

1925-1929	<p>The platinum discovery made by Hans Merensky led to a platinum boom in the South Africa. This saw the floating of more than 50 mining companies in the Rustenburg and Lydenburg districts. Some of the smaller concerns closed down reasonably quickly (Wagner, 1973).</p> <p>Similarly, the identification of the Bushveld Complex meant that the surroundings of the study area were increasingly prospected and mined. One of the most significant mining companies from this area was Potgietersrust Platinums Limited. Registered on 27 August 1925, the company was established with capital to the value of £1, 962,500 in 7.85 million shares valued at 5 shillings each. The company was originally established to work the platinum deposits near Mokopane, but between 1926 and 1929 also acquired the Rustenburg properties of the Premier Rustenburg Platinum Limited, Steelpoort Platinum Syndicate Limited and Eerstegeluk Platinum Mines Limited. The closest property of Potgietersrust Platinums Limited to the present study area, was the farm Schilpadnest 385 KQ (South African Mining Yearbook, 1942) (Wagner, 1973), located 34.9km north-east of the study area.</p>
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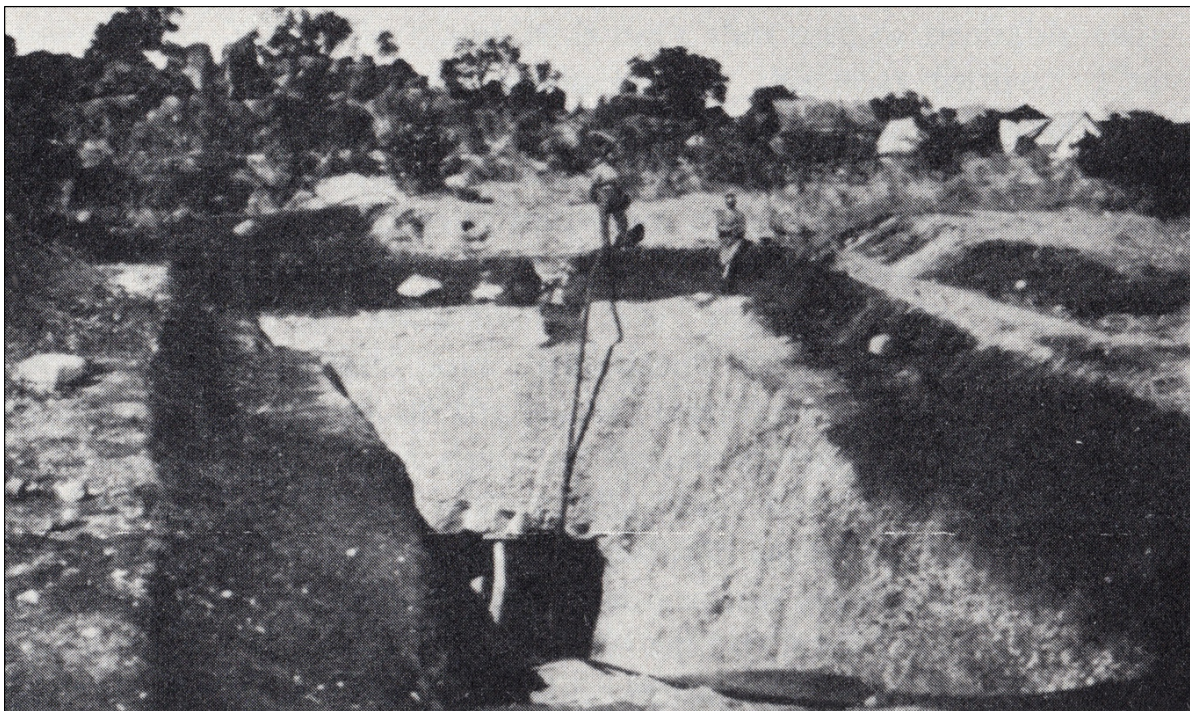


Figure 12 – Historic photograph taken during the late 1920s, depicting the opening of No. 2 Incline Shaft on the Merensky Horizon on the farm Schilpadnest 385 KQ (Wagner, 1973:128).

April 1929	<p>In April 1929, E.R. Schoch published his “Notes on the Nickel and Copper Deposits in the Norite Complex of the Pilansberg, District Rustenburg, Transvaal” in the Journal of the South African Institute of Mining and Metallurgy. This, and other attempts at prospecting and exploring the mineral wealth of the areas to the west of the Pilanesberg, would have stimulated the mineral development of the surroundings of the study area.</p>
Early 1930s	<p>In 1930 Iscor decided to mine the iron ore discovered by Williams just over a decade before. Iscor obtained the discoverer rights from Dunswart Iron and Steelworks Limited, which acquired the discoverer rights from a Mr. Delfos, who in turn bought them from the discoverer, J.H. Williams (Coetzee, n.d.).</p>

C.J.N. Jourdan of the Department of Mines was delegated to join Iscor and manage the commencement of the first iron ore mining activities in this area. Accompanied by a Messrs. Sheller and Sacht, who were respectively appointed as mine manager and mine secretary, Jourdan arrived at the proposed mine on 30 November 1930 (Coetzee, n.d.).

Prospecting activities commenced in March 1931. Initially, the mine workers established themselves in tents on the northern slope of the mountain. However, the tents were eventually replaced by shacks and with time houses were also built on this same end of the mountain. It was here, on the same northern slope of the mountain, that the present-day town of Thabazimbi was eventually formally established (Coetzee, n.d.).



Figure 13 – Two early photographs of Thabazimbi. The top image depicts the five first houses built here, whereas the bottom image depicts the town’s old northern entrance (Coetzee, n.d.:44).

<p>15 January 1938</p>	<p>Rustenburg Chrome Mines (Pty) Ltd was established on this day and at the time held options on the farm Vogelstruisnek 173 JP (South African Mining Yearbook, 1941/2). This farm is situated roughly 34.7km south the present study area.</p>
<p>1946</p>	<p>Northam was laid out by E.H.J. Fulls on the farm Leeukoppie and the town was formally proclaimed in 1946. This farm and a number of surrounding ones were at the time owned by one man, H. Herd. He had purchased these farms from British soldiers, who had originally received the farms at the end of the South African War. As owner of the farm</p>

	where the new town was to be established, Herd was allowed to name the newly established town and decided on the name Northam in Devonshire, England (Erasmus, 2004). Northam is located 33.9km east by south-east of the present study area.
4 May 1953	Although mining houses had been built from the early 1930s onwards at the northern foot of the mountain, the town of Thabazimbi was only officially proclaimed on 4 May 1953. The town's name is derived from the isiZulu word for 'iron mountain' (Erasmus, 2004).
6 December 1977	The South African government granted independence to Bophutatswana on 6 December 1977 (www.wikipedia.org).

5.2 Previous Heritage Impact Assessment Reports from the Study Area and Surroundings

An assessment of the South African Heritage Resources Information System (SAHRIS) of SAHRA was undertaken to establish whether any previous archaeological and heritage impact assessments had revealed archaeological and heritage sites within, and in close proximity, to the present study area footprints. This assessment has revealed that only a small number of previous reports had been undertaken in the surroundings of the present study areas, whereas no previous reports were found which incorporated sections of the present study area. The previous studies from the surroundings of the study area that could be located on the SAHRIS system, will be briefly discussed in chronological order below.

- VAN SCHALKWYK, J. 1996. Kgatla Iron Age Site: Exhibition Proposal and Management Plan. *An unpublished report by the National Cultural History Museum*. The report is not a heritage impact assessment, but was compiled to propose management measures for a stonewalled site associated with the Bakgatla-ba-ga-Kgafela. This site is located on the farm Droogesloot 285 KP, which is located 3.5km south by south-east of the present study area. The following interesting statement is made by author (1996:3) "...local oral tradition also claim that just to the north of this particular site, the Kgatla fought a battle with the Ndebele of Mzilikazi. In this battle, the Kgatla apparently succeeded win the Ndebele, thereby forcing them to leave the area. This site was not visited and it is doubtful if any material remains would be found here." According to the oral history referred to by Van Schalkwyk (1996), a battle was fought between the Bakgatla and the Matabele north of the site. This would place this battle a short distance south-east of the present study area.
- Coetzee, F. 2008. Cultural Heritage Survey of PPC Dwaalboom. *University of South Africa*. The study area for this 2008 project comprised portions of the farms Dwaalboom 217 KP, Parys 226 KP, Amsterdam 227 KP, Beaufort 228 KP, London, 229 KP,

Schoongezicht 238 KP, Jakhalskraal 239 KP, Gansvley 240 KP and Tusschenkomst 241 KP. This means that the 2008 study area was located immediately north and north-west of the present study area. A total of 34 heritage sites were identified within this 2008 study area, namely 15 historical houses and structures, one historic Indian shop, four modern structures, four dressed stone reservoirs, nine graves and cemetery sites as well as one site containing a small Middle Stone Age lithic scatter.

5.3 Archival and Historical Maps

Sections of the First Editions of the 2426CD and 2426DD Topographical Maps are depicted in **Figure 14**, **Figure 15**, **Figure 16** and **Figure 17** below. These map sheets were based on aerial photography undertaken in 1963, were surveyed in 1967 and drawn in 1968 by the Trigonometrical Survey office. Historic map sheets such as these are utilised to identify any features or sites which may be considered of archaeological or heritage value.

Several structures such as dams, windmills and “huts” were detected within the overall mining right area. However, none of these identified features are depicted within or near the proposed prospecting drill site. As a result, these features will not be discussed in any further detail.

