

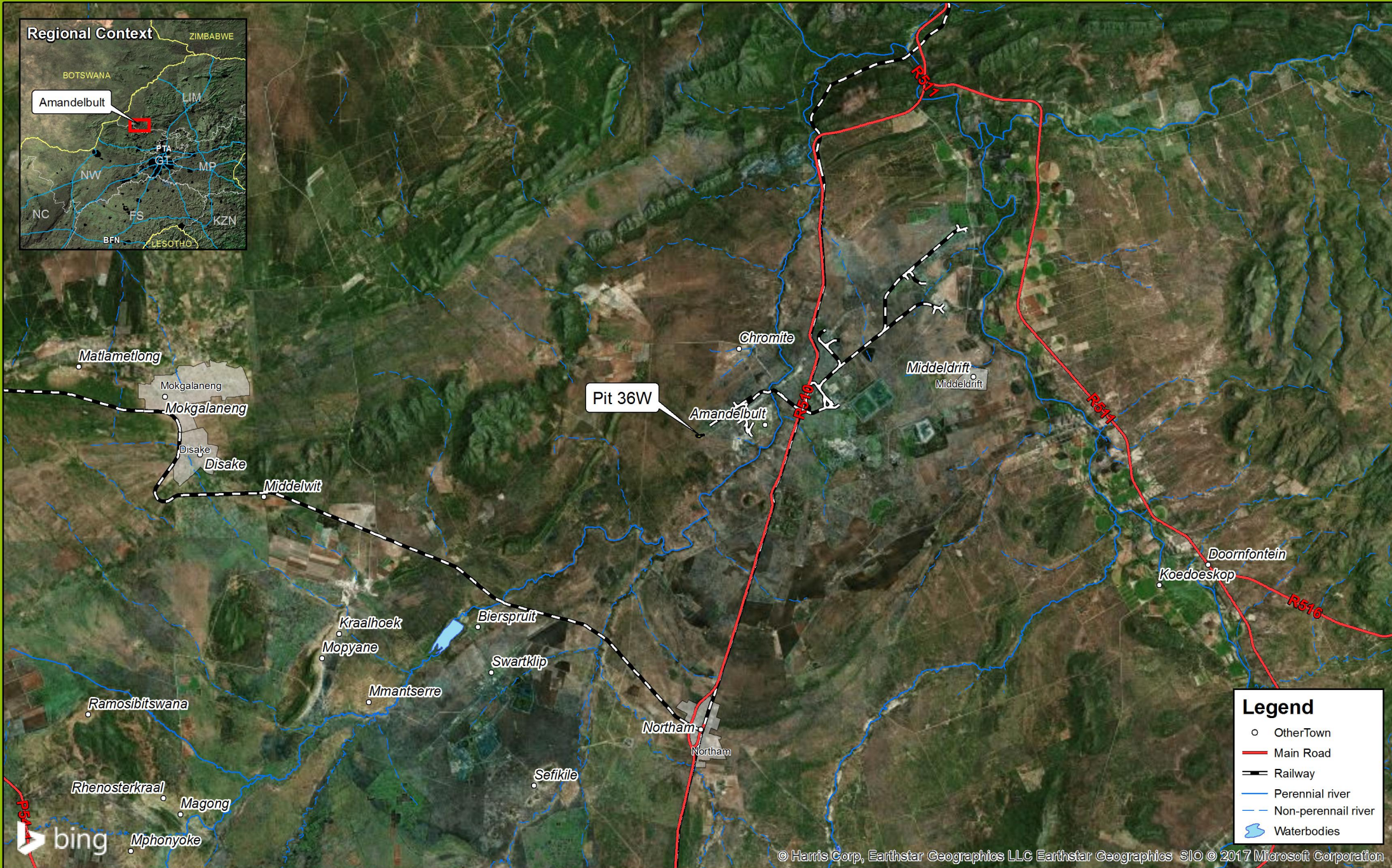
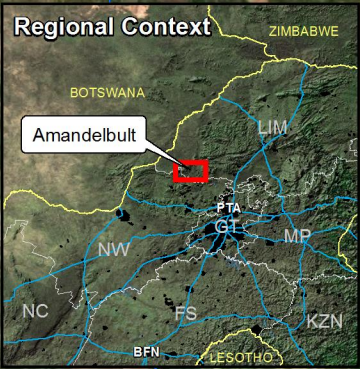


