REPORT

GOSA GGV Pipeline - Baseline Heritage Report

Glencore South Africa

Submitted to:

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2015

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1.0 INTRODUCTION AND BACKGROUND

Golder Associates Africa (Pty) Ltd (Golder) appointed APelser Archaeological Consulting (APAC) to conduct a Phase 1 Heritage Impact Assessment (HIA) for the Goedgevonden Colliery (GGV) Joint Venture (JV) South Witbank Pipeline Environmental Authorization (EA) Application Project. Three pipeline routes were assessed and the most Preferred Option indicated.

A number of known cultural heritage (archaeological and historical) sites exist in the larger geographical area within which the study area falls. Only one site of cultural heritage (archaeological and/or historical) origin or significance was identified during the assessment in the study area. The report discusses the results of the desktop and field assessment and provides recommendations on the way forward.

From a Cultural Heritage point of view the proposed pipeline development can continue in any of pipeline route selected however, the recommendations provided at the end of the report must be considered. This report documents the baseline heritage assessment undertaken for the project.

See APPENDIX A for the full report.

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https://golderassociates.sharepoint.com/sites/129600/project files/6 deliverables/final client deliverables/heritage impact assesmennt/20146454-336169-3_gosa_ggvpipeline_hias_15oct2020.docx

APPENDIX A

Baseline HIA Report – APelser Archaeological Consulting

APELSER ARCHAEOLOGICAL CONSULTING

Comprehensive and Professional Solutions for all Heritage Related Matters

CK 2006/014630/23 **VAT NO.: 4360226270**

PHASE 1 HIA REPORT FOR THE GOEDGEVONDEN COLLIERY JOINT VENTURE SOUTH WITBANK PIPELINE ENVIRONMENTAL AUTHORIZATION APPLICATION NEAR OGIES, MPUMALANGA

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REPORT: **APAC020/77**

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DISCLAIMER:

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

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Golder Associates Africa (Pty) Ltd to conduct a Phase 1 Heritage Impact Assessment (HIA) for the Goedgevonden Colliery (GGV) Joint Venture (JV) South Witbank Pipeline Environmental Authorization (EA) Application Project. Three pipeline routes were assessed and the most Preferred Option indicated.

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CONTENTS

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GGV JV indicated the location and boundaries of the study area and development footprint. The fieldwork and desktop work focused on this land parcel.

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 project;

2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;

3. Review applicable legislative requirements; and

4. Part of the work included undertaking a Desktop Study of available prior heritage studies in the area to see if any cultural heritage resources do or did exist here in the past.

In addition, Golder indicated the following Scope of Work for the study:

Desktop Study:

- Consult national and provincial heritage data bases;
- Brief study of earlier reports, background, and literature for contextual evidence to the study area; and
- Consultation with the South African Heritage Resources Agency (SAHRA).

Fieldwork:

- Reconnoitre area along pipeline route with vehicle where possible;
- Foot survey of sensitive spots and areas for past human interventions in the footprint of the proposed development; and
- Identify and classify; provide a GPS log, describe and photograph heritage resources.

Report compilation:

- Outline/describe types and ranges of heritage resources;
- Coordinates for sites, landscapes, graves, features, etc.;
- Produce layered maps with heritage resources, possible cultural landscapes, sites, graves, etc.;
- Determine significance of heritage resources;
- Establish significance of any possible impacts; and
- Describe/recommend mitigation/management measures for heritage resources.

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act, 1999 (Act No. 25 of 1999) and the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

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^2 or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m^2
e. Any other category provided for in the regulations of the South African Heritage Resources Agency (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 SAHRA. In order to demolish such a site or structure, a destruction permit from the 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, 1983** (**Act No. 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. In this case now new development will take place, except for new proposed borrow pits required as part of the rehabilitation and closure process.

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 project 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 rehabilitation project. 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. The fieldwork was undertaken on the 17th of September 2020.

4.2. 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 various portions of the original farms Klippoortje 32 IS, Springboklaagte 33IS, Goedgevonden 10IS & Zaaiwater 11IS. The area is situated a few kilometers south of the town of Ogies in Mpumalanga.