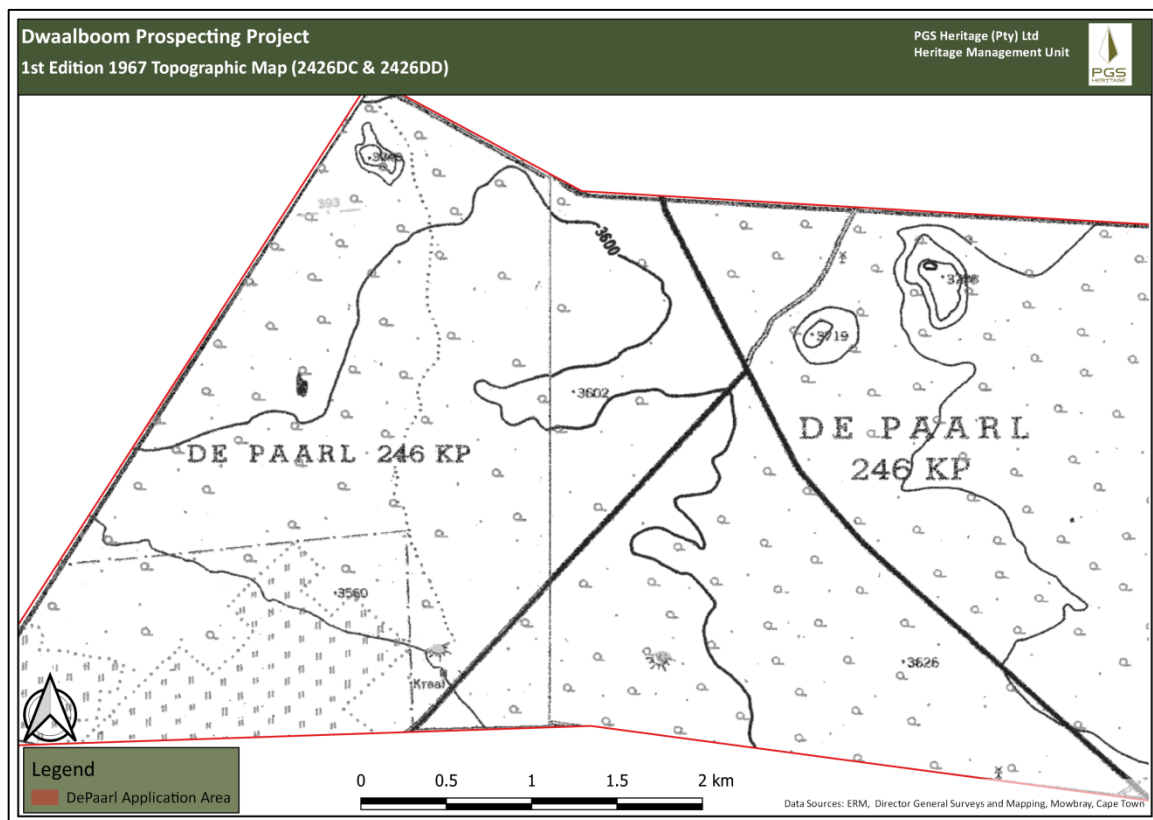


Figure 14 – Sections of the First Editions of the 2426DC and 2426DD map sheets are depicted here. These sheets were surveyed in 1967. The western section of the study area is shown.

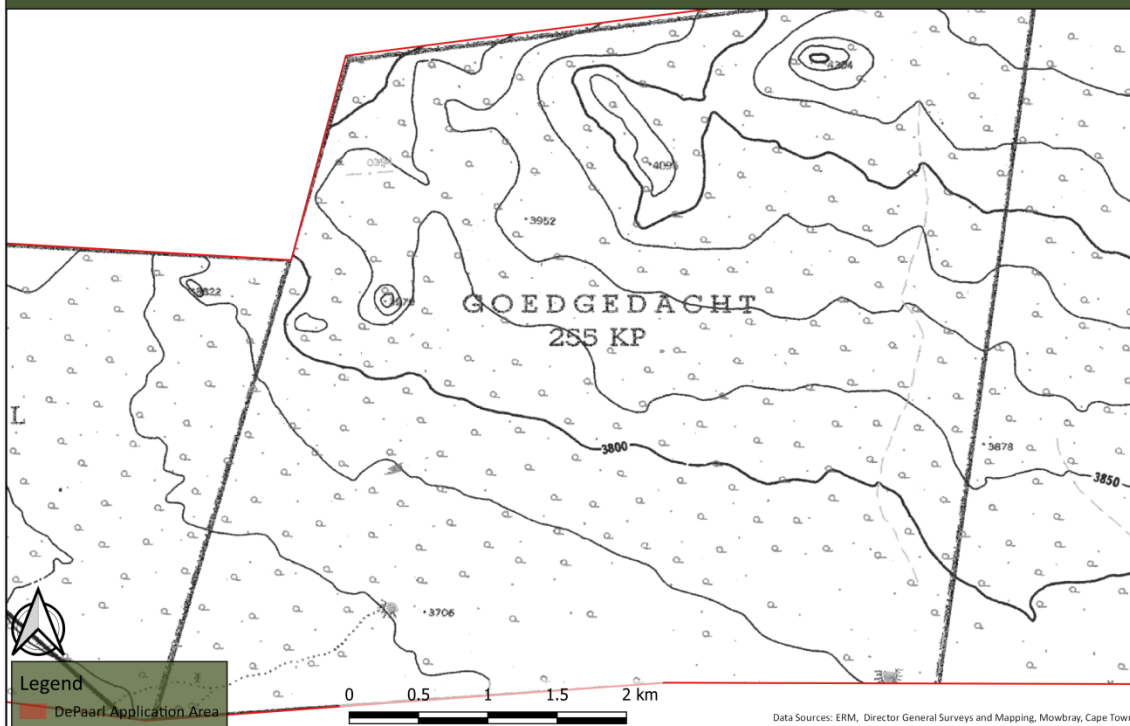


Figure 15 – Sections of the First Editions of the 2426DC and 2426DD map sheets are depicted here. These sheets were surveyed in 1967. The central section of study area is shown.

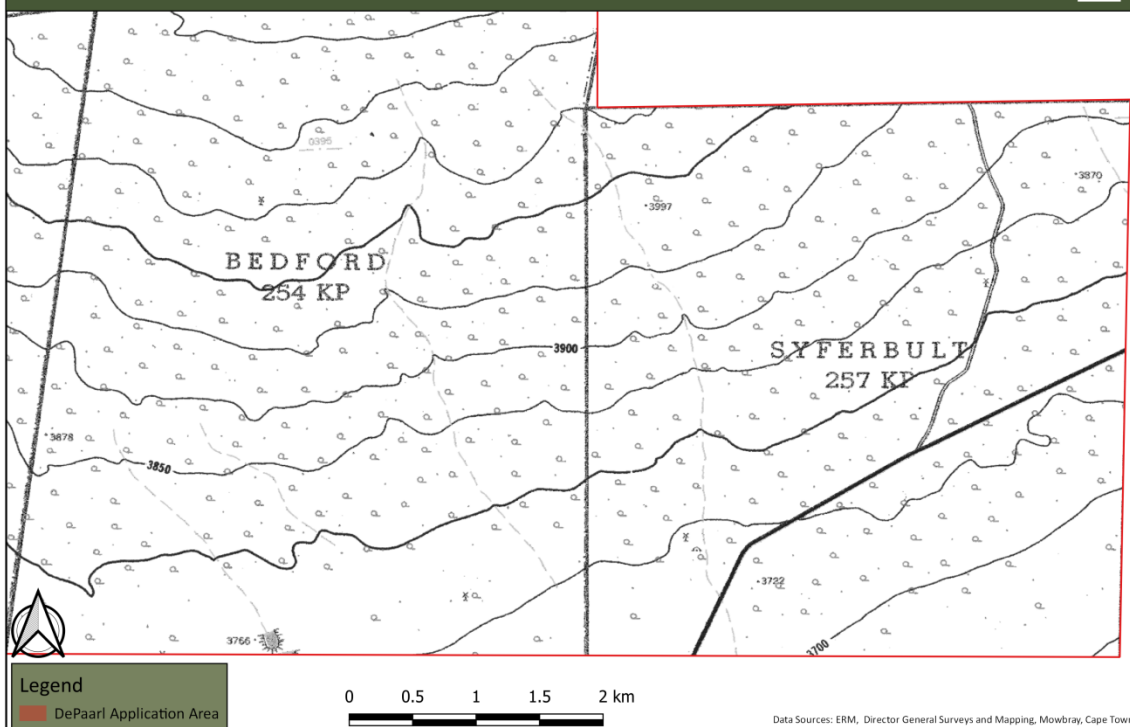


Figure 16 – Sections of the First Editions of the 2426DC and 2426DD map sheets are depicted here. These sheets were surveyed in 1967. The eastern section of the study area is shown.