A

Maps

Appendix A.1

Locality Map



AMANDELBULT

Pit 36W Locality Map



Scale as printed at A4 **1:250 000**



Disclaimer:
Aurecon gives no warranty of any kind, expressed or implied, with regard to the data and shall not be held liable in any event of any loss or damage in connection with or arising out of the use of this data. The data remains the sole property of the CLIENT and may be used by Aurecon for purposes of this project with prior written approval of the CLIENT.

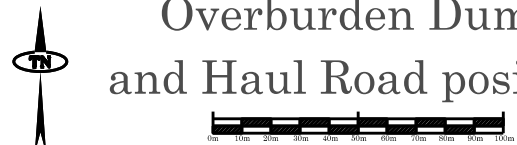
Compiled by: Stephen Townshend
Compiled on: 2017/06/06



Appendix A.2

General Layout

Overburden Dump
and Haul Road position



788-KQ

ELANDSFONTEIN 386-KQ

300 000 m³

41W UG2 REEF WINZE
COLLAR ELEVATION
974.9
ABANDONED

42W UG2 REEF WINZE
COLLAR ELEVATION
976.0
ABANDONED

47W UG2 REEF WINZE
COLLAR ELEVATION
977.0
ABANDONED

Lay Down
Area

49W REEF WINZE
ABANDONED
976.0

90

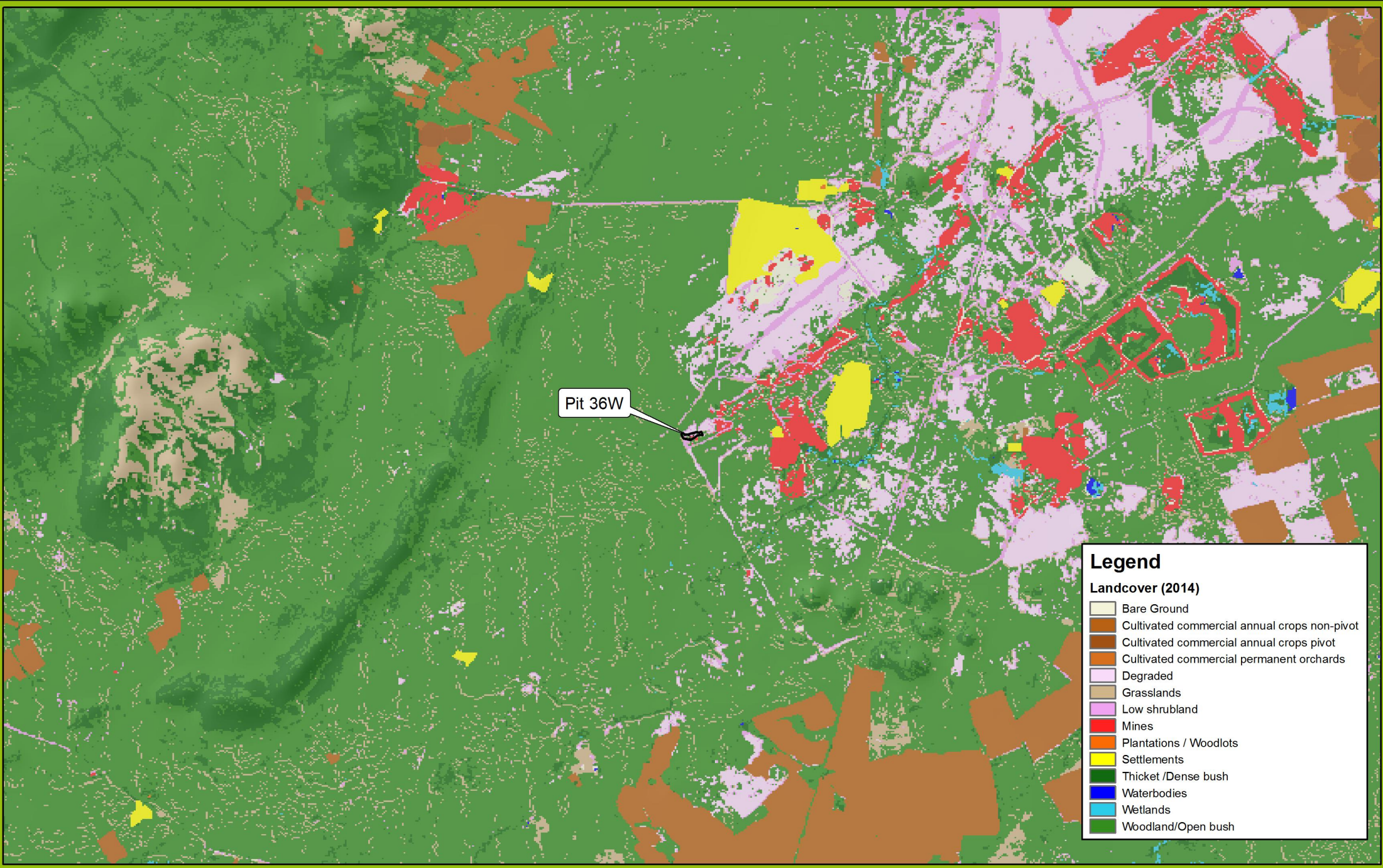
15

PIT 36W

KQ

Appendix A.4

Landcover



Legend

Landcover (2014)

- Bare Ground
- Cultivated commercial annual crops non-pivot
- Cultivated commercial annual crops pivot
