its faunal content. Though including the upper Cistephalus Assemblage Zone and lowermost Lystrosaurus Assemblage Zones, the Balfour Formation (Adelaide Subgroup, Beaufort Group, Karoo Supergroup) largely corresponds to the Dicynodon Assemblage Zone. Characterised by the co-occurrence of Dicynodon and Theriognathus this zone demonstrates the Beaufort Groups greatest diversity of vertebrates, including numerous taxa of dicynodont, biarmosuchian, gorgonopsian and therocephalian and cynodont therapsid Synapsida, together with diverse captorhinid Reptilia and less well represented eosuchian Reptilia, Amphibia and Pisces. Glossopteris flora plants and trace fossils are also described. A marked faunal change occurs between the Dicynodon and Lystrosaurus Assemblage Zones approaching the top of the Balfour Formation, corresponding with the major extinction event associated with the Permo-triassic boundary. The Lystrosaurus Assemblage Zone is dominated by

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a single genus of dicynodont, Lystrosaurus, which together with the captorhinid reptile,

Procolophon, characterise this zone. Biarmosuchian and gorgonopsian Therapsida do

not survive into the Lystrosaurus Assemblage Zone, though therocephalian and

cynodontian Therapsida exhibit moderate abundance. Captorhinid Reptilia are

reduced, however an unprecedented diversity of giant amphibians characterises this

interval. The effects of the end Permian extinction event are also evident in the

extensive and important record of fossil plants present in the rocks of the Karoo.

Whereas faunas of Permian age are dominated by a wide range of early seed plants,

the Glossopteridales (which probably include the ancestors of modern gymnosperms

and ultimately angiosperms), this group appears to have gone entirely extinct during

the end-Permian extinction. The rocks of the Karoo provide an unrivalled sequential

record of these changes and the diversification of other groups of plants in the

aftermath of the extinction. The strata of the Karoo basin have also yielded fossil

insects and insect leaf damage of a range of ages (ibid).

BACKGROUND INFORMATION OF THE SURVEY

4.1 Methodology

A desktop study was conducted of all the available archaeological databases. In

addition, the available archaeological literature covering the greater Adelaide area was

also consulted. The SAHRIS website was consulted to obtain background information

on previous heritage surveys and assessments in the area. Arial photographs for the

area was scrutinized for potential archaeological, historical period and grave sites.

DESCRIPTION OF SITES AND MATERIAL OBSERVED

5.1 Locational data

Province: Eastern Cape Province

Town: Adelaide

Municipality: Amatole District Municipality, Nxuba Local Municipality

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5.2 Heritage Sites Located

Although the Eastern Cape Province is exceptionally rich in the occurrence of archaeological sites of various periods and traditions the desktop study could not locate any on the footprint. The area is also not part of any known cultural landscape.

However, a survey of aerial photographs covering the footprint located various historical features or structures that needs additional investigation by means of a systematic ground survey. These include three bridges over the Koonap River, an old weir and associated pump house, three farmsteads and associated graves. These sites need to be assessed during a Phase Two Heritage Impact Assessment by a SAHRA accredited 'built heritage specialist" (Table 2). In addition, the possibility of grave exhumation and relocation needs to be investigated before any development may proceed (Appendix 1).

The SAHRIS Fossil Sensitivity Map indicates that the project area falls within a red sensitivity zone. This indicates that the area is highly sensitive in terms of palaeontology and that a systematic ground survey by a SAHRA accredited palaeontologist will be required before any development my proceed.

6 Table 2. Heritage Site description and context

Site no	Site description	GPS Coordinates	Rating	Mitigation per individual site
Old Weir (Fig 2)	Old Weir across Koonap River. According to local residents of the area it was built around 1901. (Figs 4)		High	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site.
Old Pump house associated with Weir (Fig 2)	Old Pump house situated adjacent to Weir (above) next to the Koonap River. Exact date is uncertain but probably dates to earlier decades of the 20th century.		High	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of

				the site.
Old Farmstead and associated Graves (Fig 3)	Old Farmstead and associated outbuildings. Graves are also associated with the farmstead. These structures appear to be older than 60 years but they need to be further assessed in terms of a ground survey.	S 32° 39 3.14" E 26° 15' 51.64"	Medium to high	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site. The associated graves must also be recorded and provenance. A grave exhumation and relocation
Old Farmstead 2 (Fig 4)	Old Farmstead and associated outbuildings. These structures appear to be older than 60 years but they need to be further assessed in terms of a ground survey.	S 32° 38' 57.71" E 26° 15" 52.59"	Medium to high	process must be initiated (Appendix 1) This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site
Old Farmstead 3 (Fig 5)	Old Farmstead and associated outbuildings. These structures appear to be older than 60 years but they need to be further assessed in terms of a ground survey	S 32° 38' 34.16" E 26° 16' 2.45"	Medium to high	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site
Bridge 1 (Fig 6)	A local bridge crossing the Mankazana River. It is difficult to estimate the age from the desktop	S 32° 39' 12.05" E 26° 16' 20.99"	Medium	This site needs to be surveyed and assessed by a 'built heritage