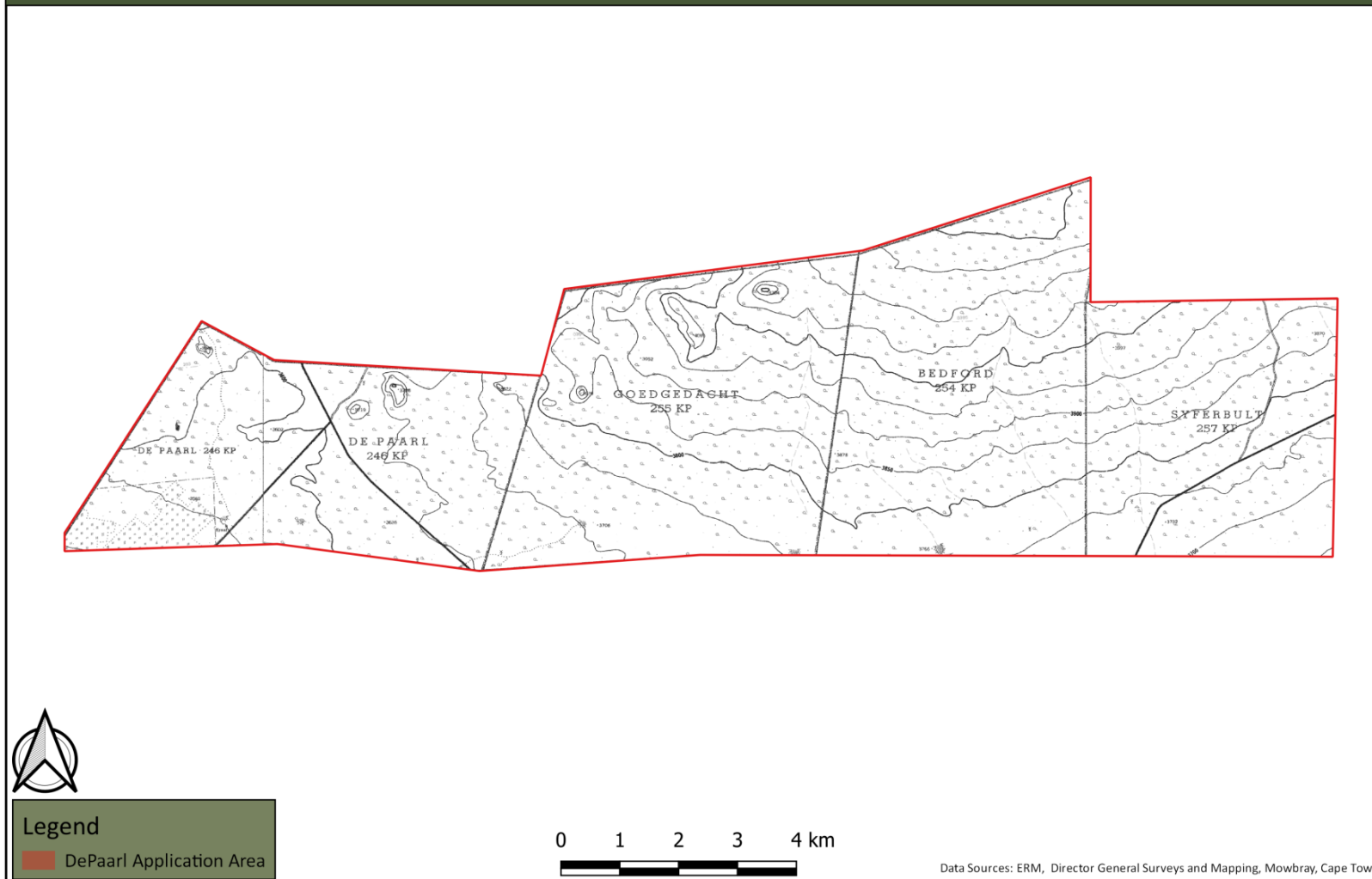


Figure 17 – Sections of the First Editions of the 2426DC and 2426DD map sheets are depicted here. The entire study area is shown.

6 FIELDWORK FINDINGS

6.1 Introduction

The fieldwork was undertaken by a fieldwork team comprising an archaeologist (Ilan Smeyatsky) and an archaeological field assistant. The fieldwork was undertaken from Thursday, 11 October 2018 to Saturday, 13 October 2018.

The field assessment focussed almost exclusively on the proposed development footprints comprising the drill sites. These development footprints were assessed by way of archaeological walkthroughs.

During the fieldwork, track logs were recorded by the fieldwork team using a hand-held GPS device. All identified sites were recorded by way of photographs and descriptions taken in the field. The positions of the identified sites were recorded using the hand-held GPS device.

The fieldwork resulted in the identification of a total of seven (7) heritage sites.

A map depicting the recorded track logs is shown in **Figure 18** below. Furthermore, the distribution of the identified heritage sites is shown in **Figure 19**.

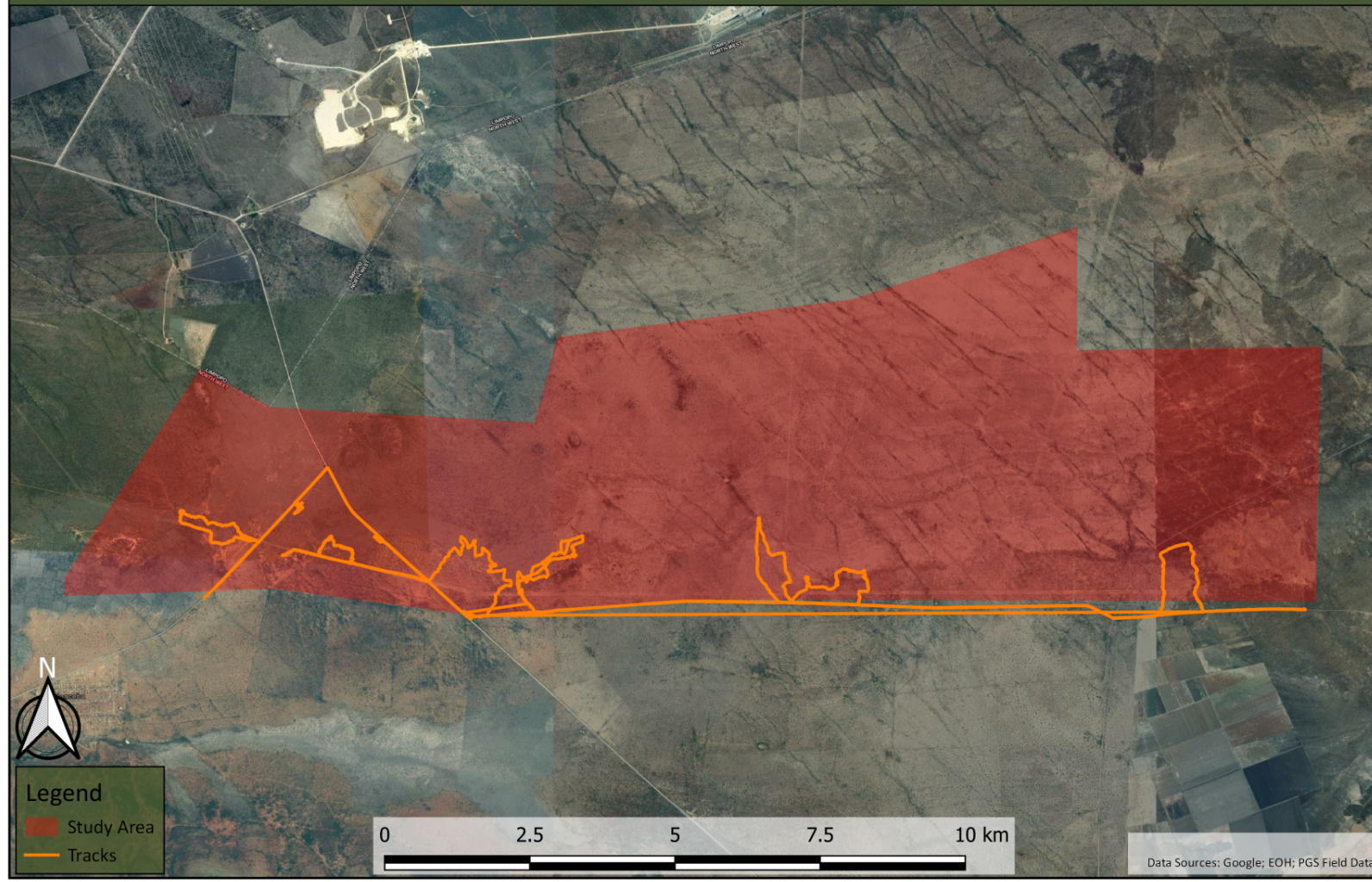


Figure 18 – Track logs recorded during the fieldwork.

