



**NOTIFICATION OF INTENT TO DEVELOP
AND HERITAGE STATEMENT FOR THE
MINING RIGHT APPLICATION FOR THE
RECLAMATION OF THE SOWETO
CLUSTER DUMPS, ROODEPOORT,
GAUTENG PROVINCE**

ERGO MINING (PTY) LIMITED

FEBRUARY 2014

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This document has been prepared by **Digby Wells Environmental**.

Report Title: Notification of Intent to Develop and Heritage Statement for the Mining Right Application for the Reclamation of the Soweto Cluster Dumps, Roodepoort, Gauteng Province

Project Number: ERG2613

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EXECUTIVE SUMMARY AND NOTICE OF INTENT TO DEVELOP

Introduction

Digby Wells Environmental (hereafter Digby Wells) was requested by Ergo Mining (Pty) Ltd (Ergo) to conduct an Environmental Impact Assessment (EIA) study and Environmental Management Programme (EMP) Report, inclusive of specialist studies, for a Mining Right Application (MRA) (Ref No. GP10007MR) in accordance with the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA).

Project Location

Name of property/ies	Roodepoort, Vlakfontein and Vogelstruisfontein
Street address or location (e.g.: Off R44)	Off the R41, M77 and R558
Erf or farm number/s	Roodepoort 237 IQ Portions 1, 5 and 14; Vlakfontein 238 IQ Portions 1; Vogelstruisfontein 231 IQ Portions 17, 18 and 161
Coordinates of approximate centre of project area	S 26° 11' 54.5"
	E 27° 51' 40.1"
Town or District	City of Johannesburg District Municipality
Responsible Municipality	City of Johannesburg Metropolitan Municipality
Current use	Industrial and Residential
Predominant land use/s of surrounding properties	Industrial and Residential

Registered Owners of Properties

Property	Title Deed Owner	Contact Information	Notification Method
Roodepoort 237 IQ Portion 1	Dino Prop (Pty) Ltd	381 Ontdekkers Road, Florida Park, Ext 3. Roodepoort, 1709 P. O. Box 268 Florida Hills, 1716	Advertisement, Site Notice and Letter
Roodepoort 237 IQ Portion 5			
Roodepoort 237 IQ Portion 14	Living Africa Dev (Pty) Ltd	No Information	Advertisement and Site Notice
Vlakfontein 238 IQ Portion 1	DRD Gold Ltd	Quadrum Office Park 1st Floor, Building 1 50 Constantia Boulevard	Advertisement, Site Notice and Letter

Property	Title Deed Owner	Contact Information	Notification Method
		Constantia Kloof Ext 28 Roodepoort 1709 P.O. Box 390 Maraisburg 1700 (011) 470 2600	
Vogelstruisfontein 231 IQ Portion 17	Suid-Afrikaanse Spoorpendel Korporasie Ltd	No Information	Advertisement and Site Notice
Vogelstruisfontein 231 IQ Portion 18	Fleurhof Extension 2 (Pty) Ltd	Cedarwood House Ballywoods Office Park Bryanston, 2196 (011) 472 4325	Advertisement, Site Notice and Letter
Vogelstruisfontein 231 IQ Portion 161	Rand Leases Securitisation (Pty) Ltd	Rand Leases House, Peter Place Office Park 54 Peter Place 2191, P.O. Box 1 Florida, Johannesburg 1710	Advertisement, Site Notice and Letter

Project / development details

Ergo is currently conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps), created from historic gold mining located on the Witwatersrand, Gauteng. An MRA was submitted to the Department of Mineral Resources (DMR) by Ergo in terms of Section 22 of the MPRDA for the various tailings dumps as part of the Soweto Cluster in the District of Roodepoort, Gauteng Province.

It is the intention that the mining operation will make use of the infrastructure owned by Crown Gold Recoveries (Pty) Ltd (CGR) and the other assets held by Ergo. New reclamation plant and equipment will be constructed at the Soweto Cluster to enable slimes to be recovered by hydraulic monitoring and sands to be reclaimed by mechanical means. The resulting slurry will be pumped by way of new pipelines via the CGR assets to the Ergo beneficiation plant for gold recovery. Tailings will be deposited on the Brakpan/Withok TSF.

NHRA Section 38 Triggers

The following aspects of Section 38 of the NHRA may be triggered by the proposed project.

NHRA Section 38 (1) Activities / Triggers	Summary description (e.g. 500 m conveyor belt, open cast pit, etc.)

NHRA Section 38 (1) Activities / Triggers		Summary description (e.g. 500 m conveyor belt, open cast pit, etc.)	
<input checked="" type="checkbox"/>	a	Any linear development or barrier >300 m	The project will require the construction of a pipeline for the transportation of slimes to the beneficiation plant for gold recovery
<input type="checkbox"/>	b	Any bridge or similar structure >50 m	
<input checked="" type="checkbox"/>	c	Any development or activity that will change the character of a site:	
<input checked="" type="checkbox"/>	i	≥5 000m ² in extent	Reclamation activities of the dumps will change the character of the site.
<input type="checkbox"/>	ii	Involving ≥3 existing erven/subdivisions	
<input type="checkbox"/>	iii	Involving ≥3 or more erven/divisions consolidated within past 5 years.	
<input type="checkbox"/>	d	Rezoning of a site ≥10 000m ² in extent.	
<input checked="" type="checkbox"/>	e	Other triggers, e.g.: in terms of other legislation, (i.e.: National Environment Management Act, etc.)	Environmental authorisation as part of an MRA application in accordance with Section 22 of the MPRDA

Activities

The following activities will take place during the lifespan of the proposed project.

	Activity	Description	Source of Risk
Construction Phase			
1.	Employment of workers	Preparation for reclamation activities	None
2.	Removal of Vegetation	Vegetation will be removed on the dump, and clearing for the construction of temporary infrastructure, pump stations and access roads.	This activity constitutes development as defined in terms of Section 2(viii) (f) where 'any physical intervention ...result in a change to the nature, appearance or physical

	Activity	Description	Source of Risk
			<p>nature of a place including any removal or destruction of trees, or removal of vegetation or topsoil.'</p> <p>The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (c) of the NHRA.</p>
3.	Construction of pipelines	A slurry and water line will be constructed and will meet up with the existing Crown-Ergo pipeline	<p>This activity constitutes development as defined in terms of Section 2(viii) (a) and (b) where 'any physical intervention ...result in a change to the nature, appearance or physical nature of a place including construction, alteration, demolition, removal or change of use of a place or a structure at a place [and] carrying out any works on or over or under a place.'</p> <p>The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (a) of the NHRA.</p>
4.	Operation of construction machinery and vehicles	Construction machinery and vehicles will be utilised to construct the temporary infrastructure, pump station and access roads. Vehicles will be used to transport equipment on site.	<p>This activity constitutes development as defined in terms of Section 2(viii) (b) where 'any physical intervention ...result in a change to the nature, appearance or physical nature of a place including carrying out any works on or over or under a place.'</p> <p>The identified risk is therefore changes to resources that are</p>

	Activity	Description	Source of Risk
			generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 that may occur in the proposed project area.
5.	Temporary storage of construction materials and hazardous material such as contaminated soil	Construction and hazardous material will be temporarily stored on site.	<p>This activity constitutes development as defined in terms of Section 2(viii) (a) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including construction, alteration, demolition, removal or change of use of a place or a structure at a place.’</p> <p>The identified risk is therefore changes to resources that are generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 that may occur in the proposed project area.</p> <p>The identified risk is therefore change of use of a place or structure.</p>
Operational Phase			
1.	Reclamation Activities	2L24 will be reclaimed first, followed by the other 11 dumps	<p>Reclamation activities will result in the destruction of dumps (structures) older than 60 years.</p> <p>This activity constitutes development as defined in terms of Section 2(viii) (a), (b) and (c) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including</p>

	Activity	Description	Source of Risk
			<p>construction, alteration, demolition, removal or change of use of a place</p> <p>or a structure at a place [and] carrying out any works on or over or under a place [and] any change to the natural or existing condition or topography of land.'</p> <p>The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (c) of the NHRA, in addition to consideration should be given to the possible protected status of the land covered by the dumps as described in Section 28(1) (c) of the NHRA.</p>
2.	Operation of pipes	Slurry will be transported to one of the Ergo Plants.	None
3.	Operation of Pump Station	Operation of pump station.	None
Decommissioning Phase			
1.	Decommissioning activities	Decommissioning Activities.	None
2.	Rehabilitation of site	The project area will be rehabilitated.	None
Post-closure Phase			
1.	Groundwater	Potential for acid mine drainage.	Although this is not an activity as such, acid mine drainage may result in changes to the 'natural or existing condition or topography of land' as defined

	Activity	Description	Source of Risk
			<p>in terms of terms of Section 2(viii) (e).</p> <p>The identified risk is therefore potential changes to the character of the sites described in Sections 27, 28, 31, 32, 34, 35, 36 and 37 of the NHRA.</p>

Additional Impact Assessment Process

The following impact assessment processes are currently being undertaken for the proposed project.

Legislation, i.e. NEMA, MPRDA, etc.	MPRDA
Consenting Authority that has/will receive information	Department of Mineral Resources (DMR)
Present phase of process at Authority, e.g. Draft Scoping Report	Draft Scoping Report

Identified/known heritage resources and potential impacts

The following categories of heritage resources as defined in Section 3 of the NHRA are known to occur within the proposed project area.

<input checked="" type="checkbox"/>	3(2)(a)	Places, buildings, structures and equipment of cultural significance
		<i>Description of resource:</i> Historic mining infrastructure associated with the Durban Roodepoort Deep and Rand Leases Mines
		<i>Potential impact:</i> Damage to or destruction of infrastructure associated with vegetation clearing, storage facility construction and reclamation activities
<input type="checkbox"/>	3(2)(b)	Places to which oral traditions are attached or which are associated with living heritage
		<i>Description of resource:</i>
		<i>Potential impact:</i>
<input checked="" type="checkbox"/>	3(2)(c)	Historical settlements and townscapes
		<i>Description of resource:</i> Johannesburg Townscape & Soweto Township

		<i>Potential impact: Alteration to visual aspect and possibly sense of place through the reclamation of the mine dumps, removal of the tangible aspects of the mining heritage of Johannesburg</i>
<input type="checkbox"/>	3(2)(d)	Landscapes and natural features of cultural significance <i>Description of resource:</i> <i>Potential impact:</i>
<input type="checkbox"/>	3(2)(e)	Geological resources of scientific or cultural importance <i>Description of resource:</i> <i>Potential impact:</i>
<input type="checkbox"/>	3(2)(f)	Archaeology and/or palaeontology (Including archaeological sites and material, fossils, rock art, battlefields & wrecks) <i>Description of resource:</i> <i>Potential impact:</i>
<input checked="" type="checkbox"/>	3(2)(g)	Graves and burial grounds (eg: ancestral graves, graves of victims of conflict, historical graves & cemeteries) <i>Description of resource: Cemeteries</i> <i>Potential impact: Potential damage to burial grounds and graves through activities associated with the clearing of vegetation, construction of the pipeline and reclamation of dumps.</i>
<input type="checkbox"/>	3(2)(a)	Other human remains <i>Description of resource:</i> <i>Potential impact:</i>
<input type="checkbox"/>	3(2)(h)	Sites of significance relating to the history of slavery in South Africa <i>Description of resource:</i> <i>Potential impact:</i>
<input type="checkbox"/>	3(2)(i)	Movable objects <i>Description of resource:</i> <i>Potential impact:</i>

Recommendations

Is a Heritage Impact Assessment required?		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If NO, provide motivation:			
If YES, provide suggested components that may be required or undertaken during HIA.			
<input type="checkbox"/>	Archaeology	<input type="checkbox"/>	Architecture
<input type="checkbox"/>	Built Environment	<input type="checkbox"/>	Burial Grounds and Graves
<input type="checkbox"/>	Palaeontology	<input type="checkbox"/>	Public Participation
<input type="checkbox"/>	Townscapes	<input checked="" type="checkbox"/>	Visual Impact
<input checked="" type="checkbox"/>	Other:		
<ul style="list-style-type: none"> ■ A specific focus on the historical landscape including an inventory of historical structures, monuments and memorials within the project area; and ■ Exemption from archaeological, palaeontological and burial ground components, provided that Chance Find Procedures are in place and implemented when required. 			