Three possible pipeline sections were assessed along the proposed 13km South Witbank Pipeline route. The study area has been impacted to a large degree by past agricultural activities (ploughing/crop growing) and more recently by extensive mining operations. The majority of all three routes follow existing roads and servitudes and cross sections of old agricultural fields as well, while most of Route 3 is situated in existing mining areas that have been extensively disturbed. The topography of the study area is in general flat and open with no rocky outcrops or ridges present. Visibility on the ground was good.

If any significant cultural heritage (archaeological and/or historical) sites, features or material existed here in the past it would have been extensively disturbed or destroyed as a result of the mining and agricultural activities that had taken place here in recent years. The results of the desktop work and physical field assessment will be presented in the next sections. Known sites in the larger geographical area, including graves and historical farmsteads, will not be impacted by the proposed development.

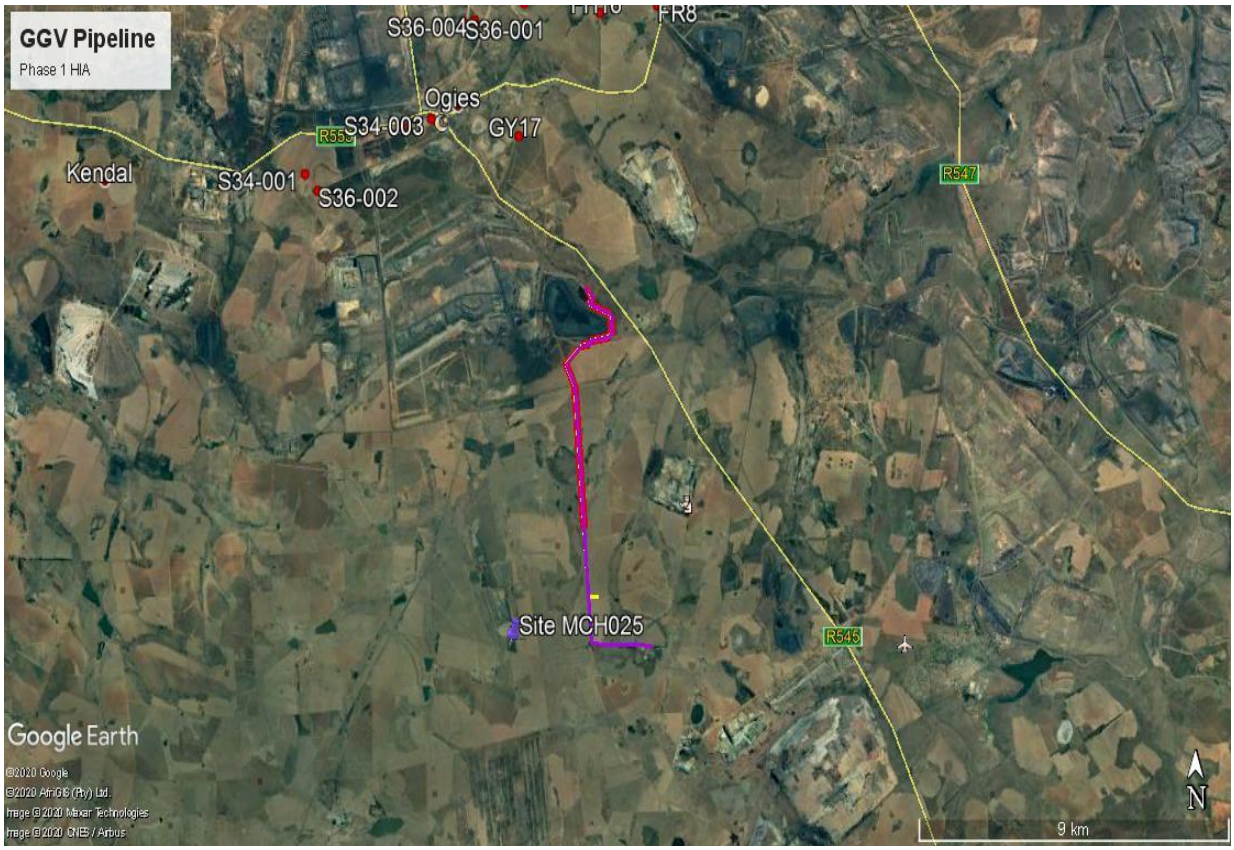

Figure 1: General location of the study area (Google Earth 2020).