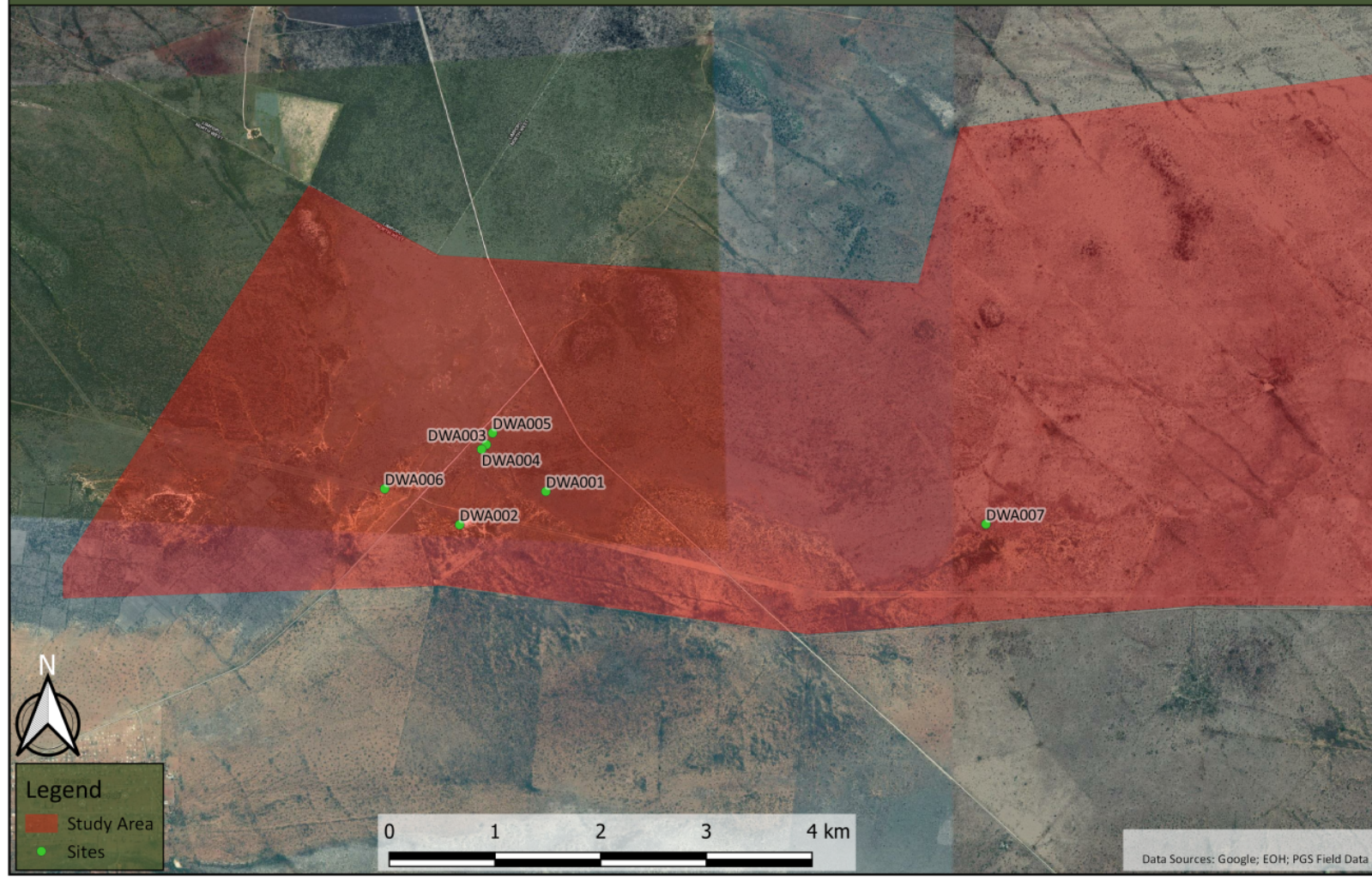


Figure 19 – Distribution of archaeological and heritage sites identified during the fieldwork.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA001	S24.90503°	E26.76158°	The site comprises the remains of the wall foundations of two rectangular stone structures. Although the exact age of these structures is not known, they are evidently the remains of a black homestead from the historic to recent past. While the structural remains possess a low significance, experience has shown that in terms of black African culture, infants and stillborn babies were frequently buried under the floors of the homesteads, or against its walls. As these graves were frequently unmarked, the possibility exists for these types of burials to also occur at this site. The structures measure 3m x 2m and 5m x 3m.	Medium to High	GP.A



Figure 20 – Remains of smaller rectangular structure.



Figure 21 – Remains of larger rectangular structure.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA002	S24.90815°	E26.75350°	<p>The site comprises a small burial ground consisting of four graves. Three of the graves belong to three generations of farm workers who worked on the farm De Paarl. The PGS Heritage fieldwork team was directed to the cemetery by the son of one of the individuals buried here, namely Mr. Banny Nqgoko. His father was buried there in 1980, his grandfather in 1949 and his great-grandfather at an unknown date. Two of the graves have concrete dressings and headstones while one is granite lined with a granite headstone.</p> <p>Approximately 15m south of the three graves, a single grave that seems to contain the remains of five individuals is located. Five loose headstones were found to be leaning against the grave dressing in question. It seems possible for the five original graves to have been exhumed and reburied in a single grave pit thereby allowing for only a single formal dressing to mark these graves. The reason for this exhumation and reburial is not presently known. These five graves may contain the remains of the farm owners. The oldest headstone from this component of the site was erected in 1928. The grave consists of a concrete dressing and granite headstone. Site extent: 30mx30m</p>	High	GP.A

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
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Figure 22 – General view of the three graves belonging to the Nqgoko family



Figure 23 – The grave of the father of Mr. Nqgoko.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
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Figure 24 – The grave of the grandfather of Mr. Ngoko.



Figure 25 – The grave of the great-grandfather of Mr. Ngoko.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
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Figure 26 – Original farm owner and family burial



Figure 27 – View of loose headstones

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA003	S24.90065°	E26.75601°	The site comprises the remains of the wall foundations of a rectangular stone structure. The site most likely dates to the historic to recent past due to its shape and the construction materials employed. Looking at its dimensions, it was most likely used as some kind of farming utility structure. Site extent: 4mx2m.	Low	GP.C



Figure 28 – View of structural remains. As can be seen from this image, the structure’s walls are quite thick yet spaced only a meter apart.



Figure 29 – These concrete pieces were observed in proximity to the structural remains.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA004	S24.90109°	E26.75556°	The site comprises the remains of the foundations of a boundary wall. Although an exact age for the site cannot presently be given, it appears to date from the historic to recent past. The site was possibly used as part of a perimeter wall. Site extent: 25mx2m.	Low	GP.C



Figure 30 – View along the length of one of the wall foundations.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA005	S24.89956°	E26.75659°	The site comprises the remains of several parallel stone walls. Although an exact age for the site cannot presently be given, it appears to date from the historic to recent past. The site was possibly used as a livestock enclosure. The walling is in a very a poor state of preservation and is hardly noticeable. Site extent: 80m in length.	Low	GP.C



Figure 31 – View of the remains of one of the walls which is only noticeable due to a slight concentration of stones.

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA006	S24.90478°	E26.74648°	This site comprises the remains of a possible historical midden. The midden mound is quite small, however fragments of glass, imported ceramic and earthen ware could be observed on top of the mound and in its proximity. Site extent: 2mx2m.	Medium	GP.B



Figure 32 – View of the low midden mound



Figure 33 – Examples of some glass, ceramic and earthen ware fragments

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DWA007	S24.90810°	E26.80282°	This site comprises the concrete foundation remains of a rectangular structure. Although the exact age of the structure is not known, it is evidently the remains of a black homestead from the historic to recent past. While the structural remains possess a low significance, experience has shown that in terms of black African culture, infants and stillborn babies were frequently buried under the floors of the homesteads, or against its walls. As these graves were frequently unmarked, the possibility exists for these types of burials to also occur at this site. Site extent: 15mx10m.	Medium to High	GP.A



Figure 34 – View of the rectangular concrete foundation at DWA007.

7 IMPACT ASSESSMENT

A total of seven archaeological and heritage sites were identified. Of these, only one site (DWA004) is located close enough to the proposed development footprints for the potential development impacts on these heritage sites to be calculated. Refer **Figure 35** below to see the position of the site in relation to the proposed development footprints.

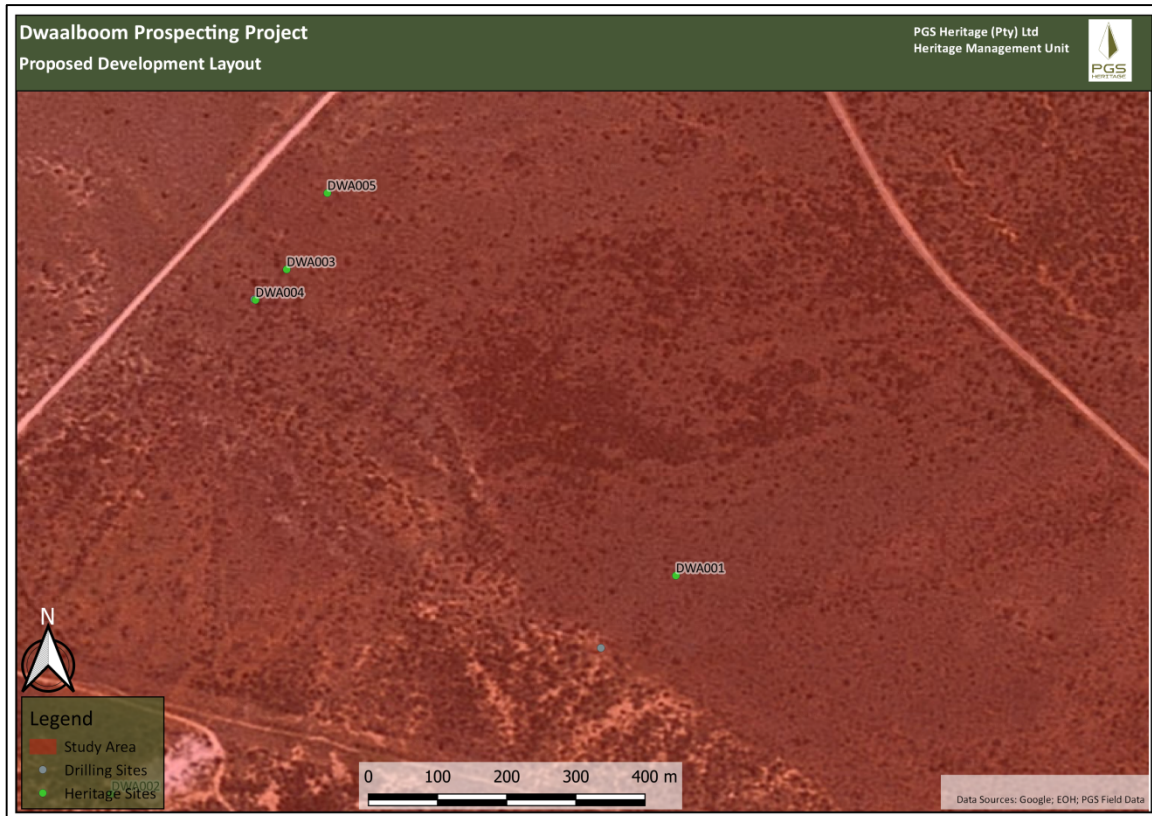


Figure 35 – Distribution of identified sites that are expected to be impacted upon by the proposed development. Please note that site DWA004 is overlaying a drilling position.