GLOSSARY OF ABBREVIATIONS AND TERMS

CGR	Crown Gold Recoveries (Pty) Ltd
Digby Wells	Digby Wells Environmental
DMR	Department of Mineral Resources
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
Ergo	Ergo Mining (Pty) Ltd
HIA	Heritage Impact Assessment
HRA	Heritage Resources Authority
IDP	Integrated Development Plan
MJS	Major Jackson Series
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MRA	Mining Right Application
NEM:WA	National Environmental Management : Waste Act, 2009 (Act No. 59 of 2009)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID	Notice of Intent to Develop
PHRA-G	Provincial Heritage Resources Authority - Gauteng
SAHRA	South African Heritage Resources Authority
SCF	Statutory Comment Feedback
SDF	Spatial Development Framework
SEP	Stakeholder Engagement Plan

Notification of Intent to Develop and Heritage Statement for the Mining
Right Application for the Reclamation of the Soweto Cluster Dumps,
Roodepoort, Gauteng Province

ERG2613



TSF	Tailings Storage Facility
ZAR	Zuid Afrikaanse Republiek

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1 INTRODUCTION

Digby Wells Environmental (hereafter Digby Wells) was requested by Ergo Mining (Pty) Ltd (Ergo) to conduct an Environmental Impact Assessment (EIA) study and Environmental Management Programme (EMP) Report, inclusive of specialist studies, for a Mining Right Application (MRA) in accordance with the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA). This heritage statement serves as the heritage component for the scoping phase as required under Section 39(3)(b)(iii) of the MPRDA and Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).

2 BACKGROUND INFORMATION OF PROJECT

2.1 Project Details

Ergo is currently conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps), created from historic gold mining located on the Witwatersrand, Gauteng. An MRA was submitted to the Department of Mineral Resources (DMR) by Ergo in terms of Section 22 of the MPRDA for the various tailings dumps as part of the Soweto Cluster in the District of Roodepoort, Gauteng Province (See Table 2-1).

Table 2-1: Tailings dumps included in the MRA and the associated farms

Tailings Dump	Farm
2/L/8; 2/L/9(2); and 2/L/12	Portions 17, 18 and 161 of the Farm Vogelstruisfontein 231 IQ
2/L/20; and 2/L/21	Portions 1 and 14 of the Farm Roodepoort 237 IQ
2/L/17; 2/L/18; 2/L/16; 2/A/5; and 2/A/6	Portions 1, 5 and 14 of the Farm Roodepoort 237 IQ
2/L/24	Portion of Portion 1 of the Farm Vlakfontein 238 IQ

It is the intention that the mining operation will make use of the infrastructure owned by Crown Gold Recoveries (Pty) Ltd (CGR) and the other assets held by Ergo. New reclamation plant and equipment will be constructed at the Soweto Cluster to enable slimes to be recovered by hydraulic monitoring and sands to be reclaimed by mechanical means. The

resulting slurry will be pumped by way of new pipelines via the CGR assets to the Ergo beneficiation plant for gold recovery. Tailings will be deposited on the Brakpan/Withok Tailings Storage Facility (TSF).

2.2 Description of Property and/or Affected Environment

The Soweto Cluster mine dumps neighbour the suburbs of Bram Fischerville, Meadowlands and Dobsonville of Soweto. They constitute a total mining footprint of approximately 887.5 ha. The surrounding environment is characterised by residential and industrial areas interspersed with numerous old tailings facilities from historical gold mining activities associated with the Durban Roodepoort Deep and Rand Leases Mines. The receiving environment of the proposed reclamation of the Soweto Cluster has been disturbed and thus has little aesthetic value.

2.2.1 Location Data

Table 2-2: Location data for the Ergo Soweto Cluster Project

Province	Gauteng Province
Magisterial district	Roodepoort Magisterial district
District municipality	City of Johannesburg District Municipality
Local municipality	City of Johannesburg Metropolitan Municipality
Town	Johannesburg
Farm name/s and number/s:	Vogelstuisfontein 231 IQ; Roodepoort 237 IQ; and Vlakfontein 238 IQ
Map reference	2627 BB
Co-ordinates for the centre of the project area	Latitude: S 26° 11' 54.5" Longitude: E 27° 51' 40.1
Location maps	The regional settings of the project area are depicted in Plans 1 – 3 in Appendix B

2.3 Relevant Contact Details

The contact details of the developer, consultant and landowners are provided in Table 2-3, Table 2-4 and Table 2-5 respectively.

Table 2-3: Client contact details

ITEM	COMPANY CONTACT DETAILS
Company	Ergo Mining (Pty) Ltd
Contact person	Greg Ovens
Tel no	011 470 2600
E-mail address	greg.ovens@drdgold.com
Postal address	P.O. Box 390 Maraisburg 1700

Table 2-4: Consultant contact details

ITEM	COMPANY CONTACT DETAILS
Company	Digby Wells Environmental
Contact person	Grant Beringer
Tel no	011 789 9495
Fax no	011 789 9498
E-mail address	grant.beringer@digbywells.com
Postal address	Private Bag X10046, Randburg, 2125

Table 2-5: Land owner contact details

Property	Title Deed Owner	Contact Information	Notification Method
Roodepoort 237 IQ Portion 1	Dino Prop (Pty) Ltd	381 Ontdekkers Road, Florida Park, Ext 3. Roodepoort, 1709 P. O. Box 268 Florida Hills, 1716	Advertisement, Site Notice and Letter
Roodepoort 237 IQ Portion 5			
Roodepoort 237 IQ Portion 14	Living Africa Dev (Pty) Ltd	No Information	Advertisement and Site Notice
Vlakfontein 238 IQ Portion 1	DRD Gold Ltd	Quadrum Office Park 1st Floor, Building 1 50 Constantia Boulevard Constantia Kloof Ext 28 Roodepoort 1709 P.O. Box 390 Maraisburg 1700	Advertisement, Site Notice and Letter

Property	Title Deed Owner	Contact Information	Notification Method
		(011) 470 2600	
Vogelstruisfontein 231 IQ Portion 17	Suid-Afrikaanse Spoorpendel Korporasie Ltd	No Information	Advertisement and Site Notice
Vogelstruisfontein 231 IQ Portion 18	Fleurhof Extension 2 (Pty) Ltd	Cedarwood House Ballywoods Office Park Bryanston, 2196 (011) 472 4325	Advertisement, Site Notice and Letter
Vogelstruisfontein 231 IQ Portion 161	Rand Leases Securitisation (Pty) Ltd	Rand Leases House, Peter Place Office Park 54 Peter Place 2191, P.O. Box 1 Florida, Johannesburg 1710	Advertisement, Site Notice and Letter

2.4 Legislative Framework

2.4.1 Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)

The requirements for a MRA are embodied under Section 22. Within this section of the MPRDA, it stipulates that (4) if an application is accepted by the Regional Manager, (a) an EIA must be conducted and EMP be submitted in terms of Section 39.

Section 39(3) stipulates that in preparation of an EMP – (b) the applicant must investigate, assess and evaluate the impact of the operation on – (iii) any national estate referred to in Section 3(2) of the NHRA with exception of the national estate contemplated in Section 3(2)(i)(vi) and (vii) of that Act.

2.4.2 National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)

The NEMA stipulates under Section 2(4)(a) that sustainable development requires the consideration of all relevant factors including (iii) the disturbance of landscapes and sites that constitute the nation's cultural heritage must be avoided, or where it cannot be altogether avoided, is minimised and remedied. Section 24(1) stipulates that in order to give effect to the general objectives of integrated environmental management laid down... the potential impact on - (c) the cultural heritage, of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of state

charged by law with authorising, permitting or otherwise allowing the implementation of an activity.

2.4.3 National Environmental Management: Waste Act, 2009 (Act No. 59 of 2009) (NEMWA)

The NEM:WA requires in terms of Section 48(b) that the likely effect of pollution on existing cultural heritage be taken into account. Section 48(c)(ii) requires that cultural heritage be protected from adverse change due to pollution.

2.4.4 National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)

Section 38(8) of the NHRA requires that heritage resources management be implemented if impact assessments are required in terms other legislation – the MPRDA, NEMA and NEM:WA in this case.- Where studies are undertaken in terms of Section 38(8) the heritage authorities are *commenting* authorities, provided that the *consenting* authority (for example the DMR) ensures that the study complies with fulfils the requirements of the relevant heritage resources authority in terms of Section 38(3). The consenting authority furthermore needs to take into account all statutory comment issued by the relevant heritage resources authority in terms of Section 38(8) prior to granting authorisation for activities and/or developments.

2.5 Summary of Stakeholder Engagement Plan (SEP)

Stakeholder engagement is required by the MPRDA under Section 22(4)(b) where it states that interested and affected parties must be notified and consulted with regards to the proposed project. This requirement is reiterated in the NHRA, Section 5(4) acknowledging the right of affected communities to be consulted and to participate in the management of heritage resources.

Please refer to the Draft Scoping Report for detailed records of the SEP for the Soweto Cluster Project.

2.6 Terms of Reference

Ergo has enlisted the services of Digby Wells to conduct an EIA and EMP in support of the MRA inclusive of relevant specialist studies in accordance with the MPRDA for the reclamation of the Soweto Cluster Dumps near Soweto and Roodepoort, Gauteng. In order to comply with the agreed Terms of Reference, a heritage study was required as one of the requisite studies.

2.7 Scope of Work

In order to comply with the legislated requirements, a Heritage Statement was compiled to inform the Notice of Intent to Develop (NID) required under Section 38 of the NHRA. The Heritage Statement includes appropriate information regarding existing and potential

heritage resources that may occur in the project location. The nature of the development was also described in sufficient detail to enable the South African Heritage Resources Agency (SAHRA) and Provincial Heritage Resources Authority – Gauteng (PHRA-G) to determine whether a Heritage Impact Assessment (HIA) is required.

Official comment from the relevant Heritage Resources Authority (HRA) will be summarised in a Statutory Comment Feedback (SCF) report and submitted to Ergo.

3 METHODOLOGY

In order to compile the Heritage Statement, a number of tasks were required to be completed. This study employed qualitative text-based research methodologies to aid in assessing the cultural landscape within which the Soweto Cluster Project is situated. These methodologies are discussed separately below.

3.1 Literature review

A literature review of relevant and available published works was completed to provide a baseline characterisation of the cultural landscape discussed under Section 5 below. Sources used to inform this baseline included peer reviewed academic publications, unpublished reports, relevant heritage assessments previously conducted and where applicable, relevant databases and authoritative websites. Sources that were consulted and cited in this report are listed under Section 10.

Due to the nature of the project and landscape, the literature review was focussed on the historical period. Due to the extensive development and alteration of the landscape over time, it is expected that little to no archaeological resources are likely to occur, therefore detailed review and discussion of prehistoric periods is irrelevant.

3.2 Historical layering

A review of historical cartographic information was undertaken to conduct historical layering. Historical layering is a process whereby diverse cartographic sources from various time periods are layered chronologically to:

- Enable the virtual representation of changes in the land use over time;
- Provide relative dates based on the presence or absence of features; and
- Identify potential locations where heritage resources may exist.

Historical maps, such as Jeppes 1899 Map Series of the Transvaal, the Major Jackson Series (MJS) and previous 1:50 000 topographic maps were reviewed. In addition, historical aerial imagery was reviewed, dating from 1938 to 1952.

The results from the historical layering contributed to the characterisation of the cultural landscape and are discussed under Section 5.4 below.

