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**PHASE 1 HIA/AIA REPORT FOR THE FORT WEST
BULK WATER SUPPLY, FEEDER LINE & RESERVOIR
LOCATED NEAR FORT WEST ON PORTIONS
OF THE FARMS BROEKSCHEUR 318JR & PRETORIA TOWNLANDS 351JR**

For:

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REPORT: APAC015/61

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APELSER ARCHAEOLOGICAL CONSULTING

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Although all efforts are made to identify all sites of cultural heritage (archaeological and historical) significance during an assessment of study areas, the nature of archaeological and historical sites are as such that it is always possible that hidden or subterranean sites, features or objects could be overlooked during the study. APELSER Archaeological Consulting can't be held liable for such oversights or for costs incurred as a result thereof.

Clients & Developers should not continue with any development actions until SAHRA or one of its subsidiary bodies has provided final comments on this report. Submitting the report to SAHRA is the responsibility of the Client unless required of the Heritage Specialist as part of their appointment and Terms of Reference

A handwritten signature in black ink, appearing to be 'A. Pelser', is centered on the page.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Arengo 6 (Pty) Ltd to undertake a Phase 1 HIA (including an archaeological assessment) for the Fort West Bulkwater Supply line, feeder pipe line and establishment of a new Reservoir for the Fort West Township development. The study area is located on portions of the farms Broekscheur 318JR & Pretoria Townlands 351JR, near Fort West in Pretoria.

A number of recent surveys and archaeological work by the author of this report and other heritage specialists provided the background to the archaeology & history of the larger geographical and specific study area. The assessment of the specific study area recorded no sites, features or objects of archaeological & recent historical origin and significance that will be impacted by the proposed development actions, although the closely proximated West Fort Historical Village is located in the area. The report discusses the results of both the background research and physical survey and provides a number of mitigation measures to minimize any possible negative impacts of the proposed development on any unknown heritage resources that could be located here and that was not identified during the assessment.

Based on the findings of the assessment it is recommended that the proposed development be allowed to continue, however taking into consideration the recommendations put forward at the end of the report.

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1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by Arengo 6 (Pty) Ltd to undertake a Phase 1 HIA (including an archaeological assessment) for the Fort West Bulkwater Supply line, feeder pipe line and establishment of a new Reservoir for the Fort West Township development. The study area is located on portions of the farms Broekscheur 318JR & Pretoria Townlands 351JR, near Fort West in Pretoria.

A number of recent surveys and archaeological work by the author of this report and other heritage specialists provided the background to the archaeology & history of the larger geographical and specific study area.

The client indicated the location and boundaries of the study area and the assessment concentrated on this portion.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts

- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- 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 features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4. METHODOLOGY

4.1 Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2 Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all

circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4 Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The study area is located on portions of the farms Broekscheur 318JR & Pretoria Townlands 351JR, close to West Fort near Lotus Gardens in the Greater Tshwane Metropole, Gauteng.

The study area is surrounded by large-scale residential, urban and commercial developments, and as a result the larger geographical area has been disturbed to a large degree in the past. The topography of sections of the study area is fairly flat and open, although it is surrounded to the north by low hills and higher ranges of the Daspoort range of the Magaliesberg, while sections of the Bulk supply and feeder pipe line skirts the hilly terrain to the north of the study area and is therefore more rocky. A section of the Bulk supply line crosses an area that was used in the past for agricultural purposes (ploughing/crop growing) and would therefore have been disturbed to a very large degree, while a section of the feeder line passes through on the northern edge of the historic Westfort Historical Village. From an archaeological point of view the area would have been disturbed to a large degree therefore by recent historical and current developments.