Figure 2: A closer view of the study area location showing the three proposed pipeline routes (Google Earth 2020).

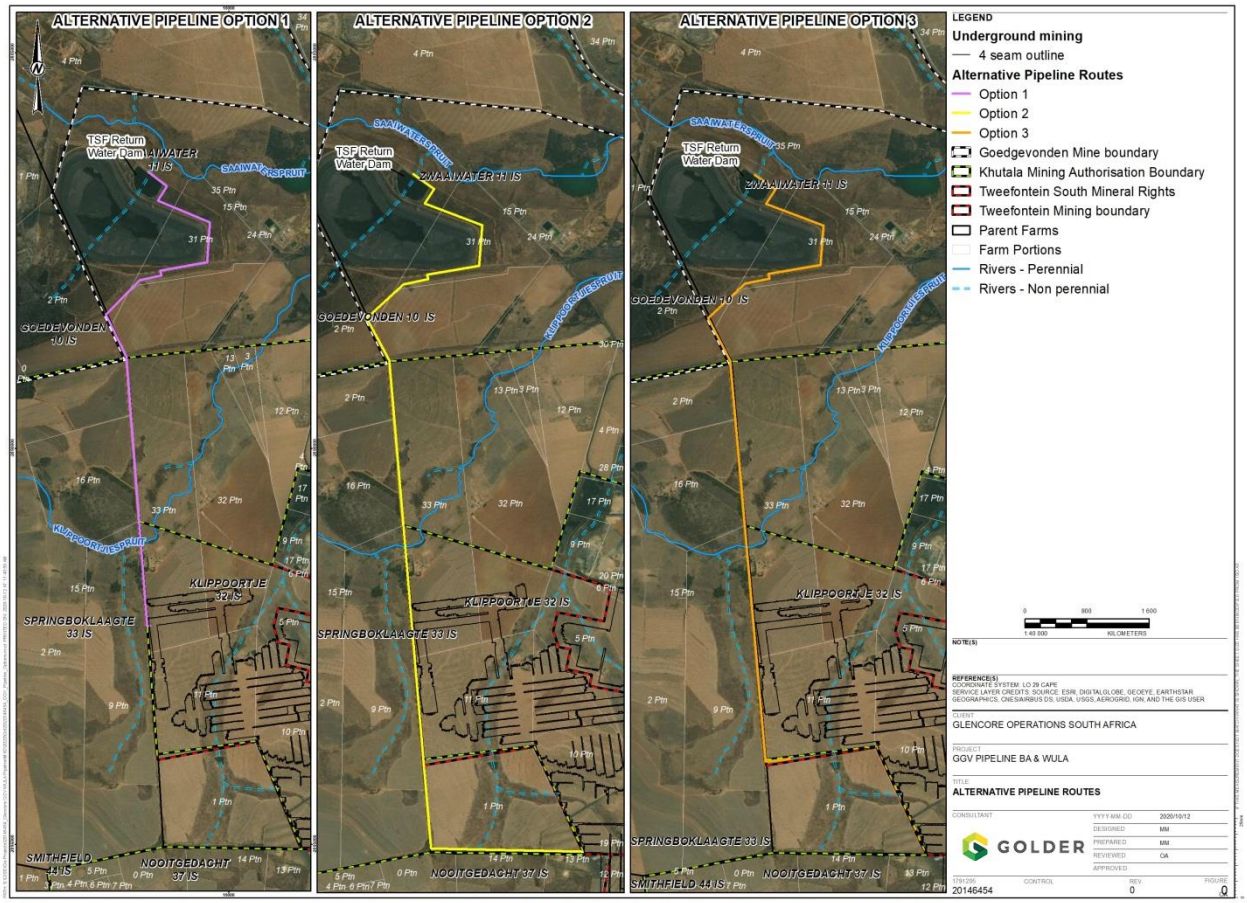

Figure 3: The three pipeline route options. Map courtesy Golder.