3.3 Site Naming

3.3.1 Confirmed sites identified during desktop study

Sites that were identified in previous assessment reports are named and numbered according to the system used in the respective reports but are prefixed with the relevant report or case number if available. For example, a heritage resource identified by Roodt (1999) described as an archaeological site and numbered Site 1 in that report will be:

1999-SAHRA-0021/1

Where the report or case numbers do not exist, the site names and / or numbering will be used, but prefixed with the relevant author. For example, a heritage resources identified by Van Schalkwyk (2007) described as an archaeological site and numbered '1' in that report will be:

Van Schalkwyk-2007/1

3.3.2 Unconfirmed sites identified during desktop study

Sites not previously recorded, but identified through historical layering, desktop studies or during field surveys were named using the SAHRIS case ID 4700, followed by the map sheet number and reference to the relevant NHRA section suffixed with the site number:

4700/2627BB/S.35-001

3.3.3 Sites identified during screening assessment

Sites identified during the screening assessment were named using the site naming format described in Section 3.3.2 above.

4 RESTRICTIONS AND LIMITATIONS

During the course of this study, the following restrictions and limitations were encountered:

- Heritage Screening Survey was not possible due to the time constraints and safety concerns. Therefore, sites identified during the literature review could not be verified; and
- Due to the change in land use through time, and associated alterations to the landscape, the potential for identifying any archaeological resources is limited, and has as such not been comprehensively included in the report.

5 STATE OF THE RECEIVING ENVIRONMENT/CULTURAL LANDSCAPE

5.1 Development context of Study Area

The Integrated Development Plan (IDP) deals with issues pertaining to the greater Johannesburg area. Region D, within which the Soweto Cluster Dumps are situated, is the most densely populated region of the City of Johannesburg District Municipality. Aspects within the IDP that are given high-priority status include skills development in dealing with unemployment, lack of education, and infrastructure development. Cultural development, tourism and conservation of heritage resources do not feature within the 2013/16 IDP as a priority but is listed as one of the functions under community development and within the Spatial Development Framework (SDF). Within the SDF under the principle of sustainability, one of the desired outcomes is the responsible use, protection and conservation of the city's cultural heritage resources (City of Johannesburg District Municipality, 2013).

5.2 Literature Review

The current landscape is dominated by historical industrial development associated with the Durban Roodepoort Deep and Rand Leases Mines and the established suburbs of Soweto. The resultant impact from these activities is the creation of the distinctly characteristic cityscape of Johannesburg as well as the alteration of the landscape through time from undisturbed Highveld through to its current state.

The study area has evidence for occupation over an extensive period of time, spanning from the Stone Age through to the historical period. Briefly, the Stone Age is associated with the manipulation of lithics to create tools. These date from as early as 2.5 million years ago through to less than 150 years ago (Lombard, et al., 2012). This period overlaps with the migration of Bantu speakers into southern Africa bringing with them agricultural technologies, herding and a settled way of life manifested through stone walling (Huffman, 2007). For the purposes of this study, the literature review was primarily focused on the historical period as activities associated with the project would be limited to the dump cluster and associated pipelines.

European settlers first arrived on the Highveld as Voortrekkers associated with the Great Trek of 1838, seeking land outside of British rule. During this period farms were established (Brodie, 2008), but the Highveld was to a large extent sparsely inhabited as attested by J.B Taylor who wrote in 1885 (von Ketelhodt, 2007, p. 4) while camping on the farm Langlaagte:

“For miles there was no sign of habitation”.

Under the Zuid Afrikaanse Republiek (ZAR) Government, immigrant burghers were allotted 2 farms, a freehold farm and loan farm (Brodie, 2008). In 1886 Gold was discovered on the Witwatersrand by George Harrison on the farm Langlaagte, owned by G. C. Oosthuizen. After the discovery, prospecting rights on the portion of Langlaagte where the reef was

identified was granted, and as word spread, the explosive development of the Witwatersrand was set in motion (von Ketelhodt, 2007). The land on which the project area is situated includes Roodepoort, Vlakfontein and Volgelstruisfontein farms, all of which were declared public diggings.

Shortly after the discovery of gold, it became evident that the gold deposit was in fact payable and in time, would not be suited to being worked by individual diggers. Rather, a different sort of effort, energy and finance would be required. This was accomplished through the backing of large companies (Brodie, 2008), including the more prestigious H. Eckstein & Co (later Rand Mines), The Gold Fields Group, and the Johannesburg Consolidated Investment Co Ltd (von Ketelhodt, 2007). The Durban Roodepoort Deep Mine was administered by Rand Lease Gold Mining Co Ltd (Rand Mines) from approximately 1897, after the Rand Mines shareholder began a systematic acquisition of the deep levels of many of the mines that started on the Central Rand (Anonymous, n.d.). The historic Rand Lease Mine was opened in the late 1800's by the Rand Leases (Vogelstuisfontein) Gold Mining Company Limited (Anonymous, n.d.). Rand Mines continued with the process of amalgamation of 17 different mining companies that involved acquisition of claims, water area rights and a complex exercise involving assets of various syndicates (von Ketelhodt, 2007).

With all the wealth in the Witwatersrand under the control of the ZAR and the restriction imposed on *Uitlanders*¹, Rhodes started to develop a plan to overthrow the ZAR government which would involve a revolt against the government of Paul Kruger, armed British forces to protect British citizens and the British High Commissioner travelling to Pretoria to ensure British "protection" of the Transvaal (Birkholtz, 2006). This plan ultimately culminated in the unsuccessful Jameson Raid of 1895. With all plan in place, the Reform Committee and Rhodes himself delayed the plan and even suggested it be dropped. Dr. Leander Starr Jameson, responsible for leading the armed force, continued with the plans despite these concerns. As the armed forces entered the Transvaal, the element of surprise was lost due to not severing the telegraphs lines properly, and after several skirmishes with Boer forces, surrendered on the farm Vlakfontein (Birkholtz, 2006).

An integral part of the mining industry was the use of a cheap labour force, initially associated with migrant African population, and later the addition of Chinese labour. These groups were housed in the many mining compounds either on or adjacent to the mine property, reducing transport costs and increase savings for the mines who would deduct communal eating and living costs from the workers' wages (Brodie, 2008). As Johannesburg grew, more people migrated into the town to work as domestic workers, shop workers, brick makers, washer men and so on although their employers had no interest in housing them. These groups found accommodation in either one of the three locations near the city centre

¹ The name used by the ZAR and its citizens to describe the recent arrival of foreigners, especially the British. These people were mostly associated with the Rand Gold Rush and lived in Johannesburg.

established in the 1890's for Africans, Indians or Muslims, or in the slums of the inner city. Following the Anglo-Boer War in 1902, the population grew rapidly with the influx of over 10 000 poor white Afrikaners who lost their farms through the 'scorched earth policy' of the British, taking up residence in increasingly crowded and racially mixed slums (Bonner & Segal, 1998). These groups were known as 'bywoners', a name given to poor white families settling on the Highveld after the war (Huffman, Hall, & Steel, 1991).

In 1905, the town of Klipspruit (present day Pimville) was established in reaction to the supposed outbreak of the bubonic plague in the Brickfields slums (present day Newtown) and was one of the first African townships, and the first suburb of Soweto. From the date of the establishment of Klipspruit, no Africans were permitted by law to reside in the city except as domestic servants residing in their employers' gardens, or as workers housed in industrial compounds. In 1907, Klipspruit started to receive waste as part of the Klipspruit Sewage Disposal Works although it did not even have a proper treatment plant until 1910. By 1919 some 105 000 Africans resided in Johannesburg, with only 4 000 living in municipal compounds such as Klipspruit. Most resisted these townships opting rather for the slums of the city (Bonner & Segal, 1998; Brodie, 2008).

To address the increasing populations in the Johannesburg slums, the Johannesburg City Council bought land on the farm Klipspruit Number 8 in 1930 to establish Orlando, or what they termed the 'biggest and finest township in the Union of South Africa'. Though this was the official stance, the conditions in Orlando were poor and there was a lack of facilities that could only be found in the city. By 1936, 12 000 people lived in Orlando and with the 'slum clearance programme' initiated by the Johannesburg City Council, the numbers were growing resulting in squatters. By 1946, squatters from Orlando forcibly occupied the construction site of the new Orlando West Township as a protest to what was said to be housing for black resident from areas the government wanted to declare 'white areas'. On 28 January 1947, the council conceded that the housing shortage and squatters was a serious problem that could no longer be controlled by force and established a new emergency camp called Moroko (Bonner & Segal, 1998).

With the establishment of the Apartheid Government, Soweto became the centre of political resistance for African communities. At the centre were grievances against the pass laws with forced removals and unaffordable rents also at the forefront of contention and thereby instigating the defiance campaign. Meadowlands was established in 1953 as the site for the relocation of Sophiatown residents and in 1955 the forced removals were carried out. A second major event in the history of Soweto in 1955 was the Congress of the People held at Kliptown between 26 and 27 June 1955. The congress was a culmination of a two year campaign aimed at drawing up a charter of demands on behalf of the disenfranchised black population (Bonner & Segal, 1998).

5.3 Review of Previous Heritage Reports

A total of seven heritage assessment reports surrounding the Soweto cluster were reviewed to aid in the identification of potential heritage resources that may be impacted upon through activities associated with the reclamation of the Soweto cluster dumps. These include:

- Leslie, M. 2001. Bram Fischerville Ext 7 – Heritage Impact Assessment. Unpublished report prepared by CEM Africa cc kept on file at SAHRA under 2001-SAHRA-0111
- Van Schalkwyk, J. 2003. A Survey of Heritage Resources in the Proposed Dobsonville X9 Development, Dobsonville, Soweto. Unpublished report prepared by the National Cultural History Museum kept on file at SAHRA under 2003-SAHRA-0130
- Van Schalkwyk, J. 2004. Heritage Impact Assessment for the Proposed Waste Blending Platform Project, Roodepoort District, Gauteng. Unpublished report prepared by the National Cultural History Museum kept on file at SAHRA under 2004-SAHRA-0111
- Birkholtz, P.D. 2006. Phase 1 Heritage Impact Assessment for the Proposed Jameson Field Extension 1 Residential Township Development, Gauteng Province. Unpublished report prepared by Archaeology Africa cc kept on file at SAHRA under 2006-SAHRA-0097
- Van Vollenhoven, A.C. and Pelsler, A.J. 2007. A Report on a Cultural Heritage Impact Assessment on Erf 85, Chamdor, Krugersdorp for the William Tell Particle Boards and Medium Density Manufacturing Plant. Unpublished report prepared by Archaeos Culture and Cultural Resources Consultants kept on file at SAHRA under 2007-SAHRA-0407
- Van Schalkwyk, J. 2013. Basic Cultural Heritage Assessment for the Proposed Construction of a New Bulk Water Pipeline in the Fleurhof Region of the City of Johannesburg Local Municipality. Unpublished report prepared by J. van Schalkwyk kept on file at SAHRA under 2001-SAHRA-0111

5.4 Historical Layering

In order to understand the development of the area within which the Soweto cluster is situated, a survey of available historic cartographic information and aerial imagery was conducted. The earliest cartographic information was from the 1899 Jeppes Map of the Transvaal. Clearly depicted on this map are the farms Roodepoort 43, Vlakfontein 45 and Vogelstruisfontein 55 and 52 with the railway, Roodepoort Stations, and the mines situated on Roodepoort and Vogelstruisfontein (See Figure 5-1). What this clearly indicates is that the Witwatersrand was heavily industrialised only some 13 years after the discovery of gold in 1886.