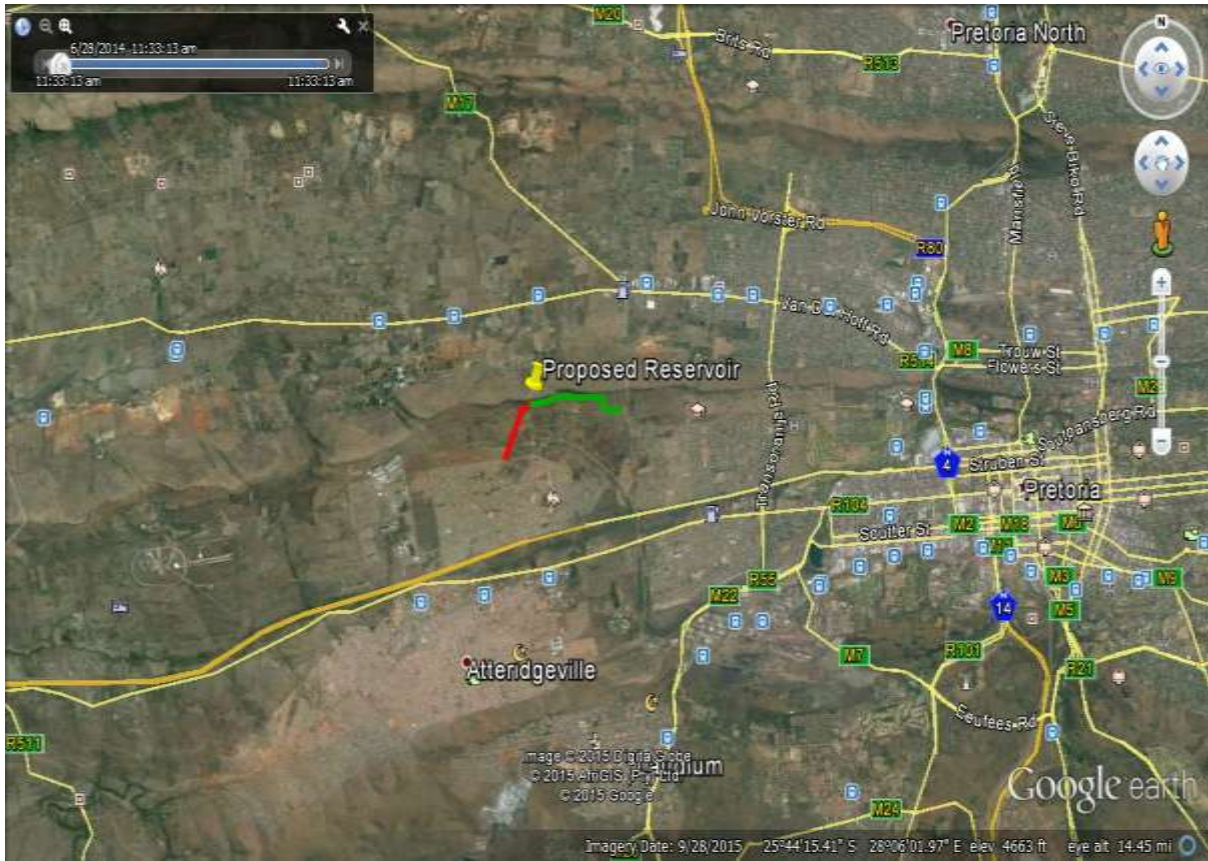


Figure 2: General location of study area (Google Earth 2015).