6. DISCUSSION

The first part of the assessment comprised the desktop study to determine if any known cultural heritage sites occur in the area of the proposed pipeline routes and if so if there would be any negative impacts on these sites by the pipeline development.

6.1 Document review findings

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 basically be divided 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).

The closest known Stone Age occurrences are Late Stone Age sites at Carolina and Badplaas, and rock painting sites close to Machadodorp, Badplaas and Carolina. Rock art is also found close to the Olifants River and at the Rietspruit near Witbank (eMalahleni) [Bergh 1999: 4-5]. Some individual Later Stone Age artifacts were identified in the larger area during a 2007 HIA for Goedgevonden Colliery, but the location of the site is not indicated (De Jong 2007: 19).

No Stone Age sites or material were identified and recorded during the September 2020 field assessment. If any Stone Age material are to be found these would more than likely be single or small scatters of stone tools in open-air contexts.

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.

Based on Tom Huffman's research LIA sites, features or material that could present in the larger area will be related to the Ntsuanatsatsi facies of the Urewe Tradition, dating to between AD1450 and AD1650 (Huffman 2007: 167) or the Makgwareng facies of the same dating to between AD1700 & AD1820 (Huffman 2007: 179). According to De Jong no Iron Age sites or features were identified during his assessment of the Goedgevonden area and if any did exist here in the past recent farming and mining activities would have disturbed or destroyed any traces (De Jong 2007: 20).

No Iron Age sites, features or cultural material was identified during the assessment of the specific study area.

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 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 earliest European group to move through the larger geographical area close to the study area was that of Schoon in 1836 (Bergh 1999: 13).

Background information on the archaeology and history of the specific study area and larger geographical area is contained in a 2015 report by Celliers, while information on cultural heritage sites located in the study area was also found in the same report. Historians agree that

the earliest Africans to inhabit in the Lowveld in Mpumalanga were of Sotho, or more particularly Koni-origin. According to Bergh no signs of major Stone Age or Iron Age terrains are present in the vicinity of the Ogies area. The Ogies area was vacant of any settlement until the advent of the nineteenth century, when the Phuthing Tribe was prominent in the area to the north thereof (Celliers 2015: 11).

The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. Mzilikazi and his raiders had moved from the Northern Nguni area to the area north of the Vaal River by 1821. It has been recorded that the Ndebeles first attacked the Phuthing tribe, which in turn migrated to the south of the Vaal River and joined groups of Southern Sotho speakers. The Phuthing and Southern Sotho tribes moved westward and northward and started raiding Tswana communities in the surrounding area. The Phuthing were commanded first by Chief Tshane, and later Ratsebe. As the Phuthing under Ratsebe moved eastwards along the Vaal River, they collided with Mzilikazi's Ndebele once more. The Phuthing and other raiding groups were finally taken captive in 1823 by Mzilikazi's men (Celliers 2015: 10-11).

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as in the 1720's. One such an adventurer was Robert Scoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Scoon had gone on two long expeditions in the late 1820s and once again ventured eastward and northward of Pretoria in 1836. During the latter journey, he passed by the area where Ogies is located today (Celliers 2015: 11).

By the late 1820's, a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. As can be expected, the movement of whites into the Northern provinces would have a significant impact on the black farmer - herders who populated the land. By 1860, the population of whites in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed (Celliers 2015: 11-12).

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intensions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history. During the British march into the Transvaal between February and September 1900, several troops passed by the area where Ogies is situated today. The battalions of Lieutenant

Generals J. French, R. Pole-Carew and F. Roberts all travelled close by the Witbank area and through Middelburg. A railway line ran along this route at the time (Bergh, 1999: 51). At the time of the War, two railway stations were located in the vicinity of the Witbank/Ogies area, and close to each a black concentration camp had been established.