- Cultivated commercial permanent orchards
- Degraded
- Grasslands
- Low shrubland
- Mines
- Plantations / Woodlots
- Settlements
- Thicket /Dense bush
- Waterbodies
- Wetlands
- Woodland/Open bush

AMANDELBULT
Pit 62E Landcover Map



Scale as printed at A4 **1:100 000**



Disclaimer:
Aurecon gives no warranty of any kind, expressed or implied, with regard to the data and shall not be held liable in any event of any loss or damage in connection with or arising out of the use of this data. The data remains the sole property of the CLIENT and may be used by Aurecon for purposes of this project with prior written approval of the CLIENT.

Compiled by: Stephen Townshend
Compiled on: 2017/06/06

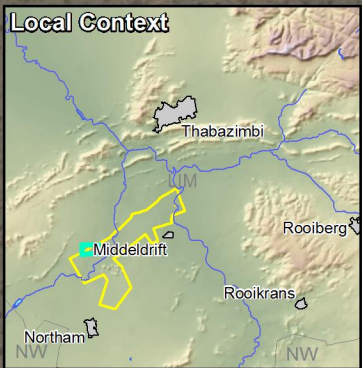


Appendix A.5

Critical Biodiversity Area 2



VLAKPOORT
4/388



ELANDSFONTEIN
RE/386

36W NewPit
(41 315m²)

MODDERGAT
RE/389

Legend

- Mining Right Boundary
- Farm boundary
- Waterbodies
- CBA Category**
- Critical Biodiversity Area 2



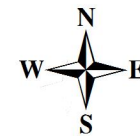
© 2017 DigitalGlobe © 2017 GeoEye Earthstar Geographics SIO © 2017 Microsoft Corporation