Table 12 – Impact Risk Assessment

IMPACT	IMPACT DIRECTION	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
DWA004	Negative	Low	Isolated Site	Long Term	Very likely	
	-	2	1	4	4	1.86

8 CONCLUSIONS AND RECOMMENDATIONS

Introduction

PGS Heritage (Pty) Ltd was appointed by EOH Coastal & Environmental Services to undertake a Heritage Impact Assessment (HIA) for proposed drilling sites, on the farms De Paarl 246 KP, Goedgedacht 255 KP, Bedford 254 KP & Syferbult 257 KP, Dwaalboom area, Bojanala District Municipality, North West Province.

General Desktop Study

An archival and historical desktop study was undertaken to provide a historic framework for the project area and surrounding landscape. This was augmented by a study of available historical and archival maps and an assessment of previous archaeological and heritage studies completed for the area. The desktop study revealed that the surroundings of the study area is characterised by a long and significant history. This said, the desktop study did not reveal any known archaeological or heritage sites located within the study area.

Palaeontology

Dr. Lloyd Rossouw was commissioned to undertake a paleontological desktop study for the proposed development (refer **Appendix C**). He found that the area pertaining to the proposed drilling activities is underlain by potentially fossil-bearing, Transvaal Supergroup sedimentary strata (stromatolitic carbonate interbeds) of the early Proterozoic Timeball Hill Formation (Pretoria Group), that are capped by superficial (Quaternary) deposits of low to very low palaeontological sensitivity, the latter being that the impact area is not situated within or near pan or well-developed alluvial deposits. Palaeontologically sensitive cave breccias are not anticipated in the study area, as opposed to the more cave-rich karst environment provided by the underlying Malmani dolomites, outcropping further to the north. Stromatolites are also more commonly found within the underlying Malmani dolomites.

Dr. Rossouw states that it will be difficult to determine the potentially adverse effect of drilling into potentially fossil-bearing bedrock sediments underlying the area other than to emphasize that the chances of impacting on stromatolitic occurrences is moderate to high and that such impacts are generally irreversible. Conversely, the recovery and recording of new fossils as a result of industrial excavation activities can also be considered a positive impact, but only if the process is accompanied by appropriate scientific recording and retrieval methods.

Given the overall presence of superficial overburden covering the landscape, it will be difficult to determine the potentially adverse effect of localized drilling into the potentially fossil-bearing, ferruginous shales of the Timeball Formation, other than to emphasize that the chances of adversely impacting on stromatolitic occurrences is considered low given the size of each individual footprint.

As far as palaeontological heritage is concerned, the development can proceed as long as drilling and excavation into unweathered bedrock does not exceed >1m² of surface area per locality.

The palaeontologist must apply for a valid collection / removal permit from SAHRA if fossil material has to be removed afterwards.

Fieldwork

The fieldwork was undertaken by a fieldwork team comprising an archaeologist (Ilan Smeyatsky) and an archaeological field assistant. The fieldwork was undertaken from Thursday, 11 October 2018 to Saturday, 13 October 2017. The field assessment focussed almost exclusively on the proposed development footprints comprising the drilling positions. These development footprints were assessed by way of archaeological walkthroughs.

The fieldwork resulted in the identification of seven heritage archaeological and heritage sites. These were numbered from DWA001 to DWA007. The table below provides a summary of the identified sites.

Table 13 – Archaeological and heritage sites identified within the study area

Site	Type	GPS Coordinates
DWA001	Historic Black Homestead	S24.90503°; E26.76158°
DWA002	Burial Ground	S24.90815°; E26.75350°
DWA003	Historic to Recent Structure	S24.90065°; E26.75601°
DWA004	Historic to Recent Structure	S24.90109°; E26.75556°
DWA005	Historic to Recent Structure	S24.89956°; E26.75659°
DWA006	Midden	S24.90478°; E26.74648°

DWA007	Historic to Recent Black Homestead	S24.90810°; E26.80282°
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General Mitigation Measures and Recommendations

The following general mitigation measures are required:

- Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved *in situ* by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below).
- Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill site. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.
- This heritage impact assessment report is for the proposed drill sites only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken.

Site-Specific Mitigation Measures

Impact risk assessments were undertaken to calculate the impact risk of the proposed development on these identified heritage sites. It was found that certain proposed drill sites will have an impact on site DWA004. No mitigation measures are required for DWA004.

Mitigation Measures required for Palaeontology

The following mitigation measures are required for palaeontology:

- As far as palaeontological heritage is concerned, the development can proceed as long as drilling and excavation into unweathered bedrock does not exceed >1m² of surface area per locality.

- The palaeontologist must apply for a valid collection / removal permit from SAHRA if fossil material has to be removed afterwards.

Conclusions

The overall impact that the proposed prospecting drill sites have on heritage resources is seen as acceptably low after the recommendations have been implemented and therefore, impacts can be mitigated to acceptable levels. In conclusion, on the condition that the general recommendations are adhered to, and in cognisance of the assumptions and limitations, no heritage reasons can be given for the development not to continue.

9 REFERENCES

9.1 Published Sources

- BERGH, J.S. 1999. *Geskiedenisatlas van Suid-Afrika: die Vier Noordelike Provinsies*. Van Schaik, Pretoria.
- BERGH 2005. "We Must Never Forget Where We Come From": The Bafokeng and Their Land in the 19th Century Transvaal. *History in Africa* Volume 32 2005, pp. 95-115
- BREUTZ, P.J. 1953. *The Tribes of the Rustenburg and Pilanesberg Districts*. Department of Native Affairs. Ethnological Publications No. 28.
- CARRUTHERS, V. 2007. *The Magaliesberg*. Protea Book House, Pretoria.
- CHANGUION, L & BERGH, JS. 1999. Blanke Vestiging Noord van die Vaalrivier (Hoofstuk 4). In: Bergh, JS (Editor). *Geskiedenis Atlas van Suid- Afrika. Die Vier Noordelike Provinsies*. Pretoria: JL van Schaik Uitgewers.
- COETZEE, T.A., undated. *Thabazimbi: Gister en Vandag*. Pretoria Drukkers, Pretoria.
- DEACON, H.J. & J. DEACON. 1999. *Human Beginnings in South Africa: Uncovering the Secrets of the Stone Age*. David Philip Publishers. Cape Town.
- DE BEER, F.C. 1986. Groepsgebondenheid in die Familie–Opvolgings–en Erfreg van die Noord–Ndebele, Unpublished D.Phil thesis, University of Pretoria, Pretoria
- ERASMUS. (2004). *On Route in South Africa*. Johnathan Ball Publishers.
- HALL, S.L. 1981 Iron Age sequence and settlement in the Rooiberg, Thabazimbi Area. M.A. Thesis, University of the Witwaterstrand.
- HALL, SL. 1985. Excavations at Rooikrans and Rhenosterkloof, Late Iron Age sites in the Rooiberg area of the Transvaal. *Annals of the Cape Provincial Museums*.
- HALL, S. L., 1985. Archaeological Indicators of Stress in the Western Transvaal Region between the Seventeenth and Nineteenth Centuries. In: Hamilton, C., (Ed). *The Mfecane Aftermath: Reconstructive Debates in Southern African History*. Witwatersrand University Press/University of Natal Press.
- HALL, S., ANDERSON, M, BOEYENS, J. & F. COETZEE. 2008. Towards an outline of the oral geography, historical identity and political economy of the Late Precolonial Tswana in the Rustenburg region in Swanepoel, N., Esterhuizen, A. & P. Bonner. 2008. *Five Hundred Years Rediscovered: Southern African Precedents and Prospects*. Wits University Press, Johannesburg.