The earliest record of aerial imagery for the study area dates to 1938. A review of the flights plans indicated that two different flight paths from that year covered the project area, these include:

- Flight Path – 129_15; and
- Flight Path – 129_16

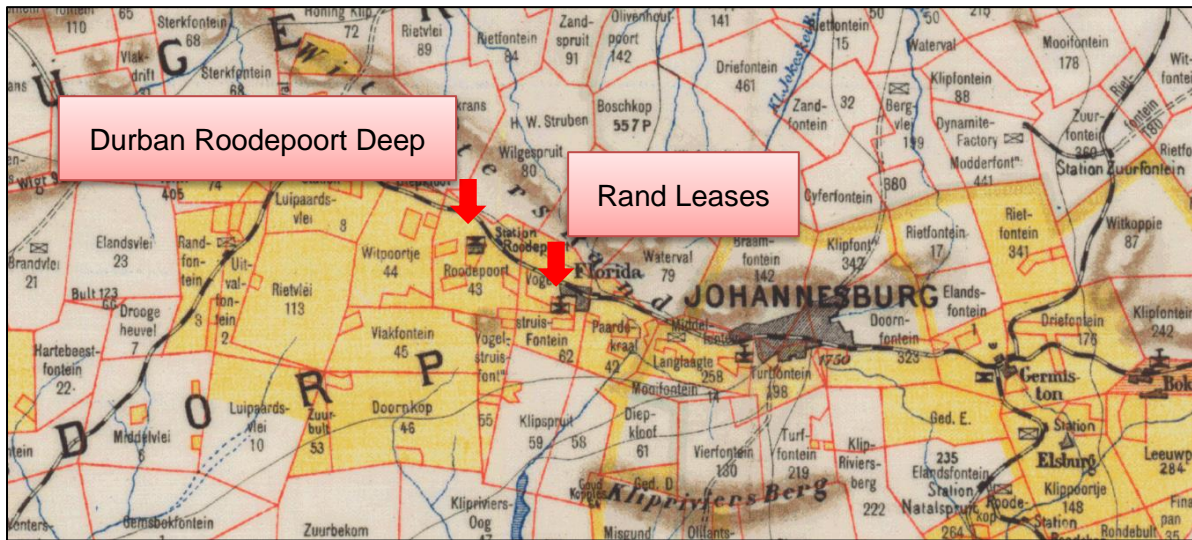


Figure 5-1: 1899 Jeppes Map of the Transvaal with farms, railway and mines depicted

A survey of these aerial images indicated that both the Durban Roodepoort Deep and Rand Leases mines were fully operational and deposition on the slimes and sand dumps was well underway, as illustrated in Figure 5-2 below.



Figure 5-2: Aerial imagery dating to 1938 of Durban Roodepoort Deep and Rand Leases respectively

Aerial imagery dating from 1952 clearly indicates that the mines dumps adjacent to Durban Roodepoort Deep and Rand Leases Mines were established, and the construction of 2/L/24 on Vlakfontein was underway.



Figure 5-3: Aerial imagery dating to 1952. Note the footprint of 2/L/24 in the southern portion of the photograph

At this time, the predominant use of the land as seen in Figure 5-3 is for mining related purposes, with some small sections of land being utilised for what appears to be agricultural purposes. As discussed under Section 5 above, this area was later developed for settlement. When compared to contemporary satellite imagery as depicted in Figure 5-4 below, it is evident that expansive urbanisation of the area had taken place over the last 60 years, resulting in a change of land use from predominantly industrial to suburban.



Figure 5-4: Contemporary satellite imagery of the Soweto Cluster Project

6 IDENTIFIED HERITAGE RESOURCES

Heritage resources identified during the desktop study are summarised in Table 6-1 below.

Table 6-1: Identified heritage resources within and surrounding the Soweto Cluster Project

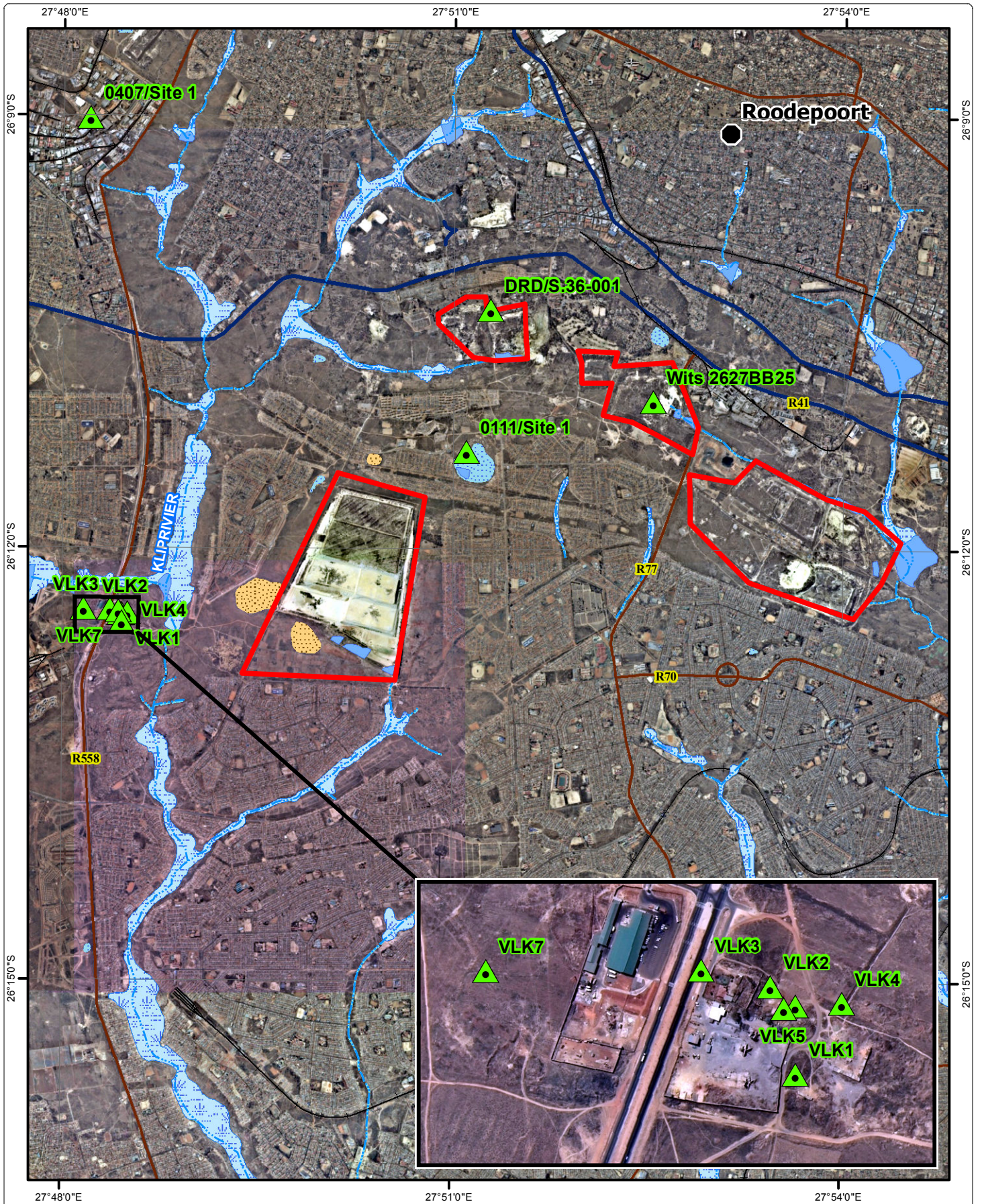
Map ID	Longitude	Latitude	Description	Distance from Project Area (m)	Direction from Project Area
Wits 2627BB25	-26.182892	27.875488	S.34 - Labelled as Rand Leases on the Wits Database. Actually location of Durban Roodepoort Deep.	Within Project Boundary	
VLK6	-26.2076	27.807584	S.34 - Historic house possibly older than 60 years	1 900	West
0407/Site 1	-26.150278	27.803333	S.34 – Industrial era buildings	5 121	North West
DRD/S.36-001	-26.172321	27.854679	S.36 - Burial ground identified in the DRD EIA / EMP	97	North
VLK7	-26.20705	27.802694	S.36 - Burial ground for farm workers on Vlakfontein	2 392	West

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Map ID	Longitude	Latitude	Description	Distance from Project Area (m)	Direction from Project Area
VLK5	-26.20763	27.807397	S.34 - Historic house possibly older than 60 years	1 934	West
VLK4	-26.20757	27.808309	S.34 - Waenhuis / Stables	1 844	West
VLK3	-26.20707	27.806102	S.37 - Jameson Raid Memorial	2 100	West
0111/Site 1	-26.18875	27.851639	S.35 - 2 Stone Age lithics near pan (Also reference on the Wits Database as 2627BB33)	1 145	South
VLK2	-26.20732	27.807187	S.37 - Jameson Surrender	1 947	West
VLK1	-26.20857	27.807573	S.37 - Vlaktefontein Monument	1 847	West



ERGO SOWETO CLUSTER: Heritage Sites

Legend		Heritage Sites
	Major Town	Heritage Sites
	Soweto Cluster	
	Highway	
	Main Road	
	Railway	
	Non-Perennial River	
	Perennial River	
	Dam	
	Wetland	
	Non-Perennial Pan	
	Perennial Pan	

Projection: Transverse Mercator
 Central Meridian: 27°E
 Datum: Hartebeesthoek 1994
 Date: 23/01/2014
 Ref #: pks.ERG2613.201401.136

Kilometres
1:65 000

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7 SOURCES OF RISK

The activities associated with the reclamation of the dumps, as described in Table 7-1 could potentially pose a risk to identified heritage resources. The potential risks are discussed according to the various phases of the project below.

Table 7-1: List of activities associated with the reclamation of the Soweto cluster dumps

	Activity	Description	Source of Risk
Construction Phase			
1.	Employment of workers	Preparation for reclamation activities	None
2.	Removal of Vegetation	Vegetation will be removed on the dump, and clearing for the construction of temporary infrastructure, pump stations and access roads.	<p>This activity constitutes development as defined in terms of Section 2(viii) (f) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including any removal or destruction of trees, or removal of vegetation or topsoil.’</p> <p>The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (c) of the NHRA.</p>
3.	Construction of pipelines	A slurry and water line will be constructed and will meet up with the existing Crown-Ergo pipeline	<p>This activity constitutes development as defined in terms of Section 2(viii) (a) and (b) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including construction, alteration, demolition, removal or change of use of a place or a structure at a place [and] carrying out any</p>

	Activity	Description	Source of Risk
			works on or over or under a place.’ The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (a) of the NHRA.
4.	Operation of construction machinery and vehicles	Construction machinery and vehicles will be utilised to construct the temporary infrastructure, pump station and access roads. Vehicles will be used to transport equipment on site.	This activity constitutes development as defined in terms of Section 2(viii) (b) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including carrying out any works on or over or under a place.’ The identified risk is therefore changes to resources that are generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 that may occur in the proposed project area.
5.	Temporary storage of construction materials and hazardous material such as contaminated soil	Construction and hazardous material will be temporarily stored on site.	This activity constitutes development as defined in terms of Section 2(viii) (a) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including construction, alteration, demolition, removal or change of use of a place or a structure at a place.’ The identified risk is therefore changes to resources that are generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 that may occur in the

	Activity	Description	Source of Risk
			<p>proposed project area.</p> <p>The identified risk is therefore change of use of a place or structure.</p>
Operational Phase			
1.	Reclamation Activities	2L24 will be reclaimed first, followed by the other 11 dumps	<p>Reclamation activities will result in the destruction of dumps (structures) older than 60 years.</p> <p>This activity constitutes development as defined in terms of Section 2(viii) (a), (b) and (c) where ‘any physical intervention ...result in a change to the nature, appearance or physical nature of a place including construction, alteration, demolition, removal or change of use of a place or a structure at a place [and] carrying out any works on or over or under a place [and] any change to the natural or existing condition or topography of land.’</p> <p>The identified risk is therefore changes in the character of the site described in Sections 34 (1) and 38(1) (c) of the NHRA, in addition to consideration should be given to the possible protected status of the land covered by the dumps as described in Section 28(1) (c) of the NHRA.</p>
2.	Operation of pipes	Slurry will be transported to one of the Ergo Plants.	None

	Activity	Description	Source of Risk
3.	Operation of Pump Station	Operation of pump station.	None
Decommissioning Phase			
1.	Decommissioning activities	Decommissioning Activities.	None
2.	Rehabilitation of site	The project area will be rehabilitated.	None
Post-closure Phase			
1.	Groundwater	Potential for acid mine drainage.	<p>Although this is not an activity as such, acid mine drainage may result in changes to the 'natural or existing condition or topography of land' as defined in terms of terms of Section 2(viii) (e).</p> <p>The identified risk is therefore potential changes to the character of the sites described in Sections 27, 28, 31, 32, 34, 35, 36 and 37 of the NHRA.</p>

8 DISCUSSION OF FINDINGS

As is evidenced by the desktop study, the project is located within a predominantly historical and industrial and associated with the historical period. The Soweto Cluster Dumps are the result of mining activities associated with the Durban Roodepoort Deep and Rand Leases Mines. These mines are some of the earliest established mines on the Witwatersrand, and are intrinsically valuable in the mining history of the Witwatersrand and the city of Johannesburg. The resultant tailings dams and sand dumps are integrated elements in the history, heritage and identity of Johannesburg.