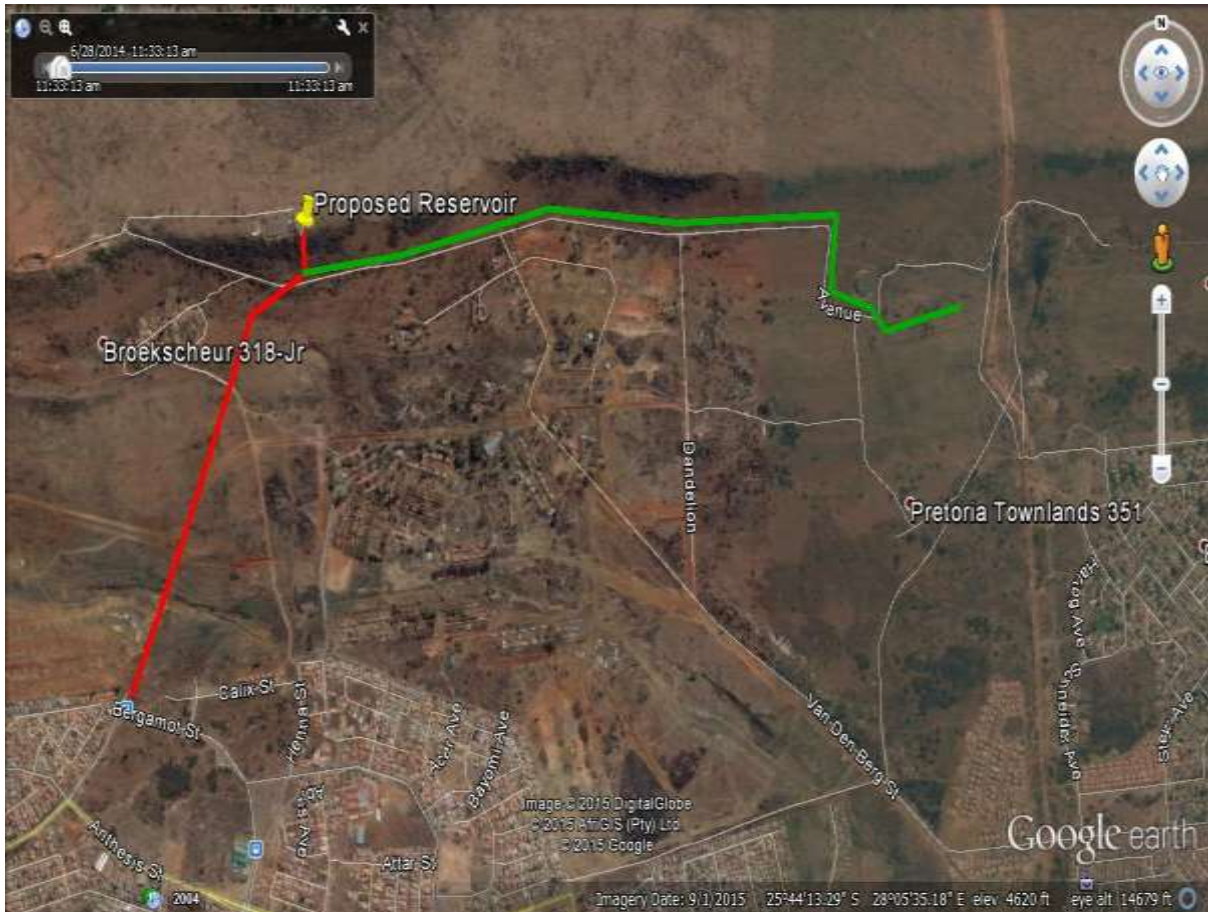


Figure 2: Closer view of study area, with Bulk supply line (red line), Reservoir position & Feeder line in green indicated (Google Earth 2015).



Figure 3: View from the start of the Bulk supply line. The flat open and disturbed nature of the area is visible.



Figure 4: A view of the approximate location of the proposed new Reservoir. The area has been disturbed.



Figure 5: A view of a section of the feeder line route.



Figure 6: A view of another section of the feeder line route. The area has been extensively disturbed as well.



Figure 7: The feeder line route passes by some historical structures (visible in background) that form part of the West Fort Historical Village but has minimal if any impact.



Figure 8: Another view of some historical structures on the feeder line route.



Figure 9: Sections of the feeder line route follows existing routes.



Figure 10: The feeder line route also crosses section of old fields.



Figure 11: The current Water Reservoir in the area. This also impacted and disturbed the area in the past from a Cultural Heritage perspective.



Figure 12: Other impacts on the area include Power lines.

6. DISCUSSION

The Stone Age is the period in human history when lithics (or stone) was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is important to note that these dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

Iron Age people started to settle in southern Africa from around AD 300, with one of the oldest known sites at Broederstroom, dating to AD 470, located south of Hartebeespoort

Dam. Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior Highveld area. The occupation of the region by Iron Age communities did not start much before the 1500s. Due to climatic fluctuations, bringing about colder and drier conditions, people were forced to avoid this area. Following a dry spell that ended just before the turn of the millennium, the climate became better again until about AD 1300. This coincided with the arrival of the ancestors of the present day Sotho-, Tswana- and Nguni-speakers in southern Africa, forcing them to avoid large sections of the interior.

During the early decades of the 19th century, the Tswana- and Ndebele-speakers were dislodged by the Matabele of Mzilikazi. Internal strife caused Mzilikazi, a general of King Shaka, and his followers to move away from the area between the Thukela and Mfolozi River (KwaZulu-Natal). Eventually, after spending some time in the Sekhukhuneland area, followed by a short stay in the middle reaches of the Vaal River, they settled north of the Magaliesberg. One of three main settlements established by them, eKungwini, was on the banks of the Apies River, just north of Wonderboompoort. However, no remains of this settlement have ever been identified.

It was during the Matabele's stay along the Apies River that the first white people entered the area: travelers and hunters such as Cornwallis Harris and Andrew Smith, traders Robert Schoon and Andrew McLuckie, and missionaries James Archbell and Robert Moffat. It is known from oral history that Robert Schoon sent Mzilikazi huge quantities of glass trade beads, rather than the guns that the latter coveted so much.

White settlers started to occupy huge tracts of land, claiming it as farms from the late 1840's onwards. Of these, some of the earliest were Lucas Bronkhorst (Groenkloof), David Botha (Hartebeestpoort – Silverton) and Doors Erasmus (Wonderboom). With the establishment of Pretoria (1850's) services such as roads started to develop. An increase in population also demanded more food, which stimulated development of farming on the alluvial soils on the banks of the Apies River, close to the water.