At Middelburg, about 20 kilometers to the east of Witbank, one white and one black concentration camp was also set up. No skirmishes took place in the direct vicinity of the Ogies area (Celliers 2015: 12-13). Ogies is a small town situated 27 km south of Witbank in the Mpumalanga province. It is surrounded by coal-mines. The name is derived from the farm Oogiesfontein (fountain with many "eyes") on which the railway station was built. According to Celliers the name of the town was originally misspelt as Oogies, but corrected by the Place Names Commission in 1939. Ogies is on the link railway from Springs to Witbank and is the junction for the Broodsnyersplaas, where a large power station was erected (Celliers 2015: 17).

According to De Jong many of the farms in the area were established in the 1870's and that some of the graveyards located here attest to the practice of employing local African communities as farm laborers. The town of Ogies developed around the railway station which was built on the farm Ogiesfontein in 1928 (De Jong 2007: 21).

Many sites, structures and features dating to the recent historical period have been identified in the larger geographical area, including homesteads, farm laborer remains and graves (De Jong). None of these will however be impacted by the proposed Pipeline development. Some of the earlier identified grave sites formed the focus of later grave relocation projects.

One historical site was identified during the September 2020 assessment. The site will be discussed in the next section.

6.2 Results of the September 2020 Field Assessment

Pipeline Routes 1-3

Pipeline Route 1 mostly follows an existing road, with a small section crossing an old ploughed agricultral field. A part of this route is located in existing mining areas.

The only site found in the study area during the assessment is located close to a section of this route. The site is situated near the Vosbreet Boerdery on the farm Klippoortje 32IS. The site consists of the remains of old farm-related structures and probably dates to between the early and mid-20th centuries. Although not located directly on the Pipeline route, care should be taken that the site is not negatively impacted by the proposed development activities. A buffer zone of 20m from the outer boundary of the site should be implemented and no development should be allowed in this zone. If the site can not be avoided then a detailed Phase 2 Heritage Assessment should be undertaken during which the structures located here are studied, mapped and drawn before a Demolition Permit is applied for from SAHRA.

GPS Location of Site 1: S26 08 00.21 E29 05 16.31
Cultural Significance: Medium
Heritage Significance: Grade III: Other Heritage resources of Local importance and therefore worthy of conservation.
Field Ratings: General protection B (IV B): Site should be recorded before destruction (Medium significance)
Mitigation: See Above Recommended Mitigation Measures.

Route 2 mostly follows an existing road and road servitudes. Part of the route also crosses existing agricultural fields. No sites, features or material of any cultural heritage origin or significance were identified on this route.

Route 3 also follows existing roads and a section crosse old field as well. Most of the route is located in mining area that has already been extensively disturbed, with the line skirting the existing GGV TSF. Prior to mining activities in the area it is also evident that most of the area where this route is proposed was located in extensively farmed area (See Figure 7 below). If any sites, features of material of cultural heritage signigicance or origin did exist here in the past it would have been disturbed or destroyed to a large degree.

No sites, features or materal of any cultural heritage (archaeological and/or historical) origin or significance were identified on Pipeline Route 3.

Figure 4: Closer view of a section of the Pipeline Route (Google Earth 2020).

Figure 5: Closer view of another section of the Pipeline Route. The location of Site 1 is shown (Google Earth 2020).

Figure 6: Closer view of the location of Site (Google Earth 2020).

Figure 7: Closer view of another sections of the three line options (Google Earth 2020).

Based on the desktop work and the physical assessment undertaken, from a Cultural Heritage point of view, it is therefore recommended that the proposed GGV South Witbank Pipeline Route Project be allowed to continue.

Any of the three route options can be used, taking into consideration the recommendations related to the Site 1 historical farmstead and related structures located close to a section of the line.

It should however be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when rehabilitation and development activities commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

7. CONCLUSIONS & RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Golder Associates Africa (Pty) Ltd to conduct a Phase 1 Heritage Impact Assessment (HIA) for the Goedgevonden Colliery (GGV)

Joint Venture (JV) South Witbank Pipeline Environmental Authorization (EA) Project. Three pipeline routes were assessed and the most Preferred Option indicated.

A number of known cultural heritage (archaeological and historical) sites exist in the larger geographical area within which the study area falls.

