

## Vanggatfontein Colliery Expansion Project Heritage Impact Assessment

A number of archaeological and historical studies have been conducted in this section of Mpumalanga most of which infer a varied and rich heritage landscape. The literature shows traces of Iron Age farmer presence and a rich Colonial frontier denoting European farmer expansion. A careful analysis of historical aerial imagery and archive maps of the Vanggatfontein region indicate a landscape which has been inhabited continuously over many decades during in prehistoric and historical times, the remnants of which are visible in transformed agriculture settlement areas and – more recently, signs of large scale mining. Despite the fact that agriculture and mining have transformed much of the landscape in past years, a number of heritage receptors were observed in the Vanggatfontein Colliery Expansion Project area and these are summarized as follows.

Site Code	Coordinate S E	Short Description	Recommend Mitigation Action Summary
EXIGO-VGF-BP01	S26.18717° E28.82961°	Burial Site	Grave relocation subject to authorisations and permitting if impacted on.
EXIGO-VGF-BP02	S26.18202° E28.81987°	Burial Site	
EXIGO-VGF-BP03	S26.17386° E28.87449°	Burial Site	Site monitoring, avoidance, 100m conservation buffer, site management.
EXIGO-VGF-HP01	S26.18002° E28.85971°	Historical Period Building	Site monitoring, avoidance, destruction permitting if impacted on.
EXIGO-VGF-HP02	S26.18189° E28.84303°	Historical Period Remains	General site monitoring.
EXIGO-VGF-CP01	S26.17705° E28.83343°	Contemporary Period Farmstead	No further action required.
EXIGO-VGF-FT01	S26.17828° E28.87366°	Unknown Structure / Features	General site monitoring.

The potential impact on these heritage receptors in the Vanggatfontein Colliery Expansion Project are summarized below.

### i. Burial Sites

Three burial sites were identified in the larger project area subject to the Vanggatfontein Colliery Expansion Project.

#### - Site Exigo-VGF-BP01

The first burial site, an informal cemetery containing in excess of 30 graves (**Site Exigo-VGF-BP01**) occurs in a densely vegetated area surrounded by cultivated maize fields. The cemetery, which is highly significant in terms of its heritage value, contains graves which seem to be older than 60 years and thus protected by the National Heritage Resource Act (NHRA 1999). The site is located in close proximity (<100m) of the south-western margin of the proposed open pit and a **direct, negative** on the site is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Site preparation, clearance, earth moving, excavations and blasting, digging foundations and trenches into potentially sensitive deposits which are not visible on the surface.		
Risk/ Impact	Vegetation clearance, earth moving, excavations and digging for mine infrastructure as well as blasting can directly impact human burials by damaging, destroying or displacing surface grave dressings, gravestones and any associated funeral goods or material culture. These activities might potentially disturb, destroy or displace buried human remains and associated subsurface associated funeral goods or material culture.		
Project Phase CO = construction, OP = operational,	CO		

CL = Closure and post-closure Nature of Impact	Negative		
Type of Impact	Direct: clearance, earth moving, excavations and blasting, digging foundations and trenches will directly lead to impact		
	<b>Define Significance Categories</b>	<b>Significance Prior to Mitigation</b>	<b>Significance With Mitigation</b>
Severity	Significant clearance of ground surface, earth moving, excavations, and blasting.	5	1
Spatial scale	Regional (regional heritage value)	3	3
Duration	One month to one year as areas impacted will have no change in status	2	2
Frequency of activity	Once on project initiation	1	1
Frequency of incident/impact	Highly likely to occur when project commences	5	2
Legal issues	Fully covered in legislation	5	5
Detection	Remote and difficult to observe	4	1
Consequence	Severity + Spatial scale + Duration	10	9
Likelihood	Frequency of Activity + Frequency of incident + Legal issues + Detection	15	8
Impact/Risk	Consequence x Likelihood	150	72
<b>Mitigating and Monitoring Requirements</b>			
Required Management Measures	Relocation of burials and documentation of site, full social consultation with affected parties, possible conservation management and protection measures. Subject to authorisations and relevant permitting from the South African Heritage Resources Agency (SAHRA) Burial Grounds and Graves (BGG) Unit as well as all consultation with ALL interested and affected parties.		
Required Monitoring (if any)	Long-term monitoring whereby all activities around the burials site are carefully monitored in order to detect the potential presence of previously undetected burials or heritage remains at the earliest opportunity.		
Responsibility for implementation	Qualified Heritage Specialist (Grave Relocation), Environmental Control Officer (ECO - monitoring)		