Other notable historic events in the surrounding areas include the culmination of the 1895 Jameson Raid on the farm Vlakfontein. It is in this location that the botched attempt to overthrow the ZAR government ended with the surrender of Jameson and the arrest and trial of many prominent British figures associated with the Reform Committee.

Later in time the Township of Soweto was established. Meadowlands specifically, being declared in 1953 to accommodate for the forced removals of residents from Sophiatown in 1955 has a direct association with the history of the Apartheid regime.

The sources of risk posed to heritage resources (See Table 7-1 above) are limited to the construction and operational phase of the project. Potential sources of risk include the removal of vegetation, construction of a pipeline, operation of construction machinery and vehicles, and reclamation of the dumps. When one considers the historic context of the project area, consideration must be given to the potential levels of change the project activities may have on tangible heritage resources, such as the dumps and mining infrastructure, as well as the intangible aspects, for example the contribution to the sense of place of the historical landscape.

9 RECOMMENDATIONS AND CONCLUSION

Based on the description of activities associated with the Soweto Cluster Dumps, including clearing of vegetation, construction of pipeline, and reclamation of dumps, it is recommended that a Heritage Impact Assessment be conducted with:

- A specific focus on the historical landscape including an inventory of historical structures, monuments and memorials within the project area; and
- Exemption from archaeological and palaeontological components.

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Appendix A: Curriculum Vitae



DIGBY WELLS
ENVIRONMENTAL

JUSTIN DU PIESANIE

Mr. Justin du Piesanie
Heritage Management Consultant
Social Sciences Department
Digby Wells Environmental

1 EDUCATION

University of the Witwatersrand

- BA Degree (2004)
- BA Honours Degree (2005) - Archaeology
 - Title of Dissertation - Seal Skeletal Distribution of Herder and Forager Sites at Kasteelberg, Western Cape Province of South Africa.
- Master of Science (MSc) Degree (2008) – Archaeology
 - Title of Dissertation – Understanding the Socio-Political Complexity of Leokwe Society during the Middle Iron Age in the Shashe-Limpopo Basin through a Landscape Approach

University of Cape Town

- Continued Professional Development Programme, Architectural and Urban Conservation: Researching and Assessing Local Environments (2013)

2 LANGUAGE SKILLS

English First Language

Afrikaans Second Language

3 EMPLOYMENT

2011 to Present: Heritage Management Consultant at Digby Wells Environmental

2009 to 2011: Archaeology Collections Manager at the University of the Witwatersrand.

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Directors: A Sing*, AR Wilke, LF Koeslag, PD Tanner (British)*, AJ Reynolds (Chairman) (British)*, J Leaver*, GE Trusler (C.E.O)

*Non-Executive



- 2009 to 2011: Freelance Archaeologist for Archaeology Resource Management (ARM), Matakoma Heritage Consultants, Wits Heritage Contracts Unit & Umlando Heritage Consultants.
- 2006 to 2007: Tour Guide at Sterkfontein Caves World Heritage Site.

4 EXPERIENCE

I have 5 years experiences in the field of heritage resources management (HRM) including archaeological and heritage assessments, grave relocation, social consultation and mitigation of archaeological sites. During my studies I was involved in academic research projects associated with the Stone Age, Iron Age, and Rock Art. These are summarised below:

- Wits Fieldschool - Excavation at Meyersdal, Klipriviersberg Johannesburg (Late Iron Age Settlement).
- Wits Fieldschool - Phase 1 Survey of Prentjiesberg in Ugie / Maclear area, Eastern Cape.
- Wits Fieldschool – Excavation at Kudu Kopje, Mapungubwe National Park Limpopo Province.
- Wits Fieldschool – Excavation of Weipe 508 (2229 AB 508) on farm Weipe, Limpopo Province.
- Survey at Meyerdal, Klipriviersberg Johannesburg.
- Mapping of Rock Art Engravings at Klipbak 1 & 2, Kalahari.
- Survey at Sonop Mines, Windsorton Northern Cape (Vaal Archaeological Research Unit).
- Excavation of Kudu Kopje, Mapungubwe National Park Limpopo Province.
- Excavation of KK (2229 AD 110), VK (2229 AD 109), VK2 (2229 AD 108) & Weipe 508 (2229 AB 508) (Origins of Mapungubwe Project)
- Phase 1 Survey of farms Venetia, Hamilton, Den Staat and Little Muck, Limpopo Province (Origins of Mapungubwe Project)
- Excavation of Canteen Kopje Stone Age site, Barkley West, Northern Cape
- Excavation of Khami Period site AB32 (2229 AB 32), Den Staat Farm, Limpopo Province

Since 2011 I have been actively involved in environmental management throughout Africa, focusing on heritage assessments in compliance with International Finance Corporation (IFC) Performance Standards and other World Bank Standards and Equator Principles. This exposure to environmental, and specifically heritage management has allowed me to work to international best practice standards in accordance with international conservation bodies such as UNESCO and ICOMOS. In addition, I have also been involved in the collection of quantitative data for a Relocation Action Plan (RAP) in Burkina Faso. The exposure to this aspect of environmental management has afforded me the opportunity to understand the significance of integration of various studies in the assessment of heritage resources and recommendations for feasible

mitigation measures. I have work throughout South Africa, as well as Burkina Faso, the Democratic Republic of Congo, Liberia and Mali.

5 PROJECT EXPERIENCE

- 2005-2008. Assistant Archaeologist conducting Phase 1 Surveys and Phase 2 Archaeological Mitigations. Archaeological Resources Management (ARM).
 - Phase 2 Mitigation at Meyersdal, Klipriviersberg Johannesburg;
 - Phase 1 Mitigation – Mapping of Late Iron Age Site in Pilansberg, Sun City;
 - Phase 1 Mitigation – Survey of Witbank dam development;
- 2009-2011. Freelance Consulting Archaeologist. Matakoma, Matakoma-ARM, Heritage Contracts Unit, Umlando Consulting, Strategic Environmental Focus.
 - Phase 1 Mitigation – Survey of Glen Austin AH, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 34, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 38, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 44, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 46, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 47, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 48, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 49, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 50, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 61, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 62, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 71, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein AH Holding 72, Johannesburg;
 - Phase 1 Mitigation – Survey of Modderfontein 351R Portion 40, Johannesburg;
 - Phase 1 Mitigation – Survey of Rhino Mines, Thabazimbi Limpopo Province;
 - Phase 1 Mitigation – Survey of Moddergat 389KQ, Schilpadnest 385KQ, Swartkop 369KQ, Cronimet Project, Thabazimbi Limpopo Province;
 - Desktop Study – Desktop study for the Eskom Thohoyandou SEA Project, Limpopo Province;
 - Phase 2 Mitigation – Excavation of Iron Age site on Wenzelrust, Shoshanguve Gauteng;
 - Phase 1 Mitigation – Mapping of Late Stone Age shelter, Parys, Free State;
 - Phase 1 Mitigation – Survey of Vaalkrans Battlefield for the Transnet NMPP Line;



- Phase 1 Mitigation – Survey of Portion 222 of Mindale Ext 7 Witpoortjie 254 IQ & Portion 14 of Nooitgedacht 534 IQ, Johannesburg;
- Phase 2 Mitigation – Excavation of Site 19 for the Anglo Platinum Mines Der Brochen & Booyensdal, Steelpoort, Mpumalanga;
- Phase 1 Mitigation – Mapping of sites 23, 26, 27, 28a & b for the Anglo Platinum Mines Der Brochen & Booyensdal, Steelpoort, Mpumalanga;
- Desktop Study - Desktop study for the inclusion into the Thohoyandou Electricity Master Network for Eskom, Limpopo Province;
- Phase 1 Mitigation – Mapping of historical sites as part of the mitigation for the expansion of the Bathlako Mine's impact area;
- 2011-Present. Heritage Management Consultant, Digby Wells Environmental.
 - Kibali Grave Relocation Project (KGRP) for the Kibali Gold Project, Randgold Resources, Democratic Republic of Congo;
 - Heritage Assessment and Survey for the proposed Kibali Hydro Power Stations, Randgold Resources, Democratic Republic of Congo;
 - Heritage Impact Assessment & Survey of the farm Vygenhoek for the Everest North Mining Project, Aquarius Resources , Steelpoort, Mpumalanga;
 - Heritage Impact Assessment for the Proposed Geluksdal Tailings Storage Facility and Pipeline Infrastructure, Gold One International Ltd, Johannesburg, Gauteng Province;
 - Burial Grounds and Graves Survey (BGGs) for Platreef Resources, Mokopane, Limpopo Province;
 - Archaeological Impact Assessment and mitigation of sites for the Boikarabelo Coal Mine, Resource Generation, Steenbokpan, Limpopo Province;
 - Watching Brief for Bokoni Platinum Mines (Pty) Ltd, Burgersfort, Limpopo Province;
 - Heritage Statement for Kennedy's Vale Platinum Operations on the Farm Kennedy's Vale 361 KT, Rhodium Reefs Limited, Steelpoort, Mpumalanga Province;
 - Socio-Economic and Asset Survey, SEGA Gold Mining Project, Cluff Gold PLC, Burkina Faso;
 - Specialist review of Heritage Impact Assessment report for the SEGA Gold Mining Project, Cluff Gold PLC, Burkina Faso;
 - Heritage Impact Assessment for the Consbrey and Hawar Collieries, Msobo, Breyton and Chrissiesmeer, Mpumalanga Province;
 - Initiation of the Grave Relocation Process, including social consultation for the New Liberty Mining Project, Aureus, Liberia;
 - Heritage Scoping Report for the Falea Uranium Mine, Rockgate Capital, Mali;



- Heritage Impact Assessment for the Putu Iron Ore Mine, Road, Railway and Port, Atkins Limited, Liberia;
- Heritage Statement for the Sasol Twistdraai Fine Coal Disposal Project, ERM South Africa, Mpumalanga Province;
- Project Management of the Heritage Assessment for the proposed Daleside Acetylene Gas Production Facility, ERM South Africa, Gauteng Province;
- Social consultation for the Nzoro 2 Hydro-Power Station Relocation Action Plan Project, Randgold Resources, Democratic Republic of Congo;
- Fatal Flaw Analysis for the AMD Eastern Basin Project, Aecom, Gauteng Province;
- Heritage Statement for the Soweto Cluster Reclamation Project, Ergo, Gauteng Province

6 PROFESSIONAL AFFILIATIONS

Society for Africanist Archaeologists (SAfA) Member

International Council on Monuments and Sites (ICOMOS) South Africa Member

7 PROFESSIONAL REGISTRATION

Association of Southern African Professional Archaeologists (ASAPA): Professional & CRM Member