The only heritage site found in the study area during the assessment is located close to a section of Pipeline Route 1. The site is situated near the Vosbreet Boerdery on the farm Klippoortje 32IS. The site consists of the remains of old farm-related structures and probably dates to between the early and mid-20th centuries. Although not located directly on the Pipeline route, care should be taken that the site is not negatively impacted by the proposed development activities. A buffer zone of 20m from the outer boundary of the site should be implemented and no development should be allowed in this zone. If the site cannot be avoided then a detailed Phase 2 Heritage Assessment should be undertaken during which the structures located here are studied, mapped and drawn before a Demolition Permit is applied for from SAHRA.

Based on the desktop work and the physical assessment undertaken, from a Cultural Heritage point of view, it is therefore recommended that the proposed GGV JV South Witbank Pipeline Project be allowed to continue. All three of the proposed routes can be used, taking into consideration that the recommendations regarding the heritage site found during the assessment should be adhered to.

Finally, it has to be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

8. REFERENCES

Study Area Location, Footprint & Pipeline Routes: Google Earth 2020.

Pipeline Options Map: Courtesy Golder Associates.

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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.

APPENDIX F: PHOTOS

Figure 8: A view of the start of Pipeline Route 1 towards the eastern section.

Figure 9: A view of a section of the eastern part of Route 1.

Figure 10: A view down another part of the eastern section of Route 1.

Figure 11: A part of the eastern section of Route 1 crosses old ploughed fields.

Figure 12: A view down a section of Pipeline Route 1 towards the north.

Figure 13: Another section of Route 1 to the north.

Figure 14: A small section of Route 2 crosses over old fields towards the east.

Figure 15: A view down a section of Route 2 towards the north.

Figure 16: One of the old structures (Site 1) close to Pipeline Route 2.

Figure 17: More of the structures at Site 1.

Figure 18: A section of Pipeline Route 2 at a stream crossing.

Figure 19: A section of Pipeline Route 2 crossed over old fields towards the mining area In the north.

Figure 20: A view towards the mining area in the north where Route 2 and Route 3 junctions.

Figure 21: A section of Pipeline Route 3 also crosses old farming areas.

Figure 22: Most of Route 3 crosses old farm land and is located in current mining area.

Figure 23: Pipeline Route 3 follows exsistin routes and skirts on of GGV's exsisting mine dumps.

APPENDIX B

Document limitations

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APPENDIX C

Appendix 6 of the EIA Regulations

APPENDIX 6 OF THE EIA REGULATIONS

Where applicable, this baseline report has been written in compliance with Appendix 6 of the EIA Regulations.

Section	Requirements	Section addressed in report
1.(1)	A specialist report prepared in terms of these Regulations must contain	
(a)	Details of	Page i, of Appendix A
(i)	the specialist who prepared the report; and	
(ii)	the expertise of that specialist to compile a specialist report including a curriculum vitae	
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority	
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	Sections 1 and 2 of Appendix A
(cA)	an indication of the quality and age of base data used for the specialist report;	Section 4.2, Section 6 of Appendix A
(cB)	a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 6.2 of Appendix A, results of field assessment Section 3 of Appendix A, legislative requirements
(d)	the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 4.2 of Appendix A
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 4 of Appendix A
(f)	details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 6 of Appendix A
(g)	an identification of any areas to be avoided, including buffers;	Section 6 of Appendix A
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	This will be completed in the impact assessment report.
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Limitations to the field assessment are highlighted in Section 6.2 of Appendix A
(j)	a description of the findings and potential implications of such findings on the impact of the proposed	

Section	Requirements	Section addressed in report
	activity (including identified alternatives on the environment) or activities;	Not applicable at this stage. This will be addressed in the impact assessment report.
(k)	any mitigation measures for inclusion in the EMPr;	
(l)	any conditions for inclusion in the environmental authorisation;	
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	
(n)	a reasoned opinion—	
(i)	(as to) whether the proposed activity, activities or portions thereof should be authorised;	Not applicable at this stage. This will be addressed in the impact assessment report.
(iA)	regarding the acceptability of the proposed activity or activities; and	
(ii)	if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Not applicable at this stage. This will be addressed in the EIA process for the project
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	
(q)	any other information requested by the competent authority.	None, thus far.
2.	Where a government notice *gazetted* by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	Noted

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