AMANDELBULT

Pit 36W



Scale as printed at A4 **1:10 000**



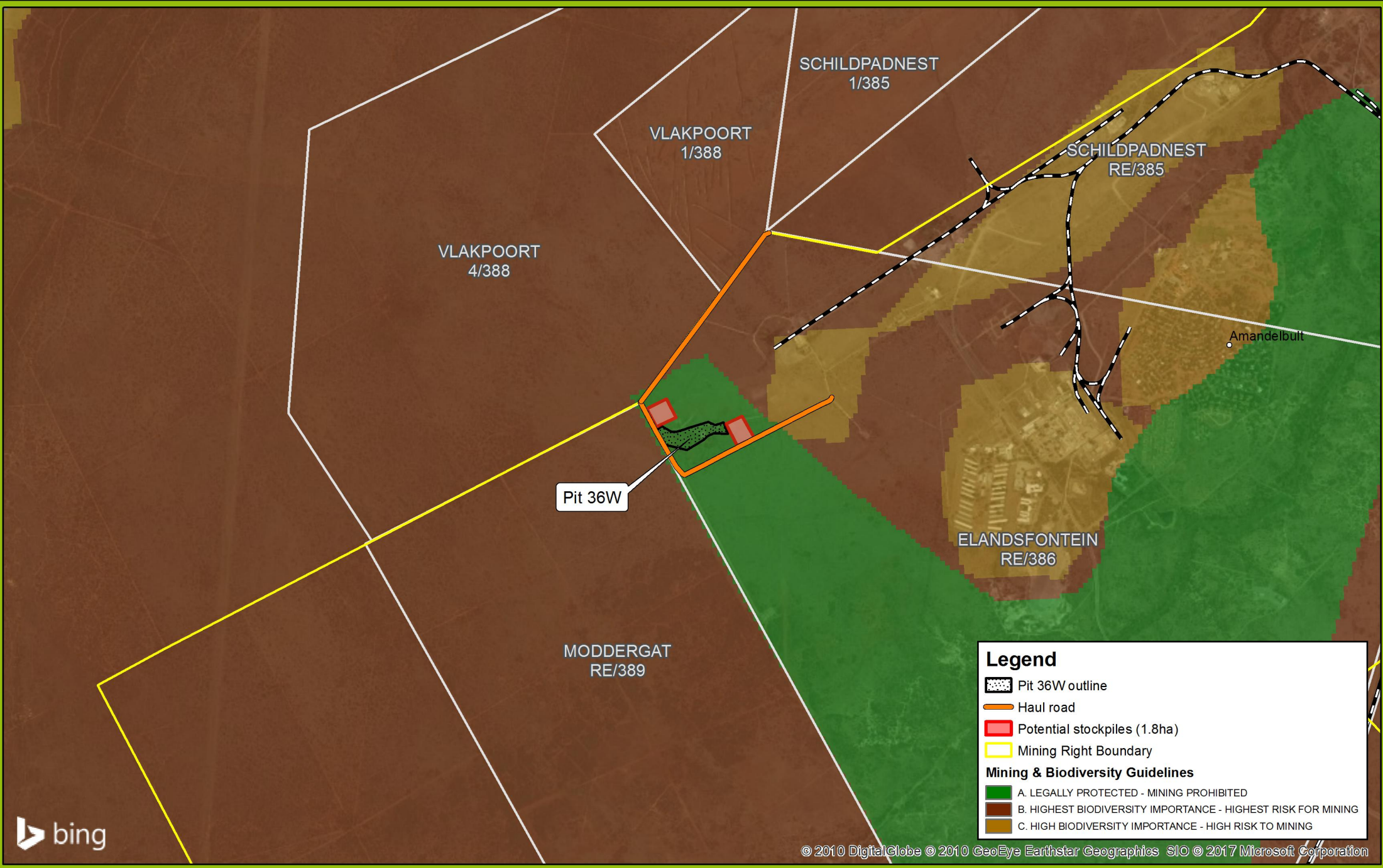
Disclaimer:
Aurecon gives no warranty of any kind, expressed or implied, with regard to the data and shall not be held liable in any event of any loss or damage in connection with or arising out of the use of this data. The data remains the sole property of the CLIENT and may be used by Aurecon for purposes of this project with prior written approval of the CLIENT.

Compiled by: Stephen Townshend
Compiled on: 2017/02/08



Appendix A.6

Mining & Biodiversity Guidelines



© 2010 DigitalGlobe © 2010 GeoEye Earthstar Geographics SIO © 2017 Microsoft Corporation

Legend

- Pit 36W outline
- Haul road
- Potential stockpiles (1.8ha)
- Mining Right Boundary

Mining & Biodiversity Guidelines

- A. LEGALLY PROTECTED - MINING PROHIBITED
- B. HIGHEST BIODIVERSITY IMPORTANCE - HIGHEST RISK FOR MINING
- C. HIGH BIODIVERSITY IMPORTANCE - HIGH RISK TO MINING

AMANDELBULT

Pit 36W Mining & Biodiversity Guidelines



Scale as printed at A4 **1:30 000**



Disclaimer:
Aurecon gives no warranty of any kind, expressed or implied, with regard to the data and shall not be held liable in any event of any loss or damage in connection with or arising out of the use of this data. The data remains the sole property of the CLIENT and may be used by Aurecon for purposes of this project with prior written approval of the CLIENT.