- HUFFMAN, TN. 1990. Obituary: The Waterberg Research of Jan Aukema. *The South African Archaeological Bulletin*, Vol. 45, No. 152 (Dec., 1990), pp. 117-119. South African Archaeological Society
- HUFFMAN, T.N. 2007. *Handbook to the Iron Age*. University of KwaZulu-Natal Press, Scottsville.
- JACKSON, AO. 1983. The Ndebele of Langa. Department of Co-operation and Development, Ethnological Publication No. 54. Government Printer, Pretoria,
- KIRBY, P.C. (ed.) 1940. *The diary of Dr Andrew Smith, 1834-1836, vol.2*. Cape Town: Van Riebeeck Society.
- KLAPWIJK, M & HUFFMAN, TN 1996. Excavations at Silver Leaves: a final report. *South African Archaeological Bulletin* 51:84-93.
- KLEIN, RG. 2000. The Earlier Stone Age of Southern Africa. In *The South African Archaeological Bulletin*, Vol. 55, No. 172 (Dec., 2000), pp. 107-122. South African Archaeological Society
- LANG, J. 1995. *Power Base: Coal Mining in the Life of South Africa*. Jonathan Ball Publishers, Johannesburg.
- LEGASSICK, M. 1969. *The Sotho-Tswana peoples before 1800 in African societies in southern Africa*. Heinemann London
- LEGASSICK, M. 2010. *The Politics of a South African Frontier. the Griqua, the Sotho-Tswana and the Missionaries, 1780-1840*. Basler Afrika Bibliographien
- LYE, W.F. & MURRAY, C. 1980. *Transformations on the Highveld: the Tswana and Southern Sotho*. Cape Town: David Philip.
- MACHENS, E.W. 2009. *Platinum, Gold and Diamonds: The adventure of Hans Merensky's discoveries*. Protea Book House, Pretoria.
- MAGGS, T. M. O'C. 1976. *The Iron Age Communities of the Southern Highveld*. Pietermaritzburg: Published by the Council of the Natal Museum.
- MASON, 1969. Tentative Interpretations of New Radiocarbon Dates for Stone Artefact Assemblages from Rose Cottage Cave, O.F.S. and Bushman Rock Shelter, TVL. *The South African Archaeological Bulletin* Vol. 24, No. 94 (Jul., 1969), pp. 57-59
- MBENGA, B.K. 1997. *Forced Labour in the Pilanesberg: The Flogging of Chief Kgamanyane by Commandant Paul Kruger, Saulspoort, April 1870*. *Journal of Southern African Studies*. Vol. 23 (1997), pp. 127 – 140.

MBENGA, B. & A. MANSON. 2010. *People of the Dew: A History of the Bafokeng of Rustenburg District, South Africa from Early Times to 2000*. Jacana Media (Pty) Ltd, Johannesburg.

Mining Mirror, 2007. Volume 20. Brooke Patrick Publications

MITCHELL, J.H. 1994. Tartan on the Veld: the Transvaal Scottish 1950 – 1993. Transvaal Scottish Regimental Council.

MITCHELL P AND WHITELOW, G, 2005. The Archaeology of Southernmost Africa from c. 2000 BP to the Early 1800s: A Review of Recent Research *The Journal of African History*, Vol. 46, No. 2 (2005), pp. 209-241. Cambridge University Press

MORTON, RF. Linchwe I and the Kgatla Campaign in the South African War, 1899-1902. Volume 26, March 1985, pp. 169-191. *Journal Of African-History*. Cambridge University Press.

MORTON, F. 1992. *Slave-Raiding and Slavery in the Western Transvaal after the Sand River Convention*. *African Economic History*. No. 20 (1992), pp. 99 – 118.

NASSON, B. 1999. *The South African War 1899-1902*. Bloomsbury USA

NAUDÉ, M., 1998. Oral Evidence of Vernacular Buildings and Structures on Farmsteads in the Waterberg (Northern Province). *Research by the National Cultural History Museum*, 7:47-91.

PAGER, H. 1973. *Shaded Rock-Paintings in the Republic of South Africa, Lesotho, Rhodesia and Botswana*. *The South African Archaeological Bulletin*, Vol. 28, No. 109/110 (Jun., 1973), pp.39-46. South African Archaeological Society

PARSONS, N.1995. Prelude to difaqane in the interior of southern Africa, c.1600-c.1822. In: Hamilton, C. (ed.) *The mfecane aftermath: 322-349*. Johannesburg: Witwatersrand University Press.

PISTORIUS JCC. 1995 Rathateng and Mabyanamatshwaana: cradles of the Kwena and Kgatla. *South African Journal of Ethnology*

PONT, A.D., 1965. *Die Nededuitsch Hervormde Gemeente Waterberg. Kerkraad van die Nederduitsch Hervormde Gemeente Waterberg. Krugersdorp*.

Rand Daily Mail, 19 December 1977. *Iscor Mine Start-Up in 1980*

RASMUSSEN, RK. 1978. *Migrant Kingdom: Mzilikazi's Ndebele In South Africa*. Rex Collings, London; David Philip, Cape Town

SOUTH AFRICAN MINING YEARBOOK, 1941/2. *The South African Mining Journal Syndicate*, Johannesburg.

SOPER R. 1971. A general review of the Early Iron Age of the southern half of Africa. *AZANIA: Journal of the British Institute in Eastern Africa*.

The Finweek, 30 September 1980. Yskor wys slag by Grootegeluk.

The Official Year Book of the Union. 1938.

A Short History of the native Tribes of the Transvaal, Transvaal Native Affairs Department. 1905

VAN DER RYST, MM. 1998. The Waterberg Plateau in the Northern Province, Republic of South Africa, in the Later Stone Age. Archaeopress,

VAN VOLLENHOVEN, A.C. & J. VAN DER WALT, 2002: 'n Reddingsondersoek na Anglo Boereoorlogammunisie, gevind by Ifafi, Noordwes-Provinsie. Die Suid-Afrikaanse Tydskrif vir Kultuurgeskiedenis 16 (1) June 2002, pp. 62-72.

VAN WARMELO, NJ. 1944. *The Bakgatla ba ga Mosêltha ; The Ndebele of J. Kekana ; The Bahwaduba ; The tribes of Vryburg district ; A genealogy of the house of Sekhukhune ; History of Ha Makuya*. Ethnological publications / Union of South Africa, Department of Native Affairs, no. 17-22; Ethnological publications, no. 17-22. Pretoria: Printed for the Govt. Printer by the Minerva Print. Works

VAN ZYL, HJ. 1958 *Die Bakgatla van Mosêltha: 'n volkekundige studie van 'n bantoestam se ekonomiese lewe en posisie*. Johannesburg : Voortrekkerpers

VISAGIE, J.C. 2011. *Voortrekkerstamouers: 1835 – 1845*. Protea Boekhuis, Pretoria.

VOGEL, J & FULS, A 1999. The spatial distribution of radiocarbon dates from the Iron Age in southern Africa. *The South African Archaeological Bulletin* 54:97-101.

WAGNER, PA. 1973. *The platinum deposits and mines of South Africa*. Struik Publishers

WADLEY, L; MAY L, MURUNGI DW, BOLHAR, R, BAMFORD M, SIEVERS C, VAL A AND DE LA PEÑA P. 2016. Steenkopfontein 9KR: A Middle Stone Age Spring Site In Limpopo, South Africa. *The South African Archaeological Bulletin*, Vol. 71, No. 204 (DECEMBER 2016), pp.130-145. South African Archaeological Society

WULFSOHN, L. 1989. Piet Botha: A South African patriot. *Military History Journal* Vol. 8 No. 2.

WULFSOHN, L. 1992. Rustenburg at War: The Story of Rustenburg and its Citizens in the First and Second Anglo-Boer Wars. L.M. Wulfsohn, Rustenburg.

9.2 Unpublished Sources

- BIRKHOLTZ, P.D. & STEYN, H.S. 2002. Cultural Resource Management Plan for Marakele National Park. Produced for SANParks, Report: SANP – MNP - 2002-05-17/Final Report. *Helio Alliance*.
- BIRKHOLTZ, PB. 2015. Heritage Impact Assessment: Proposed Development of a Conventional Slimes Facility for Super Fines at the Grootegeluk Mine on Sections of the farm Appelvlakte 448 LQ and Nelsonskop 464 LQ near Lephalale, Lephalale Local Municipality, Waterberg District, Limpopo Province. *Synergistics Environmental Services*.
- BIRKHOLTZ PB. 2017. Heritage Impact Assessment: The Proposed Development Of Two Open Mining Pits 62e/60e (Dishaba) And 36w (Tumela) At The Amandelbult Mining Complex Located North Of Northam, Thabazimbi Local Municipality, Waterberg District Municipality, Limpopo Province. *Aurecon South Africa (Pty) Ltd*
- COETZEE, F. 2014. Cultural Heritage Assessment for the Proposed Mara Trails Camp, on the Farm Jagtersrus 418 KQ, in the Marakele Park (Pty) Ltd, Section of the Marakele National Park, Limpopo Province. *Department of Anthropology & Archaeology, University of South Africa*
- COETZEE, F. 2018. Cultural Heritage Impact Assessment: Phase 1 Investigation for Proposed Development of New Access Roads and Upgrades to Marataba Tails Lodge and Marataba Safari Lodge within the Marataba Section of the Marakele National Park, Lephalale Local Municipality, Waterberg District Municipality, Limpopo Province. *Department of Anthropology & Archaeology, University of South Africa*
- GAIGHER, S. 2016. Heritage Impact Assessment (HIA) Report for the Proposed Re-alignment of the Railway Line at the proposed 37 open pit, Amandelbult Mine, Limpopo Province. *G&A Heritage*
- HIGGET, N. 2012. Phase 1 Archaeological Impact Assessment for the MBET Pipeline. An unpublished report by *Digby Wells Environmental*.
- HIGGET, N. & S. KARODIA. 2013. Heritage Impact Assessment for the Proposed Thabametsi Project, Lephalale, Limpopo Province. An unpublished report by *Digby Wells Environmental*.
- HUFFMAN, T.N. 2004. Archaeological Assessment for the Rhino Andalusite Mine. *Unpublished report by ARM. SAHRIS MAPID_00627*.
- HUFFMAN, T.N. & J. VAN DER WALT. 2013. Sasol Limpopo West Heritage Report. An unpublished report by the *University of the Witwatersrand*.
- HUTTEN, M. 2012. Heritage Impact Assessment for the Proposed Development of Kambaku Private School on the Farm Vlakplaaats 137 KQ, approximately 15km North of Thabazimbi, Limpopo Province. *Hutten Heritage Consultants*.