- **Site Exigo-VGF-BP02**

A second burial site, an informal cemetery containing at least 3 graves (**Site Exigo-VGF-BP02**) occurs in vegetated area surrounded by cultivated fields. The cemetery, which is highly significant in terms of its heritage value, contains graves which are older than 60 years and thus protected by the National Heritage Resource Act (NHRA 1999). The site is located in close proximity (<200m) of the western margin of the proposed open pit and a **direct, negative** impact on the site is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Site preparation, clearance, earth moving, excavations and blasting, digging foundations and trenches into potentially sensitive deposits which are not visible on the surface.		
Risk/ Impact	Vegetation clearance, earth moving, excavations and digging for mine infrastructure as well as blasting can directly impact human burials by damaging, destroying or displacing surface grave dressings, gravestones and any associated funeral goods or material culture. These activities might potentially disturb, destroy or displace buried human remains and associated subsurface associated funeral goods or material culture.		
Project Phase CO = construction, OP = operational, CL = Closure and post-closure Nature of Impact	CO  Negative		
Type of Impact	Direct: clearance, earth moving, excavations and blasting, digging foundations and trenches will directly lead to impact		
	<b>Define Significance Categories</b>	<b>Significance Prior to Mitigation</b>	<b>Significance With Mitigation</b>

Severity	Significant clearance of ground surface, earth moving, excavations, and blasting.	5	1
Spatial scale	Regional (regional heritage value)	3	3
Duration	One month to one year as areas impacted will have no change in status	2	2
Frequency of activity	Once on project initiation	1	1
Frequency of incident/impact	Highly likely to occur when project commences	5	2
Legal issues	Fully covered in legislation	5	5
Detection	Remote and difficult to observe	4	1
Consequence	Severity + Spatial scale + Duration	10	6
Likelihood	Frequency of Activity + Frequency of incident + Legal issues + Detection	15	10
Impact/Risk	Consequence x Likelihood	150	60
<b>Mitigating and Monitoring Requirements</b>			
Required Management Measures	Relocation of burials and documentation of site, full social consultation with affected parties, possible conservation management and protection measures. Subject to authorisations and relevant permitting from the South African Heritage Resources Agency (SAHRA) Burial Grounds and Graves (BGG) Unit as well as all consultation with ALL interested and affected parties.		
Required Monitoring (if any)	Long-term monitoring whereby all activities around the burials site are carefully monitored in order to detect the potential presence of previously undetected burials or heritage remains at the earliest opportunity.		
Responsibility for implementation	Qualified Heritage Specialist (Grave Relocation), Environmental Control Officer (ECO - monitoring)		

- **Site Exigo-VGF-BP03**

A third burial site, an informal cemetery containing in excess of 100 graves (**Site Exigo-VGF-BP03**) occurs in a densely vegetated area surrounded by cultivated fields. The cemetery, which is highly significant in terms of its heritage value, contains graves which are older than 60 years and thus protected by the National Heritage Resource Act (NHRA 1999). The site is located along the eastern border of the Vanggatfontein property in the general landscape around the proposed open pit (approximately 1500M) and **negative peripheral impact** on the site is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Blasting, digging foundations and trenches causing vibrations. Unauthorised access to the site during operations.		
Risk/ Impact	Blasting, earth moving, excavations and digging for mine infrastructure can indirectly impact human burials by damaging, destroying or displacing surface grave dressings, gravestones and any associated funeral goods or material culture as a result of vibrations and falling debris after blasting. As human and vehicular movement in the vicinity of the mine pits will increase, unauthorised access onto and around the site during operations might risk conservation of the site.		
Project Phase CO = construction, OP = operational, CL = Closure and post-closure Nature of Impact	CO, OP, CL  Negative		
Type of Impact	Indirect: earth moving, excavations and blasting will indirectly lead to impact		
	<b>Define Significance Categories</b>	<b>Significance Prior to Mitigation</b>	<b>Significance With Mitigation</b>
Severity	Significant clearance of ground surface, earth moving, excavations, and blasting.	4	1
Spatial scale	Regional (regional heritage value)	3	3
Duration	One year to 10 years or LOM as the site will have no change in status.	3	3
Frequency of activity	Impact could occur on a regular basis.	3	1
Frequency of incident/impact	Likely to occur when project commences	4	2