8 PUBLICATIONS

- Huffman, T.N. & du Piesanie, J.J. 2011. Khami and the Venda in the Mapungubwe Landscape. *Journal of African Archaeology* 9(2): 189-206

JOHAN NEL

Mr Johan Nel

Unit manager: Heritage Resources Management

Social Sciences

Digby Wells Environmental

1 EDUCATION

Date	Degree(s) or Diploma(s) obtained	Institution
2014	Integrated Heritage Resources Management Certificate, NQF Level 6	Rhodes University
2002	BA (Honours) (Archaeology)	University of Pretoria
2001	BA	University of Pretoria
1997	Matric with exemption	Brandwag Hoërskool

2 LANGUAGE SKILLS

Language	Speaking	Writing	Reading
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

3 EMPLOYMENT

Period	Company	Title/position
09/2011 to present	Digby Wells Environmental	Manager: Heritage Resources Management unit
05/2010-2011	Digby Wells Environmental	Archaeologist
10/2005-05/2010	Archaic Heritage Project Management	Manager and co-owner



2003-2007		Freelance archaeologist
	Rock Art Mapping Project	Resident archaeologist
2002-2003	Department of Anatomy, University of Pretoria	Special assistant: Anthropology
2001-2002	Department of Anatomy, University of Pretoria	Technical assistant
1999-2001	National Cultural History Museum & Department of Anthropology and Archaeology, UP	Assistant: Mapungubwe Project,

4 EXPERIENCE

Johan Nel has 13 years of combined experience in the field of cultural heritage resources management (HRM) including archaeological and heritage assessments, grave relocation, social consultation and mitigation of archaeological sites. I have gained experience both within urban settings and remote rural landscapes. Since 2010 I have been actively involved in environmental management that has allowed me to investigate and implement the integration of heritage resources management into environmental impact assessments (EIA). Many of the projects since have required compliance with International Finance Corporation (IFC) requirements and other World Bank standards. This exposure has allowed me to develop and implement a HRM approach that is founded on international best practice and leading international conservation bodies such as UNESCO and ICOMOS. I have worked in most South African Provinces, as well as Swaziland, the Democratic Republic of the Congo, Liberia and Sierra Leone. I am fluent in English and Afrikaans, with excellent writing and research skills.

5 PROFESSIONAL REGISTRATION

Position	Professional Body	Registration Number
Council member	Association for Southern African Professional Archaeologists (ASAPA); ASAPA Cultural Resources Management (CRM) section	095
Member	International Association of Impact Assessors (IAIA)	N/A
Member	International Council on Monuments and Sites (ICOMOS)	
Member	Society for Africanist Archaeologists (SAfA)	N/A



6 PUBLICATIONS AND CONFERENCE PAPERS

Authors and Year	Title	Published in/presented at
Nel, J. (2001)	Cycles of Initiation in Traditional South African Cultures.	South African Encyclopaedia (MWEB).
Nel, J. 2001..	Social Consultation: Networking Human Remains and a Social Consultation Case Study	Research poster presentations at the. Bi-annual Conference (SA3) Association of Southern African Professional Archaeologists the National Museum, Cape Town
Nel, J. 2002.	Collections policy for the WG de Haas Anatomy museum and associated Collections.	Unpublished. Department of Anatomy, School of Medicine: University of Pretoria.
Nel, J. 2004..	Research and design of exhibition for Eloff Belting and Equipment CC	Institute of Quarrying 35th Conference and Exhibition on 24 – 27 March 2004
Nel, J. 2004.	Ritual and Symbolism in Archaeology, Does it exist?	Research paper presented at the Bi-annual Conference (SA3) Association of Southern African Professional Archaeologists: Kimberley
Nel, J & Tiley, S. 2004.	The Archaeology of Mapungubwe: a World Heritage Site in the Central Limpopo Valley, Republic of South Africa.	Archaeology World Report, (1) United Kingdom p.14-22.
Nel, J. 2007.	The Railway Code: Gautrain, NZASM and Heritage.	Public lecture for the South African Archaeological Society, Transvaal Branch: Roedean School, Parktown.
Nel, J. 2009.	Un-archaeologically speaking: the use, abuse and misuse of archaeology in popular culture.	The Digging Stick. April 2009. 26(1): 11-13: Johannesburg: The South African Archaeological Society.
Nel, J. 2011.	'Gods, Graves and Scholars' returning Mapungubwe human remains to their resting place.' In: Mapungubwe Remembered.	University of Pretoria commemorative publication: Johannesburg: Chris van Rensburg Publishers.



Nel, J. 2012	HIAs for EAPs.	. Paper presented at IAIA annual conference: Somerset West.
Nel, J. 2013.	The Matrix: A proposed method to evaluate significance of, and change to, heritage resources.	Paper presented at the 2013 ASAPA Biennial conference: Gaborone, Botswana.
Nel, J. 2013	HRM and EMS: Uncomfortable fit or separate process.	. Paper presented at the 2013 ASAPA Biennial conference: Gaborone, Botswana.

7 PROJECT EXPERIENCE

- 2003-2004. Freelance consulting archaeologist. Archaeological Impact Assessment. Roodt&Roodt. RSA. Limpopo, Mpumalanga, Northwest. Project manager/specialist
- 2004-2005. Resident archaeologist Rock Art Mapping Project. Archaeological surveys. UKZN. RSA. Didima, KZN. Specialist
- 2006. Exploratory excavation of an unknown cemetery at Du Preezhoek, Fountains Valley, Portion 383 of the farm Elandspoort 357 JR, Pretoria, Gauteng. Section 36 Grave relocation. Bombela Civil Joint Venture. RSA. Pretoria, Gauteng. Specialist
- 2006. Report on exhumation, relocation and re-internment of 49 graves on Portion 10 of the farm Tygervallei 334 JR, Kungwini Municipality, Gauteng. Section 36 Grave relocation. D. Georgiades East Farm (Pty) Ltd. RSA. Kungwini, Gauteng. Specialist
- 2006. Social consultation for Elawini Lifestyle Estate Grave Relocation. Section 36 Consultation. PGS (Pty) Ltd. RSA. Nelspruit, Mpumalanga. Project manager/specialist
- 2007-2008. Research report on the remains of kings Mampuru I and Nyabela. Research report. National Department of Arts and Culture. RSA. Graafwater, Western Cape. Specialist
- 2007. Summary report: Old dump on premises of the new Head Offices, Department of Foreign Affairs, Pretoria, Gauteng. Archaeological Impact Assessment. Imbumba-Aganang D & C Joint Venture. RSA. Pretoria, Gauteng. Project manager/specialist
- 2007. Final consolidated Heritage Impact Assessment report: Proposed development of high-cost housing and filling station, Portion of the farm Mooiplaats 147 JT. Heritage Impact Assessment. Go-Enviroscience. RSA. Schoemanskloof, Mpumalanga. Project manager/specialist
- 2007. Final consolidated report: Watching Brief on Soutpansberg Road Site for the new Head Offices of the Department of Foreign Affairs, Pretoria Gauteng. Section 35 Phase 2 Archaeological Mitigation. Imbumba-Aganang D & C Joint Venture. RSA. Pretoria, Gauteng. Project manager/specialist



- 2007. Recommendation of Exemption: Above ground SASOL fuel storage tanks located at grain silos in localities in the Eastern Free State. Request for Exemption. SASOL (Pty) Ltd. RSA. Eastern Free State. Project manager/specialist
- 2007. Final consolidated report: Phase 2 test excavations ascertaining the existence of alleged mass graves, Tlhabane West, Extension 2, Rustenburg, Northwest Province. Section 36 Test excavations. Bigen Africa Consulting Engineers. RSA. Rustenburg, Northwest. Project manager/specialist
- 2007. Archaeological investigation of Old Johannesburg Fort. Section 35 Phase 2 Archaeological Mitigation. JDA. RSA. Johannesburg, Gauteng. Project manager/specialist
- 2007. Social consultation for Motaganeng Residential Development Grave Relocation. Section 36 Consultation. PGS (Pty) Ltd. RSA. Burgersfort, Limpopo. Project manager/specialist
- 2007. Repatriation of Mapungubwe Human Remains. Repatriation. DEAT. RSA. Mapungubwe, Limpopo. Project manager/specialist
- 2007. Research report on cultural symbols. Research report. Ministry of Intelligence Services. RSA. Graafwater, Western Cape. Project manager/specialist
- 2008. Phase 1 Heritage and Archaeological Impact Assessment: Proposed establishment of an access road between Sapekoe Drive and Koedoe Street, Erf 3366 (Extension 22) and the Remainder of Erf 430 (Extension 4). Archaeological Impact Assessment. AGES (Polokwane). RSA. Tzaneen, Limpopo. Specialist
- 2008. Heritage Impact Assessment for proposed water pipeline routes, Mogalakwena District, Limpopo Province. Heritage Statement. AGES (Polokwane). RSA. Mogalakwena District Municipality, Limpopo. Specialist
- 2008. Final report: Heritage resources Scoping survey and preliminary assessment for the Transnet Freight Line EIA, Eastern Cape and Northern Cape. Heritage Statement. Transnet. RSA. Eastern Cape; Northern Cape. Specialist
- 2008. Heritage resources scoping survey and preliminary assessment: Proposed establishment of township on Portion 28 of the farm Kennedy's Vale 362 KT, Steelpoort, Limpopo Province. Heritage Statement. AGES (Polokwane). RSA. Steelpoort, Limpopo. Specialist
- 2008. Report on skeletal material found at Pier 30, R21 Jones Street offramp, Kempton Park. Heritage Statement. Bombela Civil Joint Venture. RSA. Kempton Park, Gauteng. Specialist
- 2008. Social consultation for Smoky Hills Platinum Mine Grave Relocation. Section 36 Consultation. PGS (Pty) Ltd. RSA. Maandagshoek, Limpopo. Specialist
- 2008. Southstock Collieries Grave Relocation. Section 36 Grave relocation. Doves Funerals, Witbank. RSA. Southstock, Mpumalanga. Specialist

- 2008. Social consultation for Zondagskraal Coal Mine Grave Relocation. Section 36 Consultation. PGS (Pty) Ltd. RSA. Zondagskraal, Mpumalanga. Specialist
- 2009. Proposed road upgrade of existing, and construction of newroads in Burgersfort, Limpopo Province. Archaeological Impact Assessment. AGES (Polokwane). RSA. Burgersfort, Limpopo. Specialist
- 2009. Randwater Vlakfontein-Mamelodi water pipeline survey. Heritage Impact Assessment. Archaeology Africa cc. RSA. Pretoria, Gauteng. Specialist
- 2009. Van Reenen Eco-Agri Development Project. Heritage Impact Assessment. Go-Enviroscience. RSA. Vanreenen, Freestate/KwaZulu-Natal. Specialist
- 2009. Social consultation for Zonkezizwe Grave Relocation. Section 36 Consultation. PGS (Pty) Ltd. RSA. Midrand, Gauteng. Specialist
- 2009. Heritage Impact Assessment for conversion of PR to MRA. Heritage Impact Assessment. Georock Environmental. RSA. Musina, Limpopo. Specialist
- 2010-2012. Kibali Gold Mine Grave Relocation. International grave relocation project. Randgold Resources. DRC. Watsa, Province Orientale. Specialist
- 2010. Archaeological Impact Assessment for Galaxy Gold Mine Tailings Dam Extension, Barberton, Mpumalanga Province. Archaeological Impact Assessment. Galaxy Gold. RSA. Barberton, Mpumalanga. Specialist
- 2010. Archaeological Impact Assessment for the HCI Khusela Coal: Palesa Extension ESIA Update on portions of the farm Roodepoort 349 JR, Thembisile Local Municipality (Mpumalanga) and Kungwini Municipality (Gauteng). Archaeological Impact Assessment. HCI Khusela. RSA. Mpumalanga; Gauteng. Specialist
- 2010. Heritage scoping survey for the amendment of the existing City Deep EMP for the reclamation of Slimes Dam 3/L/42 and 3/L/40. Heritage Statement. Crown Gold Recoveries. RSA. Johannesburg, Gauteng. Specialist
- 2010. Letter of Recommendation of Exemption for the proposed Crown Gold Recoveries (Pty) Ltd Pipeline Project. Request for Exemption. Crown Gold Recoveries. RSA. Johannesburg, Gauteng. Specialist
- 2010. Mitigation of an archaeological metalworking site for Kibali Gold Mine. Archaeological mitigation. Randgold Resources. DRC. Watsa, Province Orientale. Specialist
- 2010. Heritage Impact Assessment for Nzoro Hydropower Station. Heritage Impact Assessment. Randgold Resources. DRC. Watsa, Province Orientale. Specialist
- 2010. Heritage Impact Assessment for Temo Coal EIA. Heritage Impact Assessment. Temo Coal. RSA. Steenbokpan, Limpopo. Specialist
- 2011-2012. Platreef Platinum Mine Burial Grounds and Graves Census. Burial Grounds and Graves Census. Platreef (Pty) Ltd. RSA. Mokopane, Limpopo. Project manager/specialist