- HUTTEN, M. 2015. Heritage Impact Assessment for the Proposed Extended Delta Solar Park west of Lephalale, Limpopo Province. *Hutten Heritage Consultants*.
- KRUGER, N. 2017. Archaeological Impact Assessment (AIA) for the Improvement of National Route R510 Section 2 from Km 6.3 at Bierspruit Bridge to Km 33.4 near Thabazimbi, Thabazimbi Local Municipality, Waterberg District Municipality, Limpopo Province. *Exigo Sustainability*.
- KRUGER, N. 2018a. Archaeological Impact Assessment (AIA) of Demarcated Areas on Portions of Rooipan 3571Q and Zandfontein 3821Q for the Proposed Transnet Waterberg Rail Corridor Expansion Project (Diepspruit Loop) in the Waterberg District Municipality, Limpopo Province. *Exigo Sustainability*.
- KRUGER, N. 2018b. Archaeological Impact Assessment (AIA) Of Demarcated Areas on a Portion of Blaauwpan 133KQ for the Proposed Transnet Waterberg Rail Corridor Expansion Project (Marakele Loop) in the Waterberg District Municipality, Limpopo Province. *Exigo Sustainability*.
- KUSEL, U. 2003. Cultural Heritage Resources Scoping Report Proposed housing Development for Regorogile (Rosseauspoort 319 KQ Sec 5). *African Heritage Consultants CC*.
- KUSEL, U. 2007. Cultural Heritage Resources Impact Assessment Of Hanover 341 KQ In The Thabazimbi Area Limpopo Province. *African Heritage Consultants CC*.
- MORRIS, D. 2008. Archaeological and Heritage Phase 1, Impact Assessment for proposed upgrading of Sishen Mine Diesel Depot Storage Capacity at Kathu, Northern Cape. *Kimberley: McGregor Museum*.
- NEL, J. 2011. Addendum To Phase 1 Archaeological Impact Assessment for the Boikarabelo Coal Mine (Proposed Railway Link From the Farm Kruishout To The Farm Buffelsjagt) Lephalale Local Municipality, Waterberg District, Limpopo Province. *Digby Wells Environmental*.
- PISTORIUS, J. 2007. A Phase 1 Heritage Impact Assessment Study For a Proposed New 132kV Power Line Running from the New Matlabas Substation to the Proposed New Bulge Substation in the Limpopo Province of South Africa. *Unpublished Report for Landscape Dynamics..*
- PISTORIUS, J. 2012. A Phase I Heritage Impact Assessment (HIA) Study For Eskom's Proposed 132kv Power Lines between the Proposed Tshatane and Lesego Substations and between the Proposed Tshatane Substation and the Existing Jane Furse Substation in the Limpopo Province. *Dynamic Integrated Geo-hydro Environmental Services (DIGES)*
- SUTTON, M. 2018. Heritage Impact Assessment for the Proposed Medupi Power Station Flue Gas Desulphurisation Retrofit Project and associated infrastructure, Lephalale, Limpopo Province, South Africa. *NGT Holdings (PTY) LTD*.

- VAN DER RYST, MM. 2006. Seeking shelter: hunter-gatherer-fishers of Olieboomspoot, Limpopo, South Africa. *Unpublished PhD: University of the Witwatersrand.*
- VAN SCHALKWYK, J.A. 1994. A Survey of Archaeological and Cultural Historical Resources in the Amandelbult Mining Lease Area. *An unpublished report by the National Cultural History Museum on file at SAHRA as: 1994-SAHRA-0024. SAHRIS MAP ID_02340.*
- VAN SCHALKWYK, J.A., TEICHERT, F., & PELSER, A.J. 2003. A Survey of Archaeological Sites for the Amandelbult Platinum Mine Seismic Exploration Program. *An unpublished report by the National Cultural History Museum on file at SAHRA as: 2003-SAHRA-0086. SAHRIS MAPID_00779.*
- VAN SCHALKWYK, J.A. 2005. Heritage Survey Report of the Kumba Properties at Grootegeluk Mine, Lephalale Area, Limpopo Province. *An unpublished report compiled by the National Cultural History Museum.*
- VAN SCHALKWYK, J.A. 2007. Survey of Heritage Resources in the location of the proposed Merensky Mining Project, Amandelbult Section, Rustenburg Platinum Mine, Limpopo Province. *Unpublished report by the National Cultural History Museum. SAHRIS MAPID_01017.*
- VAN SCHALKWYK, J. 2012. Heritage Impact Assessment for the Proposed Mixed Use Development and Solar Park On Portion 1 of the Farm Steenbokpan 295IQ and the Remainder of Farm Vangpan 294IQ in the Lephalale Region, Limpopo Province. *An unpublished report for Interdesign Landscape Architects.*

9.3 Historical Topographic Maps

All the historic topographical maps used in this report were obtained from the Directorate: National Geo-spatial Information of the Department of Rural Development and Land Reform in Cape Town.

9.4 Internet

www.angloboerwar.com

www.sahistory.org.za

www.wikipedia.org

Appendix A
Legislative Requirements – Terminology and Assessment Criteria

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation -

- i. NEMA;
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999; and
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002.

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- i. GNR 982 of 2014 (Government Gazette 38282) promulgated under the NEMA:
 - a) Basic Assessment Report (BAR) – Regulations 19 and 23
 - b) Environmental Scoping Report (ESR) – Regulation 21
 - c) Environmental Impacts Report (EIR) – Regulation 23
 - d) EMPr – Regulations 19 and 23
- ii. NHRA:
 - a) Protection of Heritage Resources – Sections 34 to 36; and
 - b) Heritage Resources Management – Section 38
- iii. MPRDA Regulations of 2014:
 - a) Environmental reports to be compiled for application of mining right – Regulation 48.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA states that, “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”. The NEMA (Act No 107 of 1998) states that an integrated EMP should, (23 -2 (b)) “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. In accordance with legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and the Association of Southern African Professional Archaeologists (ASAPA) have also been incorporated to ensure that a comprehensive legally compatible HIA report is compiled.

Appendix B
Project team CV's

POLKE DOUSSY BIRKHOLTZ

Professional Heritage Specialist / Professional Archaeologist / Director PGS Heritage

Name: Polke Doussy Birkholtz

Date & Place of Birth: 9 February 1975 – Klerksdorp, North West Province, South Africa

Place of Tertiary Education & Dates Associated:

Institution: University of Pretoria

Qualification: BA (Cum Laude) - Bachelor of Arts Degree Specializing in Archaeology, History and Anthropology

Date: 1996

Institution: University of Pretoria

Qualification: BA Hons (Cum Laude) - Bachelor of Arts with Honours Degree Specializing in Archaeology

Date: 1997

Institution: National College of Photography

Qualification: Photography

Date: 1998

Qualifications:

BA - Degree specialising in Archaeology, History and Anthropology

BA Hons - Professional Archaeologist

Memberships:

Association of Southern African Professional Archaeologists (ASAPA)

Professional Member of the CRM Section of ASAPA

Overview of Post Graduate Experience:

1997 – 2000 – Member/Archaeologist – Archaeo-Info

2001 – 2003 – Archaeologist/Heritage Specialist – Helio Alliance

2000 – 2008 – Member/Archaeologist/Heritage Specialist – Archaeology Africa

2003 - Present – Director / Archaeologist / Heritage Specialist – PGS Heritage

Languages: English: Speak, Read & Write & Afrikaans: Speak, Read & Write

Total Years' Experience: 18 Years

Conference Papers:

- *Taking Small Steps in Augrabies Falls National Park. With Nico Schwartz and Lynne Simpson. South African National Parks: Towards Best Practice. Communities and Conservation. 15 – 19 May 2000. Berg en Dal Rest Camp, Kruger National Park.*

Books:

- *The Story of Voorspoed: A Historical and Archaeological appraisal of the Voorspoed Diamond Mining Company Limited (1906 -1912). Book written by Polke Birkholtz for De Beers Consolidated Mines.*

Experience Related to the Scope of Work:

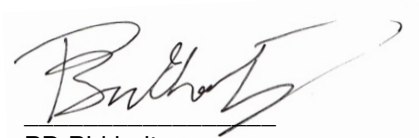
- Polke has worked as a **HERITAGE SPECIALIST / ARCHAEOLOGIST / HISTORIAN** on more than 300 projects, and acted as **PROJECT MANAGER** on almost all of these projects. His experience include the following:
 - Development of New Sedimentation and Flocculation Tanks at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Greenline*.
 - EThekweni Northern Aqueduct Project, Durban, KwaZulu-Natal. Heritage Impact Assessment for *Strategic Environmental Focus*.
 - Johannesburg Union Observatory, Johannesburg, Gauteng Province. Heritage Inventory for *Holm Jordaan*.
 - Development at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Aurecon*.
 - Comet Ext. 8 Development, Boksburg, Gauteng Province. Phase 2 Heritage Impact Assessment for *Urban Dynamics*.
 - Randjesfontein Homestead, Midrand, Gauteng Province. Baseline Heritage Assessment with Nkosinathi Tomose for Johannesburg City Parks.
 - Rand Leases Ext. 13 Development, Roodepoort, Gauteng Province. Heritage Impact Assessment for *Marsh*.
 - Proposed Relocation of the Hillendale Heavy Minerals Plant (HHMP) from Hillendale to Fairbreeze, KwaZulu-Natal. Heritage Impact Assessment for *Goslar Environmental*.
 - Portion 80 of the farm Eikenhof 323 IQ, Johannesburg, Gauteng Province. Heritage Inventory for *Khare Incorporated*.
 - Comet Ext. 14 Development, Boksburg, Gauteng Province. Heritage Impact Assessment for *Marsh*.
 - Rand Steam Laundries, Johannesburg, Gauteng Province. Archival and Historical Study for *Impendulo* and *Imperial Properties*.
 - Mine Waste Solutions, near Klerksdorp, North West Province. Heritage Inventory for *AngloGold Ashanti*.
 - Consolidated EIA and EMP for the Kroondal and Marikana Mining Right Areas, North West Province. Heritage Impact Assessment for *Aquarius Platinum*.
 - Wilkoppies Shopping Mall, Klerksdorp, North West Province. Heritage Impact Assessment for *Centre for Environmental Management*.
 - Proposed Vosloorus Ext. 24, Vosloorus Ext. 41 and Vosloorus Ext. 43 Developments, Ekurhuleni District Municipality, Gauteng Province. Heritage Impact Assessment for *Enkanyini Projects*.
 - Proposed Development of Portions 3, 6, 7 and 9 of the farm Olievenhoutbosch 389 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Marsh*.
 - Proposed Development of Lotus Gardens Ext. 18 to 27, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Pierre Joubert*.
 - Proposed Development of the site of the old Vereeniging Hospital, Vereeniging, Gauteng Province. Heritage Scoping Assessment for *Lekwa*.