Compiled by: Stephen Townshend
Compiled on: 2017/06/06





B

**Impact
Assessments**

Appendix D: Impact Assessments

Construction (site establishment, vegetation clearing, topsoil stripping & stockpiling)

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Loss of topsoil due to negligent stripping and stockpiling procedures at open pit and due to use of topsoil for construction purposes.	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
2	Deterioration of topsoil quality due to contamination with underlying subsoil layers or rock formations	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
3	Decline in topsoil fertility due to mixing of soil's A and B horizons (upper and lower horizons) and due to possible mixing of different soil types	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
4	Compaction and decline in topsoil structure during stockpiling	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
5	Topsoil contamination with hydrocarbons and chemical compounds from mechanical equipment	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
6	Loss of topsoil through erosion at stockpiles	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
7	Cease in current land use at pit, stockpiles and infrastructure footprints during mine construction and operation	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
8	Loss of floral & faunal habitat	Short-term	Site-specific	Moderate - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low
9	Loss of floral & faunal SCC	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
10	Sensory disturbances to fauna	Short-term	Local	Moderate - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Local	Moderate - negative	Slightly detrimental	Unlikely	Very low
11	Direct faunal mortality	Medium-term	Local	Moderate - negative	Moderately detrimental	Fairly likely	Low - negative	Medium-term	Site-specific	Moderate - negative	Slightly detrimental	Unlikely	Very low
12	Natural resource harvesting	Short-term	Site-specific	Negligible	Negligible	Unlikely	Very low	Short-term	Site-specific	Negligible	Negligible	Very unlikely	Very low
13	Alien and invasive species	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
14	Water quality deterioration due to pollutant discharge or dirty water runoff	Short-term	Local	Negligible	Negligible	Unlikely	Very low	Short-term	Local	Negligible	Negligible	Unlikely	Very low
15	Dust deposition due to soil clearing	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low
16	Dust deposition due to vehicle movement	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Negligible	Negligible	Very likely	Very low
17	PM ₁₀ emissions due to vehicle & equipment (e.g. generators) operation	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Negligible	Negligible	Very likely	Very low
18	Daytime noise caused by vehicle & equipment operation	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
19	Night-time noise caused by vehicle & equipment operation	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Unlikely	Very low
20	Chance heritage finds	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low
21	Chance fossil finds	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low
22	Visual impact from night-time lighting	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
23	Visual impact from dust	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
24	Safety & security impacts	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low

Operation (OB blasting, removal & ore extraction)

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Deterioration of topsoil quality due to contamination with underlying subsoil layers or rock formations	Medium-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low	Medium-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
2	Compaction and decline in topsoil structure during stockpiling	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
3	Topsoil contamination with hydrocarbons and chemical compounds from mechanical equipment	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
4	Loss of topsoil through erosion at stockpiles & pit edges	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
5	Cease in current land use at pit, dumps, stockpiles and infrastructure footprints	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
6	Sensory disturbances to fauna	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Unlikely	Very low
7	Direct faunal mortality	Medium-term	Local	Moderate - negative	Moderately detrimental	Fairly likely	Low - negative	Medium-term	Local	Moderate - negative	Moderately detrimental	Unlikely	Low - negative
8	Water quality deterioration due to pollutant discharge or dirty water runoff	Short-term	Local	Low - negative	Slightly detrimental	Unlikely	Very low	Short-term	Local	Low - negative	Slightly detrimental	Unlikely	Very low
9	Dust deposition due to loading and hauling	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative
10	Dust deposition emissions due to vehicle movement	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Unlikely	Very low
11	PM ₁₀ emissions due to vehicle & equipment (e.g. generators) operation	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Negligible	Negligible	Very likely	Very low
12	Daytime noise caused by vehicle & equipment operation	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
13	Night-time noise caused by vehicle & equipment operation	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative
14	Ground vibration caused by blasting	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
15	Air blast caused by blasting	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
16	Fly rock caused by blasting	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
17	Chance heritage finds	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Very unlikely	Very low
18	Chance fossil finds	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
19	Visual impact from night-time lighting	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low
20	Visual impact from dust	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
21	Contribution to employment retention at mine	Short-term	Local	Moderate - positive	Slightly beneficial	Very likely	Low - positive	Short-term	Local	Moderate - positive	Slightly beneficial	Very likely	Low - positive
22	Contribution to PGM-resources at mine	Short-term	Local	Moderate - positive	Slightly beneficial	Certain	Moderate - positive	Short-term	Local	Moderate - positive	Slightly beneficial	Certain	Moderate - positive