Legal issues	Fully covered in legislation	5	5
Detection	Remote and difficult to observe	4	1
Consequence	Severity + Spatial scale + Duration	10	7
Likelihood	Frequency of Activity + Frequency of incident + Legal issues + Detection	16	8
Impact/Risk	Consequence x Likelihood	160	56
<b>Mitigating and Monitoring Requirements</b>			
Required Management Measures	Implementation of a strict 100m conservation buffer around the burial site, the burial site should be fenced off with wire, chicken wire or palisade fencing of a minimum height of 1.8m placed no closer than 2m from the burials. An access gate should be erected and access control should be applied to the site. A sign should be positioned on the fence indicating the heritage significance of the site and contact details of a mine representative A heritage Site Management Plan (SMP) should be compiled for the burials to stipulate conservation measures, responsible persons and chance find procedures for further heritage mitigation.		
Required Monitoring (if any)	Long-term monitoring (at least monthly) whereby all activities around the burial site are strictly controlled and any potential impact on the site is carefully monitored in order to detect the potential damage to, or loss of burial site surface structures and other related heritage remains, at the earliest opportunity.		
Responsibility for implementation	Informed Environmental Control Officer (ECO - monitoring)		

**- Site Exigo-VGF-BP04**

A fourth burial site, an small informal cemetery containing at least 5 graves (**Site Exigo-VGF-BP04**) occurs in the vicinity of Historical Period building remains (**Site Exigo-VGF-HP02 – see later reference**) in a densely vegetated area. The cemetery, which is highly significant in terms of its heritage value, contains graves which seem to be older than 60 years and thus protected by the National Heritage Resource Act (NHRA 1999). The site is located within the site proposed for the VG6 open pit area and a **direct, negative impact** on the site is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Site preparation, clearance, earth moving, excavations and blasting, digging foundations and trenches into potentially sensitive deposits which are not visible on the surface.		
Risk/ Impact	Vegetation clearance, earth moving, excavations and digging for mine infrastructure as well as blasting can directly impact human burials by damaging, destroying or displacing surface grave dressings, gravestones and any associated funeral goods or material culture. These activities might potentially disturb, destroy or displace buried human remains and associated subsurface associated funeral goods or material culture.		
Project Phase CO = construction, OP = operational, CL = Closure and post-closure Nature of Impact	CO  Negative		
Type of Impact	Direct: clearance, earth moving, excavations and blasting, digging foundations and trenches will directly lead to impact		
	<b>Define Significance Categories</b>	<b>Significance Prior to Mitigation</b>	<b>Significance With Mitigation</b>
Severity	Significant clearance of ground surface, earth moving, excavations, and blasting.	5	1
Spatial scale	Regional (regional heritage value)	3	3
Duration	One month to one year as areas impacted will have no change in status	2	2
Frequency of activity	Once on project initiation	1	1
Frequency of incident/impact	Highly likely to occur when project commences	5	2
Legal issues	Fully covered in legislation	5	5
Detection	Remote and difficult to observe	4	1
Consequence	Severity + Spatial scale + Duration	10	9
Likelihood	Frequency of Activity + Frequency of incident +	15	8

	Legal issues + Detection		
Impact/Risk	Consequence x Likelihood	150	72
<b>Mitigating and Monitoring Requirements</b>			
Required Management Measures	Relocation of burials and documentation of site, full social consultation with affected parties, possible conservation management and protection measures. Subject to authorisations and relevant permitting from the South African Heritage Resources Agency (SAHRA) Burial Grounds and Graves (BGG) Unit as well as all consultation with ALL interested and affected parties.		
Required Monitoring (if any)	Long-term monitoring whereby all activities around the burials site are carefully monitored in order to detect the potential presence of previously undetected burials or heritage remains at the earliest opportunity.		
Responsibility for implementation	Qualified Heritage Specialist (Grave Relocation), Environmental Control Officer (ECO - monitoring)		

## ii. Historical Period remains

Delmas and its surroundings have a long and extensive Colonial Period settlement history. From around the first half of the 19th century, the area was frequented by explorers, missionaries and farmers who all contributed to a recent history of contact and conflict. The remnants of recent occupation, mining and industrialisation are scattered across the landscape and features attributed to the built environment of the later Historical Period occurrences was observed in the project area.