- Proposed Demolition of an Old Building, Kroonstad, Free State Province. Phase 2 Heritage Impact Assessment for *De Beers Consolidated Mines*.
 - Proposed Development at Westdene Dam, Johannesburg, Gauteng Province. Heritage Impact Assessment for *Newtown*.
 - West End, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
 - Kathu Supplier Park, Kathu, Northern Cape Province. Heritage Impact Assessment for *Synergistics*.
 - Matlosana 132 kV Line and Substation, Stilfontein, North West Province. Heritage Impact Assessment for *Anglo Saxon Group* and *Eskom*.
 - Marakele National Park, Thabazimbi, Limpopo Province. Cultural Resources Management Plan for *SANParks*.
 - Cullinan Diamond Mine, Cullinan, Gauteng Province. Heritage Inventory for *Petra Diamonds*.
 - Highveld Mushrooms Project, Pretoria, Gauteng Province. Heritage Impact Assessment for *Mills & Otten*.
 - Development at the Reserve Bank Governor's Residence, Pretoria, Gauteng Province. Archaeological Excavations and Mitigation for the *South African Reserve Bank*.
 - Proposed Stones & Stones Recycling Plant, Johannesburg, Gauteng Province. Heritage Scoping Report for *KV3*.
 - South East Vertical Shaft Section of ERPM, Boksburg, Gauteng Province. Heritage Scoping Report for *East Rand Proprietary Mines*.
 - Soshanguve Bulk Water Replacement Project, Soshanguve, Gauteng Province. Heritage Impact Assessment for *KWP*.
 - Biodiversity, Conservation and Participatory Development Project, Swaziland. Archaeological Component for *Africon*.
 - Camdeboo National Park, Graaff-Reinet, Eastern Cape Province. Cultural Resources Management Plan for *SANParks*.
 - Main Place, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
 - Modderfontein Mine, Springs, Gauteng Province. Detailed Archival and Historical Study for *Consolidated Modderfontein Mines*.
 - Proposed New Head Office for the Department of Foreign Affairs, Pretoria, Gauteng Province. Heritage Impact Assessment for *Holm Jordaan Group*.
 - Proposed Modification of the Lukasrand Tower, Pretoria, Gauteng Province. Heritage Assessment for *IEPM*.
 - Proposed Road between the Noupoort CBD and Kwazamukolo, Northern Cape Province. Heritage Impact Assessment for *Gill & Associates*.
 - Proposed Development at the Johannesburg Zoological Gardens, Johannesburg, Gauteng Province. Detailed Archival and Historical Study for *Matakoma*.
- Polke's **KEY QUALIFICATIONS:**
 - Project Management
 - Archaeological and Heritage Management
 - Archaeological and Heritage Impact Assessment
 - Archaeological and Heritage Fieldwork
 - Archival and Historical Research
 - Report Writing

- Polke's **INFORMATION TECHNOLOGY EXPERIENCE:**

- *MS Office – Word, Excel, & Powerpoint*
- *Google Earth*
- *Garmin Mapsource*
- *Adobe Photoshop*
- *Corel Draw*

I, Polke Doussy Birkholtz, hereby confirm that the above information contained in my CV is true and correct.



PD Birkholtz

1 December 2017

Date

ILAN SMEYATSKY

Professional Archaeologist

Personal Details

- **Name:** Ilan
- **Surname:** Smeyatsky
- **Identity Number:** 9109275072080
- **Date of Birth:** 27-09-1991
- **Citizenship:** South African
- **Gender:** Male
- **Marital Status:** Single
- **Languages Spoken:** English

Education History

2010-2013: BSc Bachelors Degree

University of the Witwatersrand, Johannesburg, South Africa

- Archaeology
- Psychology
- Statistics
- Research Design and Analysis
- 67% Pass (**2:1 Qualification**)

2014: BSc (Hons) in Archaeology

AWARDS:

- Received the 2014 Center of Excellence in Palaeoscience award - **Bursary to the value of ZAR 30000 ≈ \$2500**
- Received the Post-Graduate Merit Award in 2015 for academic merit for my Honours academic results - **Bursary to the value of ZAR 25000 ≈ \$1800**

University of the Witwatersrand, Johannesburg, South Africa

- Archaeology
- Excavation techniques
- Theory
- 69% Pass (**2:1 Qualification**)
- **Distinction** received for thesis entitled: "Stylistic variation in Later Stone Age tanged arrowheads: a pilot study using geometric morphometrics"

2015-2017: MSc by Research (Archaeology)

University of the Witwatersrand, Johannesburg, South Africa

- Archaeology
- Statistical analysis
- GIS (Geographic Information Systems)
- Thesis entitled: “Discerning and explaining shape variations in Later Stone Age tanged arrowheads, South Africa”

Aug 2016 –

Jan 2017: Semester of Archaeology Masters

AWARD: Received the 2016 AESOP+ full Masters scholarship to study at Uppsala University, Uppsala, Sweden – **Scholarship to the value of ZAR 160,000 ≈ \$11,000**

Uppsala University, Uppsala, Sweden

- Archaeological theory
- GIS (Geographic Information Systems)
- Invitational research

Employment History

Part time employment as a student:

- **2009-2013:** Part-Time Electrician Apprentice: Assisting in home electrical repair jobs.
- **2014-2015:** Lab Research Assistant: Analysing and classifying lithic artefacts, Data capturing, Mentoring trainee research assistants.

Experience in the field of archaeology:

- **2013-2015: Fieldwork/Excavator - Responsibilities:** Feature detection, excavation, sieving, sorting, analysis, soil sampling, field documentation, ‘dumpy’ operation , Total Station operation, DGPS operation, rock art tracing and photography, engraving tracing and photography.
 - South African excavations:
 - Early Stone Age excavation at Maropeng World Heritage Site in Gauteng (1 Week – August 2015)
 - Pig cadaver exhumation as part of forensic experiment near Pretoria, Gauteng (1 Week – December 2014) - Praised for having the determination of returning for each subsequent excavation day as it was

performed on a purely volunteer basis and the work conditions were particularly strenuous - Dr. Coen Nienaber

- Iron Age excavation at Komati Gorge, Mpumalanga (1 Week – August 2014) - Praised for being exceptionally “methodical and proficient” with my excavation techniques – Dr. Alex Schoeman
 - Rock art fieldwork at Komati Gorge, Mpumalanga (1 Week – August 2014)
 - Underwater archaeology site mapping Komati Gorge, Mpumalanga (1 Week – August 2014)
 - Early Stone Age excavation at Maropeng World Heritage Site in Gauteng (2 Weeks - September 2013) - Personally uncovered some of the only stone tools (~1.8 million years old) found during that digging season.
- **2016: Excavation Supervisor - Responsibilities:** Supervision of two junior excavators, site detection, decision of excavation grid placement, excavation, sieving, sorting, soil sampling, field documentation.
 - Historical (farm site) excavation at Graaff-Reinet, Eastern Cape, South Africa (2 Weeks)
 - Completed dig 1 week ahead of schedule aided by my efficient direction, drive and support to the excavators under my supervision.
- **April 2017 – April 2018:** Intern Archaeologist – PGS Heritage: Heritage Impact assessments, background research, report writing, permit applications, collections management, stakeholder engagement and grave relocation.
 - **April 2018 – PRESENT:** Archaeologist – PGS Heritage: Heritage Impact assessments, background research, report writing, permit applications, collections management, stakeholder engagement and grave relocation.

Professional Body Membership:

- Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member
- CRM Accreditation (ASAPA) -
 - Field Supervisor – Stone Age, Iron Age & Grave Relocations

Appendix C
Palaeontological Desktop Study

Filename: PGS_HIA_Proposed Drilling and Prospecting near
Dwaalboom_20181121_Version 2.docx
Folder: /Users/PolkeBirkholtz/Library/Containers/com.microsoft.Word/Data/Docu
ments
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Subject:
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Keywords:
Comments:
Creation Date: 11/21/18 1:44:00 PM
Change Number: 2
Last Saved On: 11/21/18 1:44:00 PM
Last Saved By: polke@pgsheritage.co.za
Total Editing Time: 1 Minute
Last Printed On: 11/21/18 1:44:00 PM
As of Last Complete Printing
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Number of Words: 20 274 (approx.)
Number of Characters: 115 562 (approx.)