With the increased fear of British domination, the government of the ZAR had four forts built in the vicinity of Pretoria to protect the capital city in case of war. One of them, known as Fort Daspoortrand or Wes Fort, occurs to the north of the study area (Van Vollenhoven 1999).

In 1898, a hospital, that later was to be called West Fort Hospital, was erected on the eastern boundary of the study area. This hospital was used for the treatment of people suffering from leprosy and was active until the 1960s.

The above section was taken from Van Schalkwyk's January 2012 HIA Report (p.6-7).

Part of the Bulkwater Supply feeder line straddles a section of the associated historical village, but has minimal if any impact on any historical structures or features.

APELSE ARCHAEOLOGICAL CONSULTING was contracted in 2013 by Arengo 6 Consulting Engineers & Project Managers to conduct the Phase 2 Archaeological Investigation of stonewalled Late Iron Age sites located close to close to the area proposed for the Fort West Extension 4 Township Development

The sites were identified and recorded by Dr. Johnny van Schalkwyk as part of an HIA for Seedcracker Environmental Consultants during January 2012. Seven areas containing stone walled settlements dating to the Late Iron Age were identified in the study area. With the possibility of the sites being indirectly impacted upon as a result of the development, it was recommended that they should be archaeologically investigated (mapped, photographed and excavated) prior to development taking place in order to obtain an accurate record of the sites should they be impacted.

An Excavation Permit was subsequently applied for and issued by SAHRA. The final fieldwork included some archaeological excavations at a number of the settlement units, as well the mapping and drawing of the various sites. The results of this work will not be discussed here, suffice it to say that there are therefore known LIA stonewalled settlements present in the larger area within which the study area falls. The sites excavated are situated west of the study area and will not be impacted by the proposed development actions.

Study Area Assessment

The assessment of the study area revealed no sites, features or artifacts of cultural heritage (archaeological or historical) origin or significance that will be impacted on by the proposed development actions. Most of the area through which the Bulk Water Supply line and feeder pipe route runs has been extensively disturbed in the recent past through agricultural activities (ploughing) and recent historical developments such as roads, Power lines and other modern activities such as residential development and the existing West Fort Water Reservoir. The area where the new Reservoir for the Fort West Bulk Water Supply is being proposed to be developed has also been disturbed.

From Cultural Heritage (archaeological & historical) perspective it is therefore proposed that the development be allowed to continue. However, taking into consideration the presence of known LIA stonewalled sites to the west of the study area, as well as the fact that the Historic West Fort Hospital and associated historic houses and other features are situated in close proximity, due care should be taken during the implementation of and development actions taken during the implementation of the proposed Bulk Water Supply, Feeder Line & Reservoir (including construction work) that no historic buildings and other features should be disturbed.

Finally, the very nature of archaeological & historical-archaeological deposits (including cultural material and remnants of structures and features), being subterranean in many cases, could mean that unidentified sites, features and material could be exposed during development work such as trenching. If such is exposed work in the area should be stopped until an archaeologist and/or heritage specialist has investigated the finds and proposed applicable mitigation measures and the way forward.

7. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Phase 1 HIA (including an archaeological assessment) for the Fort West Bulkwater Supply line, feeder pipe line and establishment of a new Reservoir for the Fort West Township development was conducted successfully. The study area is located on portions of the farms Broekscheur 318JR & Pretoria Townlands 351JR, near Fort West in Pretoria.

A number of recent surveys and archaeological work by the author of this report and other heritage specialists provide the background to the archaeology & history of the larger geographical and specific study area. The assessment of the specific study area recorded no sites, features or objects of archaeological & recent historical origin and significance that will be impacted by the proposed development actions, although the closely proximated West Fort Historical Village is located in the area. Some known LIA stonewalled sites are located to the west of the study area, but these sites were archaeologically investigated by the author during 2013 and will not be impacted by the proposed development.

From Cultural Heritage (archaeological & historical) perspective it is therefore proposed that the development be allowed to continue. However, taking into consideration the presence of known LIA stonewalled sites to the west of the study area, as well as the fact that the Historic West Fort Hospital and associated historic houses and other features are situated in close proximity, due care should be taken during the implementation of and development actions taken during the implementation of the proposed Bulk Water Supply, Feeder Line & Reservoir (including construction work) that no historic buildings and other features should be disturbed. The subterranean presence of archaeological or historical sites, features or objects is always a possibility. Should any be uncovered during the development process and archaeologist should be called in to investigate and recommend on the best way forward. The presence of other low stone packed or unmarked graves should also be kept in mind.

8. REFERENCES

Aerial views of study area: Google Earth 2015.

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APPENDIX A
DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B
DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D
PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E
HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.