- 2011. Addendum to Phase 1 Archaeological Impact Assessment for the Boikarabelo Coal Mine (proposed railway link from the farm Kruishout to the farm Buffelsjagt). Archaeological Impact Assessment. Resources Generation. RSA. Lephalale, Limpopo. Project manager/specialist
- 2011. Heritage Impact Assessment for Koidu Diamond Mine. Heritage Impact Assessment. Koidu . Sierra Leone. Koidu, . Project manager/specialist
- 2011. Mitigation of an archaeological metalworking site for Koidu Diamond Mine. Archaeological mitigation. Koidu . Sierra Leone. Koidu, . Project manager/specialist
- 2011. Nzoro hydropower station ESIA. Heritage Impact Assessment. Randgold Resources. DRC. Watsa, Province Orientale. Project manager/specialist
- 2011. Specialist review of Heritage Impact Assessment report for Zod Gold Mine, Armenia. Review report. Zod Gold Mine. Armenia. Desktop review. Project manager/specialist
- 2012. Phase 1 Archaeological Impact Assessment for MBET Pipeline. Archaeological Impact Assessment. Resources Generation. RSA. Lephalale, Limpopo. Project manager/specialist
- 2012. Heritage Impact Assessment for the Witwatersrand Goldfields Acid Mine Drainage Project (Western Basin). Heritage Impact Assessment. BKS (PTY) LTD. RSA. Johannesburg, Gauteng. Project manager/specialist
- 2012. Phase 1 Heritage Impact Assessment of the proposed Geluksdal Tailings Storage Facility and Pipeline Infrastructure. Heritage Impact Assessment. Gold One. RSA. Johannesburg, Gauteng. Project manager/specialist
- 2012. Heritage Statement for the Central Basin, Witwatersrand AMD Project. Heritage Statement. BKS (PTY) LTD. RSA. Johannesburg, Gauteng. Project manager/specialist
- 2012. Heritage Statement for Rhodium Reefs Ltd Platinum Operation, 2430CA & CC, De Goedeverwachting 332 KT; Boschkloof 331 KT; Belvedere 362 KT; Kennedy's Vale 361 KT; and Tweefontein 360 KT, Limpopo. Heritage Statement. Eastplats Group. RSA. Steelpoort, Limpopo. Project manager/specialist
- 2012. Notification of Intent to Develop: Proposed Aggeneys Photo-voltaic solar power plant on Portion 1 of the farm Aroams 57 RD, Northern Cape (DEA ref: 12/12/20/2630). Heritage Statement. Orlight Solar. RSA. Aggeneys, Northern Cape. Specialist
- 2012. Notification of Intent to Develop: Proposed Kenhardt Photo-voltaic solar power plant on RE of the farm Klein Zwartbast 188 RD, Northern Cape (DEA ref: 12/12/20/2631). Heritage Statement. Orlight Solar. RSA. Kenhardt, Northern Cape. Project manager/specialist
- 2012. Notification of Intent to Develop: Proposed Loeriesfontein Photo-voltaic solar power plant on Portion 1 of the farm Klein Rooiberg 227 RD, Northern Cape (DEA ref: 12/12/20/2632). Heritage Statement. Orlight Solar. RSA. Loeriesfontein, Northern Cape. Specialist



- 2012. Notification of Intent to Develop: Proposed Vanrhynsdorp Photo-voltaic solar power plant on RE of the farm Paddock 257 RD, Western Cape (DEA ref: 12/12/20/2633). Heritage Statement. Orlight Solar. RSA. Vanrhynsdorp, Western Cape. Project manager/specialist
- 2012. Notification of Intent to Develop: Proposed Graafwater Photo-voltaic solar power plant on Portion 1 of the farm Graafwater 97 RD and RE of Bueroskraal 220 RD, Western Cape (DEA ref: 12/12/20/2636). Heritage Statement. Orlight Solar. RSA. Graafwater, Western Cape. Specialist
- 2012. Phase 2 archaeological impact assessment mitigation for Boikarabelo Coal Mine (SAHRA Permit No: 80/11/07/015/51). . Section 35 Phase 2 Archaeological Mitigation. Resources Generation. RSA. Steenbokpan, Limpopo. Project manager/specialist
- 2012. Final Phase 2 archaeological impact assessment mitigation report for Boikarabelo Coal Mine, Limpopo (SAHRA Permit No: 80/11/07/015/51). . Section 35 Phase 2 Archaeological Mitigation. Resources Generation. RSA. Steenbokpan, Limpopo. Specialist
- 2012. Holder of Destruction Permit No. 84 for archaeological sites at Boikarabelo Coal Mine. Section 35 Destruction permit. Resources Generation. RSA. Steenbokpan, Limpopo. Project manager/specialist
- 2012. Specialist review of Heritage Impact Assessment report for Mkuju Uranium Mine. Review report. Uranex . Zambia. Desktop review. Project manager/specialist
- 2013. Heritage Impact Assessment for the proposed Consbrey Colliery Project, 2629BB and 2629BD, Mpumalanga Province. Heritage Impact Assessment. Msobo Coal. RSA. Breyten, Mpumalanga. Project manager/specialist
- 2013. Heritage Impact Assessment for Rhodium Reef Limited Platinum Operation, 2430CC Kennedys Vale, De Goedeverwachting 332 KT, Limpopo Province. Heritage Impact Assessment. Rhodium Reefs Limited. RSA. Steelpoort, Limpopo. Project manager/specialist
- 2013. Heritage Statement for the Consbrey Colliery. Heritage Statement. Msobo Coal. RSA. Chrissiesmeer, Mpumalanga. Project manager/specialist
- 2013. Heritage Statement for the Harwar Colliery. Heritage Statement. Msobo Coal. RSA. Chrissiesmeer, Mpumalanga. Project manager/specialist
- 2013. Heritage Statement for the Waterberg Prospecting Rights Application, Blouberg, Limpopo Province. Heritage Statement. Platinum Group Metals Ltd. RSA. Breyten, Mpumalanga. Specialist
- 2013. Destruction Permit Application Report for Kangala Coal Project. Section 34 Built Environment Permit. Universal Coal (Pty) Ltd. RSA. Delmas, Mpumalanga. Specialist
- 2013. Holder of Destruction Permit No. 399 for archaeological sites at Boikarabelo Coal Mine. Section 35 Destruction permit. Resources Generation. RSA. Steenbokpan, Limpopo. Project manager/specialist
- 2013. Relocation of graves in Kinjor and Larjor for Aureus New Liberty Gold Mine. International grave relocation project. Aureus Mining. Liberia. Kinjor. Specialist



- 2013. New Liberty Gold Mine Grave Relocation Plan. International grave relocation project. Aureus Mining. Liberia. Kinjor. Project manager/specialist
- 2013. Thabametsi Coal Mine Burial Grounds and Graves Census. Burial Grounds and Graves Census. Exxaro Coal. RSA. Lephalale, Limpopo. Specialist
- 2013. Bokoni Platinum Mine Burial Grounds and Graves Census. Burial Grounds and Graves Census. Bokoni Platinum. RSA. Atok, Limpopo. Specialist
- 2013. Specialist review of Heritage Impacts Assessment for Songwe REE project. Review report. Mkango Resources. Malawi. Desktop review. Project manager/specialist
- 2013: Heritage Impact Assessment for the Platreef Platinum Mine EIA project. Platreef Resources. RSA. Mokopane, Limpopo. Specialist project manager.

Notification of Intent to Develop and Heritage Statement for the Mining
Right Application for the Reclamation of the Soweto Cluster Dumps,
Roodepoort, Gauteng Province


ERG2613

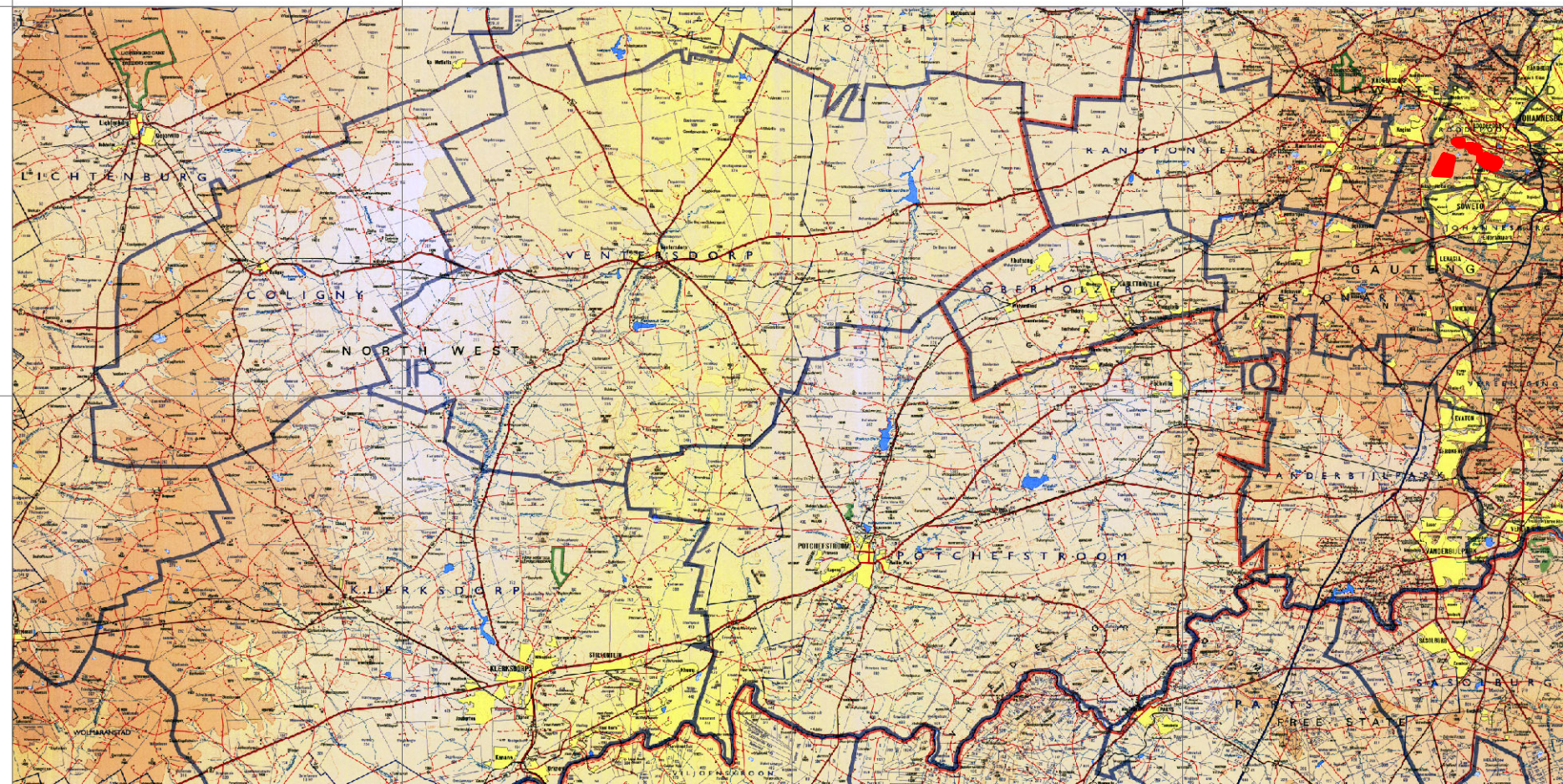


Appendix B: Location and Site Maps

Ergo Soweto Cluster Regional Setting 1:250 000

Legend

 Prospecting Right Area



2626 Wes-Rand



DIGBY WELLS
ENVIRONMENTAL

• Sustainability • Service • Positive Change • Professionalism • Future Focused • Integrity