Decommissioning (material & topsoil replacement, grading, revegetation)

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Loss of topsoil due to negligent stripping and stockpiling procedures at open pit and due to use of topsoil for construction purposes.	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
2	Decline in topsoil fertility due to mixing of soil's A and B horizons (upper and lower horizons) and due to possible mixing of different soil types	Long-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
3	Compaction and decline in topsoil structure during topsoil replacement	Medium-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Medium-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
4	Topsoil contamination with hydrocarbons and chemical compounds from mechanical equipment	Medium-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Medium-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
5	Loss of topsoil through erosion at stockpiles, pit edges and rehabilitated areas	Medium-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Medium-term	Site-specific	Low - negative	Slightly detrimental	Unlikely	Very low
6	Reconstructed topography	Long-term	Site-specific	Moderate - negative	Moderately detrimental	Very likely	Moderate - negative	Long-term	Site-specific	Low - negative	Slightly detrimental	Very likely	Low - negative
7	Replacement of floral & faunal habitat	Long-term	Local	Moderate - positive	Moderately beneficial	Very likely	Moderate - positive	Long-term	Local	Moderate - positive	Moderately beneficial	Very likely	Moderate - positive
8	Alien and invasive species	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
9	Dust deposition emissions due to topsoil handling	Short-term	Site-specific	Low - positive	Negligible	Very likely	Very low	Short-term	Site-specific	Low - positive	Negligible	Unlikely	Very low
10	Dust deposition emissions due to vehicle movement	Short-term	Site-specific	Low - positive	Negligible	Very likely	Very low	Short-term	Site-specific	Low - positive	Negligible	Unlikely	Very low

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
11	PM ₁₀ emissions due to vehicle & equipment (e.g. generators) operation	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low
12	Daytime noise caused by vehicle & equipment operation	Short-term	Site-specific	Negligible	Negligible	Fairly likely	Very low	Short-term	Site-specific	Negligible	Negligible	Fairly likely	Very low
13	Night-time noise caused by vehicle & equipment operation	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
14	Chance heritage finds	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
15	Chance fossil finds	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
16	Visual impact from night-time lighting	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low	Short-term	Site-specific	Low - negative	Negligible	Unlikely	Very low
17	Visual impact from dust	Short-term	Site-specific	Negligible	Negligible	Unlikely	Very low	Short-term	Site-specific	Negligible	Negligible	Unlikely	Very low

Document prepared by

Aurecon South Africa (Pty) Ltd

Reg No 1977/003711/07

Aurecon Centre

Lynnwood Bridge Office Park

4 Daventry Street

Lynnwood Manor 0081

PO Box 74381

Lynnwood Ridge 0040

South Africa

T +27 12 427 2000

F +27 86 556 0521

E tshwane@aurecongroup.com

W aurecongroup.com

aurecon

*Bringing ideas
to life*

Aurecon offices are located in:
Angola, Australia, Botswana, China,
Ghana, Hong Kong, Indonesia, Kenya,
Lesotho, Macau, Mozambique,
Namibia, New Zealand, Nigeria,
Philippines, Qatar, Singapore, South Africa,
Swaziland, Tanzania, Thailand, Uganda,
United Arab Emirates, Vietnam.