

**A Pelsers Archaeological Consulting**  
Comprehensive and Professional Solutions for all Heritage Related Matters  
**CK 2006/014630/23** **VAT NO.: 4360226270**

**BASIC ASSESSMENT REPORT FOR AN  
WASTE MANAGEMENT LICENSE APPLICATION,  
DMS POWDERS, MEYERTON  
PORTIONS 4 & 63 OF KOOKFONTEIN 545IQ, GAUTENG**

For:

*Shangoni Management Services (Pty) Ltd  
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**DEA Reference Number: 12/9/L1128/3**

**REPORT: APAC013/57**

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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.**

## **SUMMARY**

A Pelsers Archaeological Consulting (APAC) was contracted by Shangoni Management Services, on behalf of DMS Powders, to undertake a Basic Heritage Impact Assessment for the Waste Management License Application for their Hazardous Waste Storage, Ferrosilicon powder production and the construction of a Wastewater Treatment Works at their Meyerton Plant. The site is located on Portions 4 & 63 of the farm Kookfontein 545IQ.

The site assessment was conducted on the 22<sup>nd</sup> of August and a representative of DMS Powders accompanied the Heritage Expert to the location of the Wastewater Treatment Works at the Plant. No sites, features or objects of any archaeological or historical (cultural heritage) significance were identified during the fieldwork. This document discusses the findings of the on-site assessment and gives recommendations on the way forward.

Based on the results of the assessment there is no objection from a Cultural Heritage point of view to the development and it can therefore continue.

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## **1. INTRODUCTION**

A Pelsers Archaeological Consulting (APAC) was contracted by Shangoni Management Services, on behalf of DMS Powders, to undertake a Basic Heritage Impact Assessment for the Waste Management License Application for their Hazardous Waste Storage, Ferrosilicon powder production and the construction of a Wastewater Treatment Works at their Meyerton Plant. The site is located on Portions 4 & 63 of the farm Kookfontein 545IQ.

The site assessment was conducted on the 22nd of August and a representative of DMS Powders accompanied the Heritage Expert to the location of the Wastewater Treatment Works at the Plant.

## **2. TERMS OF REFERENCE**

The Terms of Reference for the study, based on the methodology employed by Heritage Impact Assessors, were to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the proposed development area;
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 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- 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, including previous heritage studies in the area, was undertaken in order to place the development area in an archaeological and historical context. The sources consulted in this regard are indicated in the bibliography.

### **4.2 *Field survey:***

The assessment was conducted according to generally accepted HIA practices and in this case was aimed at identifying and recording any possible cultural heritage resources that might be located in the development area, assessing their archaeological & historical significance, while taking into consideration the negative impacts of the proposed development on these resources. The location/position of all sites, features and objects are determined by means of a Global Positioning System (GPS) where possible, while 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 the general minimum standards accepted by the archaeological profession. 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 development area is located at the DMS Powders Plant in Meyerton, on Portions 4 & 63 of the farm Kookfontein 545IQ. The location is industrial in nature and as a result has been completely disturbed. If any archaeological or historical (cultural heritage) sites of significance did exist here in the past these would have been disturbed or destroyed to a large degree.