Projection: Transverse Mercator Ref #: pks.ERG2613.201401.069
Datum: WGS 1984 Revision Number: 1
Central Meridian: 27°E Date: 15/01/2014



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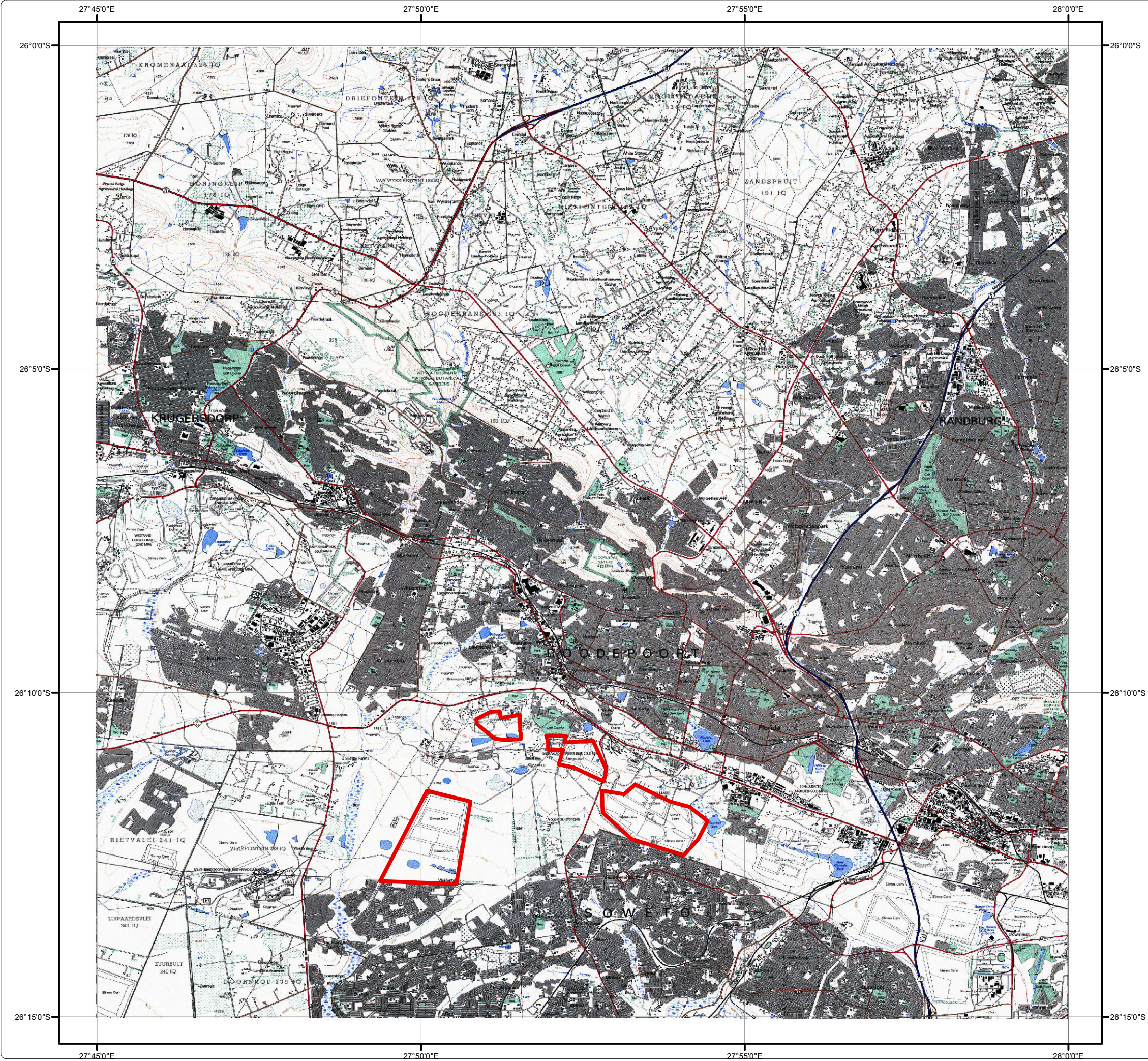
Kilometres
1:900 000

Ergo Soweto Cluster

Regional Setting 1:50 000

Legend

 Project Rights Area



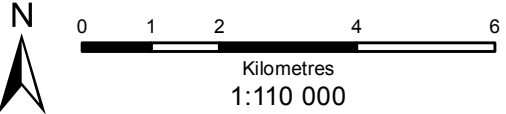
2627BB Roodepoort



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Projection: Transverse Mercator	Ref #: pks.ERG2613.201401.070
Datum: WGS 1984	Revision Number: 1
Central Meridian: 27°E	Date: 15/01/2014



Ergo Soweto Cluster Regional Setting 1:10 000

Legend

 Prospecting Right Area

2627BB

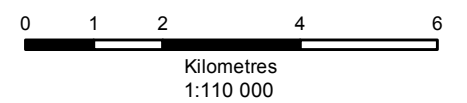


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Datum: WGS 1984
Central Meridian: 27°E

Ref #: pks.ERG2613.201401.071
Revision Number: 1
Date: 15/01/2014



Ergo Soweto Cluster Regional Geology

Legend

- Prospecting Right Area
- Major Town
- Other Town
- Settlement
- National Route
- Main Road
- Minor Road
- Railway
- Non-Perennial Stream
- Perennial Stream
- Dam
- Wetland
- Non-Perennial Pan
- Perennial Pan

Geology

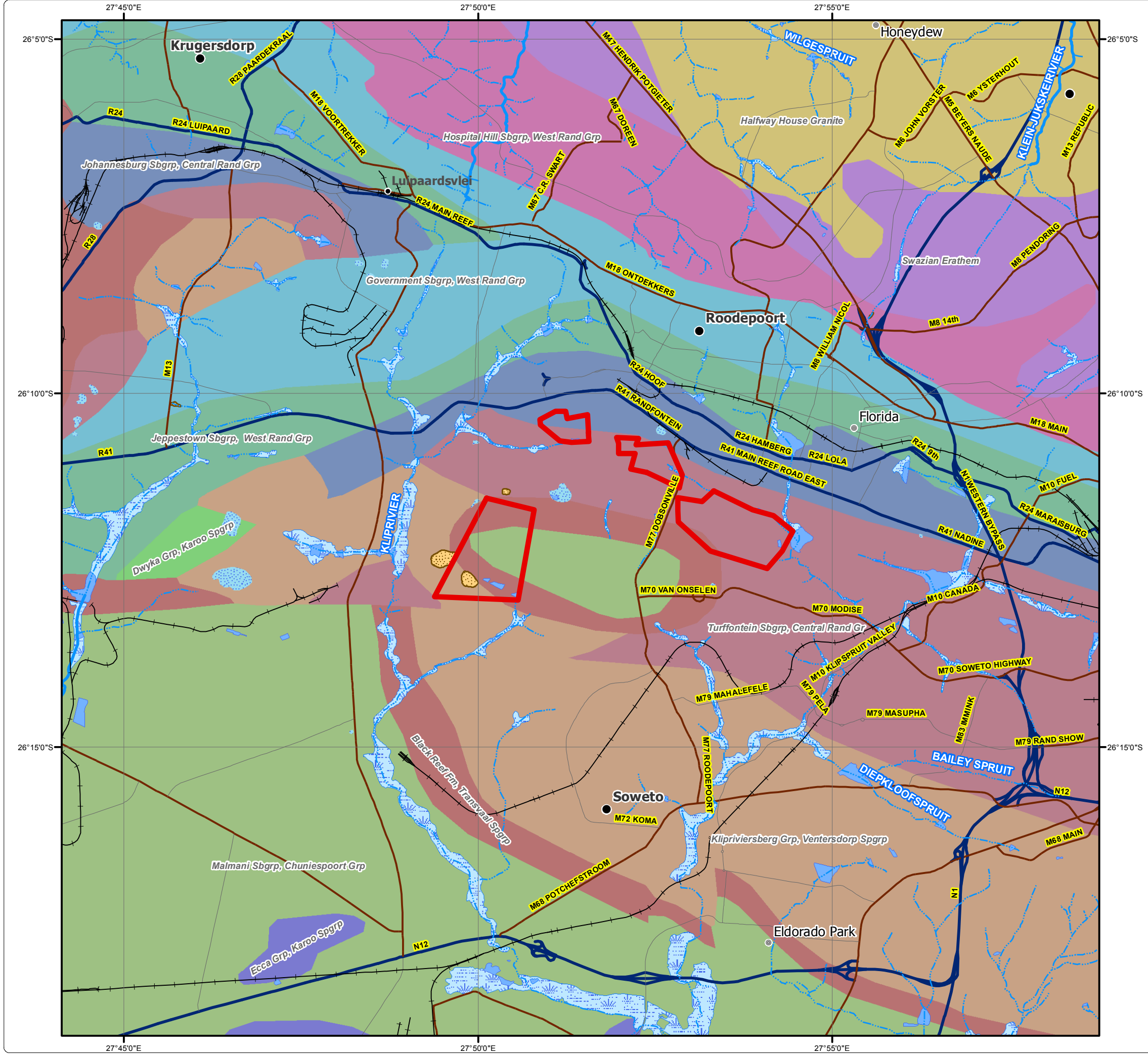
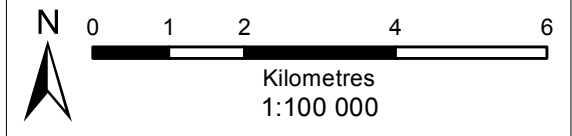
- Black Reef Fm, Transvaal Spgrp
- Dwyka Grp, Karoo Spgrp
- Ecca Grp, Karoo Spgrp
- Government Sbgrp, West Rand Grp
- Halfway House Granite
- Hospital Hill Sbgrp, West Rand Grp
- Jeppestown Sbgrp, West Rand Grp
- Johannesburg Sbgrp, Central Rand Grp
- Klipriviersberg Grp, Ventersdorp Spgrp
- Malmani Sbgrp, Chuniespoort Grp
- Swazian Erathem
- Turffontein Sbgrp, Central Rand Gr



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ENVIRONMENTAL

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Projection: Transverse Mercator	Ref #: pks.ERG2613.201401.065
Datum: WGS84	Revision Number: 1
Central Meridian: 27°E	Date: 15/01/2014



Ergo Soweto Cluster Heritage Sites

Legend

- Heritage Sites
- Major Town
- National Route
- Main Road
- Minor Road
- Railway
- Non-Perennial Stream
- Perennial Stream
- Prospecting Right Area
- Local Municipal Boundary
- Dam
- Wetland
- Non-Perennial Pan
- Perennial Pan



• Sustainability • Service • Positive Change • Professionalism • Future Focused • Integrity

Projection: Transverse Mercator Ref #: pks.ERG2613.201401.072
 Datum: WGS84 Revision Number: 1
 Central Meridian: 27°E Date: 15/01/2014