	study. However, this feature may be older than 60 years and needs to be assessed by a 'built heritage specialist'.			specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site
Bridge 2 (Fig 6)	A local bridge crossing the Koonap River. It is difficult to estimate the age from the desktop study. However, this feature may be older than 60 years and needs to be assessed by a built heritage specialist	S 32° 39' 47.10 E 26° 16' 8.54"	Medium	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site
Bridge 3 (Fig 6)	A local bridge crossing the Koonap River. It is difficult to estimate the age from the desktop study. However, this feature may be older than 60 years and needs to be assessed by a built heritage specialist	S 32° 39' 17.38" E 26° 16' 00.26"	Medium t	This site needs to be surveyed and assessed by a 'built heritage specialist' as part of a second phase heritage impact assessment. This will include detailed mitigation measures before possible destruction or alteration of the site.
Graveyard	Graveyard located within the purchase line.	S 32° 38.450' E 26° 15.828'	High	The graves must be recorded and provenance. A grave exhumation and relocation process must be initiated.

It is noted that the social survey conducted as part of the Socio-Economic Impact Assessment also recorded graves and historical features that are to be inundated.

7 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

A statement of significance relating to the known heritage sites in the project area is summarised in (Table 2).

Table 2. Evaluation and Statement of Significance.

Sig	nificance criteria in terms of Section 3(3) of the NHRA	
	Significance	Rating
1.	Historic and political significance - The importance of the cultural heritage in the community or pattern of South Africa's history.	Potentially yes but needs follow-up investigation
2.	Scientific significance – Possession of uncommon, rare or endangered aspects of South Africa's cultural heritage.	None.
3.	Research/scientific significance – Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.	Potentially yes but needs follow-up investigation
4.	Scientific significance – Importance in demonstrating the principal characteristics of a particular class of South Africa's cultural places/objects.	None.
5.	Aesthetic significance – Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	None.
6.	Scientific significance – Importance in demonstrating a high degree of creative or technical achievement at a particular period.	None
7.	Social significance – Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.	None
8.	Historic significance – Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa.	None.
9.	The significance of the site relating to the history of slavery in South Africa.	None.

8 RECOMMENDATIONS

The desktop heritage impact assessment of the proposed Foxwood Dam strongly recommends a Phase Two Heritage Impact Assessment. This Second Phase should consists of various components. These include the following:

- A Paleontological Impact Assessment (PIA) including a systematic ground survey of the footprint by an accredited palaeontologist.
- An Archaeological Impact Assessment (AIA), including a systematic ground survey, by an accredited archaeologist.
- A Heritage Impact Assessment (HIA) of all historical structures and graves on the footprint. This study must be conducted by an accredited "Built Heritage Specialist". The feasibility of grave exhumation and relocation must also be investigated during this study (Appendix 1)

No development may proceed on the footprint before these Second Phase Studies are completed. Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) which, requires that operations that expose archaeological, historical or paleontological remains should cease immediately, pending evaluation by the provincial heritage agency.

9 MAPS AND PHOTOGRAPHS

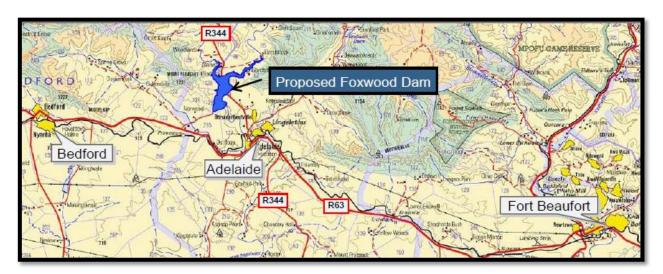


Figure 1. Map showing the location of the proposed Foxwood Dam (Source: Nemai Consulting).



Figure 2. Google aerial photograph showing the location of the old weir and associated pump house adjacent to the Mankazana River



Figure 3. Google aerial photograph showing the location of Farmstead 1 and associated Graves on the footprint.



Figure 4. Google aerial photograph showing the location of Farmstead 2 on the footprint.



Figure 5. Google aerial photograph showing the location of Farmstead 2 and associated outbuildings on the footprint.



Figure 6. Google aerial photograph showing the location of 3 bridges with potential heritage values on the footprint.

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APPENDIX 1

RELOCATION OF GRAVES

Burial grounds and graves older than 60 years are dealt with in Article 36 of the NHR Act, no 25 of 1999. The Human Tissues Act (65 of 1983) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and reburial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

Below follows a broad summary of how to deal with grave in the event of proposed development. If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to. If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law. Once it has been decided to relocate particular graves, the following steps should be taken: Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and can members contact developer/archaeologist/public-relations family the officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law. П Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law. Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members. During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased. An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The

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