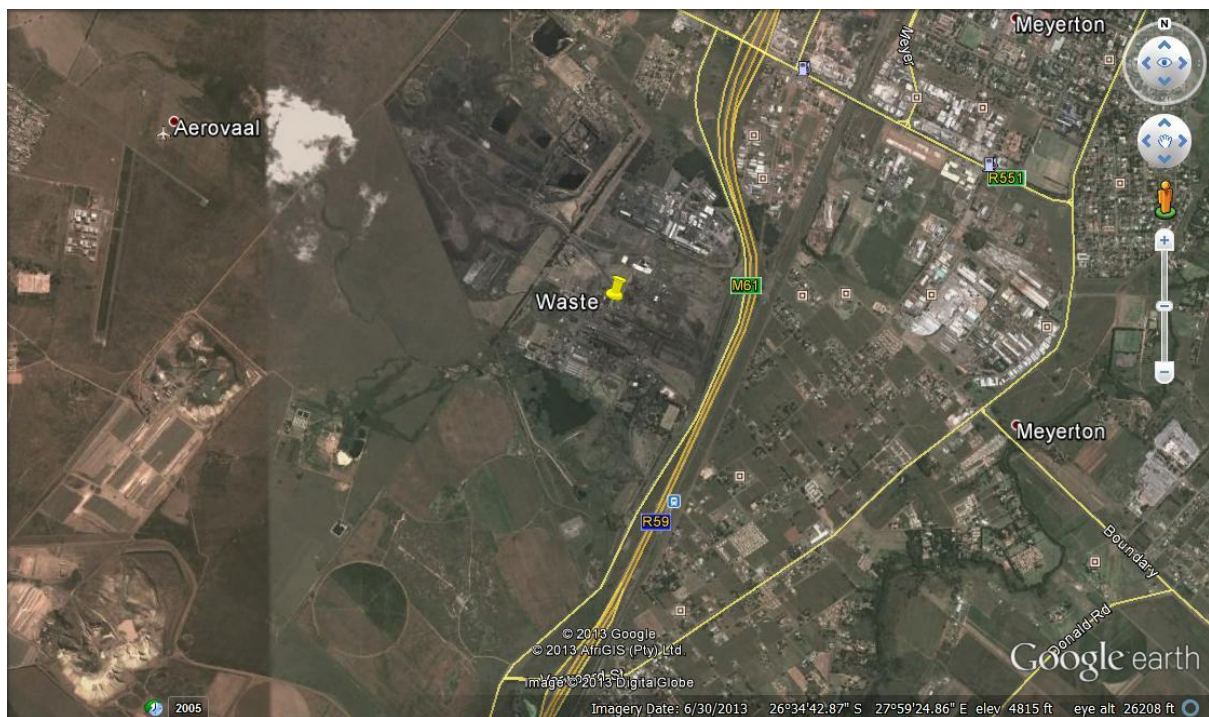


Figure 1: Aerial view of study area location (Google Earth 2013 – Image date 2013/06/30).



**Figure 2: Closer view of site location. Note the industrialized nature of the area.  
Google Earth 2013 – Image date 2013/03/04.**

## 6. DISCUSSION

A short background to the archaeology and history of the larger geographical area will be given to place the site in a cultural historical context.

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided in basically into three periods. It is however important to note that 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).

No Stone Age sites or occurrences (Stone Age artifacts) were identified during the survey. ESA and LSA sites, including rock art (engravings) are known from the larger geographical area near Vereeniging, Vanderbijlpark, Heidelberg and the Suikersbosrand Nature Reserve (Berg 1999: 4-5).

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases in Berg 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.

Once again no Iron Age sites were identified, and if they were present in the past they would have been completely destroyed by development and agricultural activities during the recent past. Late Iron Age settlements are known to occur near Vereeniging and Heidelberg (Berg 1999: 7).

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. The first Europeans to move through or close to the area were the group of hunter and traveler Cornwallis Harris during 1836 (Berg 1999: 13). Meyerton was proclaimed a town in August 1892 (Berg 1999: 21; 147). During the Anglo-Boer War (1899-1902) there were two concentration camps situated near Meyerton – one for Whites and one for Blacks (Berg 1999: 54).

DMS Powders is the world's leading supplier of ferrosilicon. The production of Milled Ferrosilicon (FeSi) in South Africa dates back to 1949 for use in the Dense Medium Separation of diamonds. This was also the early beginning of DMS Powders, trading as Amcor at the time. The production facility relocated to Meyerton in the 1950's with the Atomized Ferrosilicon production facility being commissioned in 1967. In 1975, Amcor merged with SA Manganese and started trading as Samancor. A stand-alone business entity for Ferrosilicon was created in 2000 with the formation of DMS Powders, a division of Samancor. In April 2006, an independent company Dense Media Separation Powders (Pty) Ltd was established under new ownership as a fully Black Economic Empowered company as defined by the South African Black Economic Empowerment Act of 2004 ([www.dmspowders.com](http://www.dmspowders.com)).

The oldest map that could be obtained from the Chief Surveyor General's database ([www.csg.dla.gov.za](http://www.csg.dla.gov.za)) dates to January 1938 (CSG Document 10JIF201) and pertains to Portion 74 of the farm. At the time the farm was numbered 57 and was located in the district of Vereeniging. It also indicates that the whole farm was originally granted to an unmentioned individual on 30/10/63 – probably in 1863. No historical features are indicated on this map.

The site where the new Wastewater Treatment Works will be developed, and for which the application is required, is located close to an existing operation and in an area that has been extensively disturbed over the years and that will be upgraded for the most part. No demolition of any structures will be undertaken, while there are no sites or features of any significance in the area as well. The development from this perspective can therefore continue.