### - Site EXIGO-VGF-HP01

A farmstead compound containing stage sheds, a small rondavel as well as a later Historical Period multi room dwelling (**Site Exigo-VGF-HP01**) occurs on a south-eastern portion of the Vanggatfontein property. The Historical Period building, which is identifiable on archive aerial photos of the farm, seems to have been altered and upgraded extensively in recent years - a process which probably detracted much of the heritage value of the site. However, the dwelling is older than 60 years - and it is generally protected under the National Heritage Resource Act (NHRA 1999). The site is located with the footprint of the proposed open pit and **negative direct impact** on the site is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Site preparation, earth moving, excavations and blasting.		
Risk/ Impact	Earth moving, excavations and blasting can directly impact the Historical Period dwelling by damaging, destroying or displacing the structure or parts thereof.		
Project Phase CO = construction, OP = operational, CL = Closure and post-closure	CO, OP		
Nature of Impact	Negative		
Type of Impact	Direct: Earth moving, excavations and blasting will directly lead to impact		
	<b>Define Significance Categories</b>	<b>Significance Prior to Mitigation</b>	<b>Significance With Mitigation</b>
Severity	Small; earth moving, excavations, and blasting.	2	1
Spatial scale	Area specific	1	3
Duration	One month to one year as areas impacted will have no change in status	1	2
Frequency of activity	Once on project initiation	1	1
Frequency of incident/impact	Highly likely to occur when project commences	5	2
Legal issues	Fully covered in legislation	5	5
Detection	Without much effort	2	1
Consequence	Severity + Spatial scale + Duration	4	4
Likelihood	Frequency of Activity + Frequency of incident + Legal issues + Detection	13	13
Impact/Risk	Consequence x Likelihood	52	52

Mitigating and Monitoring Requirements	
Required Management Measures	As the dwelling is older than 60 years it is generally protected under the NHRA 1999 and application for destruction permit should be made with the South African Heritage Resources Agency (SAHRA) Built Environment Unit prior to alteration / destruction of the building.
Required Monitoring (if any)	Long-term monitoring whereby all activities around the site in order to detect the potential presence of previously undetected heritage remains at the earliest opportunity.
Responsibility for implementation	Environmental Control Officer (ECO - monitoring)

- **Site EXIGO-VGF-HP02**

The scattered remains of a number of buildings, probably the houses of farmworkers (**Site Exigo-VGF-HP02**) occur in a central portion of the Vanggatfontein property. Building foundations and fragments of brick walling as well as material culture such as tin cans, plastic containers and glass occur at the site which is identifiable on archive aerial photos of the farm. As the compound is in a ruined state of preservation any potential heritage value attached to the site has probably been lost. The site is located with the footprint of the proposed open pit and **negative direct impact** is anticipated.

Impact Component	Impact 1	Significance prior to Mitigation	Significance with Mitigation
Activity	Site preparation, earth moving, excavations and blasting.		
Risk/ Impact	Earth moving, excavations and blasting can directly impact the remains of the Historical Period dwelling by destroying or displacing the remains of the structures or parts thereof.		
Project Phase CO = construction, OP = operational, CL = Closure and post-closure Nature of Impact	CO, OP  Negative		
Type of Impact	Direct: Earth moving, excavations and blasting will directly lead to impact		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Severity	Small; earth moving, excavations, and blasting.	1	1
Spatial scale	Area specific	1	1
Duration	One month to one year as areas impacted will have no change in status	1	1
Frequency of activity	Once on project initiation	1	1
Frequency of incident/impact	Highly likely to occur when project commences	5	5
Legal issues	Fully covered in legislation	5	5
Detection	Needs some much effort	3	3
Consequence	Severity + Spatial scale + Duration	3	3
Likelihood	Frequency of Activity + Frequency of incident + Legal issues + Detection	14	11
Impact/Risk	Consequence x Likelihood	24	44
Mitigating and Monitoring Requirements			
Required Management Measures	No site specific management actions required in terms of mitigation.		
Required Monitoring (if any)	Long-term monitoring whereby all activities around the site in order to detect the potential presence of previously undetected heritage remains at the earliest opportunity.		
Responsibility for implementation	Environmental Control Officer (ECO - monitoring)		

- **Site EXIGO-VGF-CP01**

The current Vanggatfontein farmstead consisting out of a large dwelling, outbuildings and warehouses (**Site Exigo-VGF-CP02**) occur in a north-western portion of the Vanggatfontein property. None of the structural

components at this compound appear on archive aerial photos of the farm and the farmstead dates to the Contemporary Period. For this reason, the site does not carry intrinsic heritage value and even though located with the footprint of the proposed open pit no **impact** in terms of heritage value is anticipated.

- **Site EXIGO-VGF-FT01**

A number of stone cairns of varying sizes (**Site Exigo-VGF-FT01**) occur under furrow of Eucalyptus Trees directly west of the cemetery at Site Exigo-VGF-BP03. The provenance and function of the features are uncertain and the site does not carry known or implicit heritage significance. The features occur in the general landscape east of the proposed open pit (approximately 1400m) and no **impact** in terms of heritage value is anticipated. However, cognisant of the fact that burials occur in the surroundings, the monitoring of the site and these features will be required should any development take place here, in order to detect the potential presence of previously undetected burials or heritage remains at the earliest opportunity.