S.G. No. A. 955 / 38  
 Approved W.F.S. van Niekerk  
 Surveyor-General.  
 4-4-1938

SIDES Chain Feet	ANGLES DIRECTION			SYSTEM 1027° COORDINATES	
A B 9182.74	212	47	56	A +11980.88	+23674.42
B C 6754.38	216	32	30	B -16955.12	+15955.62
				C -20976.74	+10528.99
CONNECTIONS.					
E A 6432.44	122	32	34	E +17403.35	+27134.63
A F 8323.54	122	32	34	F +6650.19	+20272.80
G F 6907.25	157	45	59	G +23599.84	+16919.99
C H 5458.47	157	45	59	H +18911.35	+5476.36

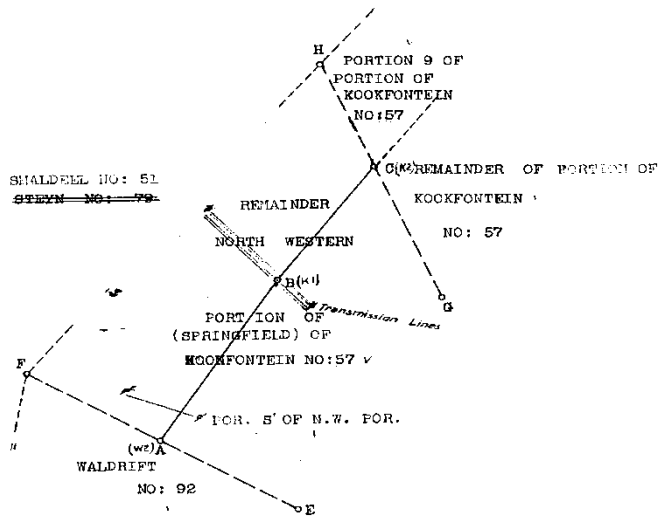
DESCRIPTION OF BEACONS.

- ABC 12" concrete iron pipe centre.
- EH Fencing standards.
- GF Substantial wooden posts
- G Iron fence post.
- G Planted stone monolith

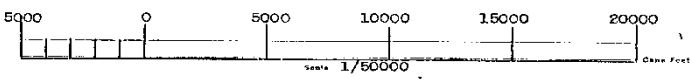
ab represents an overhead electric power Line with underground electric cables vide Plan A.156/37

cd represents a servitude vide Plan A.2540/37

19



Trans geregistreer onder :  
 Now registered under :  
 No. **545**  
 REGISTRASIE AFDELING 1A  
 REGISTRATION DIVISION 1A



The figure LINE ABC represents THE CENTRE LINE OF A SERVITUDE 72.6 FEET WIDE TRAVERSING THE NORTH WESTERN PORTION OF of land being

THE FARM KOOKFONTEIN NO: 57

situate in the DISTRICT of VEREENIGING

PROVINCE of TRANSVAAL

Surveyed in JANUARY 1938 by me

FRAMED FOR THE PURPOSE OF A SERVITUDE.

W.F.S. van Niekerk  
 Land Surveyor.

This diagram relates to Deed of No. _____ dated _____ in favour of _____	The original diagram is No. _____ relating to Deed of Transfer No. _____ dated 30/10/63 In favour of _____ D.B.249 fol.29	S.G. File No. <u>47 31/4/2106/38</u>
		Survey Records No. <b>248-38</b>
Register of Deeds.		Compilation No. <u>516</u>
		Lat. South <u>26°36'</u> Long. East <u>27°59'</u>
		Degree Sheet No. <u>Potchefstroom 516</u>

Published by authority—Groen & Sherry, P.O. Box 8814, Johannesburg—30/8/37.

Figure 3: Old map of farm portion (CSG Document 10JIF201).



**Figure 4: The location of the current Wastewater Treatment Works.**



**Figure 5: The hazardous waste storage tank will be located here.**

## **7. CONCLUSIONS AND RECOMMENDATIONS**

In conclusion it is possible to say that the basic heritage assessment for the DMS Powders Waste Management License Application (WML) for their Hazardous Waste Storage and Wastewater Treatment Works at their Meyerton Plant was completed successfully. The site for the new development is located in an Industrial area that has been extensively developed and disturbed in the past and as a result no sites, features or material of an archaeological or historical (cultural heritage) nature exists here anymore. The area is currently being used for their wastewater treatment and will be upgraded and a new storage tank erected. No demolition of any existing structures will be undertaken.

From a Heritage perspective therefore there would be no objection to the development continuing.

## **8. REFERENCES**

Aerial views of site location: Google Earth 2013 – Image dates 2013/03/04 & 2013/06/30.

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die viernoordelike provinsies**. Pretoria: J.L. van Schaik.

Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa**. Scottsville: University of KwaZulu-Natal Press.

Lombard, M., L. Wadley, J. Deacon, S. Wurz, I. Parsons, M. Mohapi, J. Swart & P. Mitchell. 2012. **South African and Lesotho Stone Age Sequence Updated (I)**. South African Archaeological Bulletin 67 (195): 120–144, 2012.

Republic of South Africa. 1999. **National Heritage Resources Act (No 25 of 1999)**. Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act (no 107 of 1998)**. Pretoria: The Government Printer.

Chief Surveyor General Database: [www.csg.dla.gov.za](http://www.csg.dla.gov.za)

DMS Powders: [www.dmspowders.com](http://www.dmspowders.com).