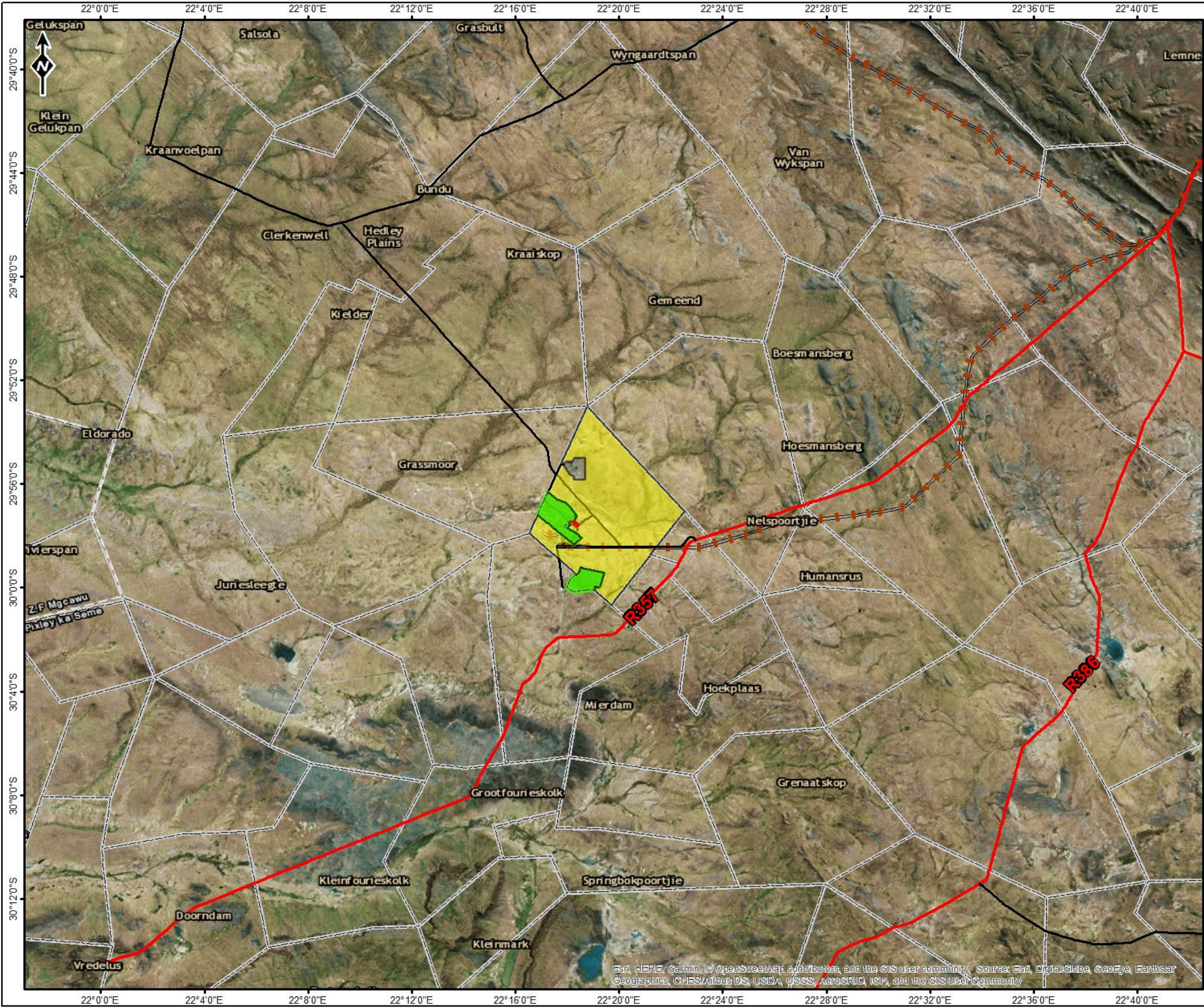


## APPENDIX 4: MAPS

## MAP 1: REGIONAL LOCALITY MAP

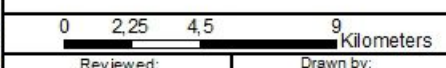


**Prieska Zinc Copper Project  
(Vardocube Section)**

**Legend**

- Vardocube Ore Body
  - Vardocube Mining Right Area
  - Repli Mining Right Area
  - Farm Boundaries
- ROAD NETWORK**
- Main Road
  - Secondary Road
  - Railway line

**REGIONAL LOCALITY**



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

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	Version <b>Final</b>
	Date: 2018/08/29








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**MAP 2: LAYOUT OF ORE BODY**

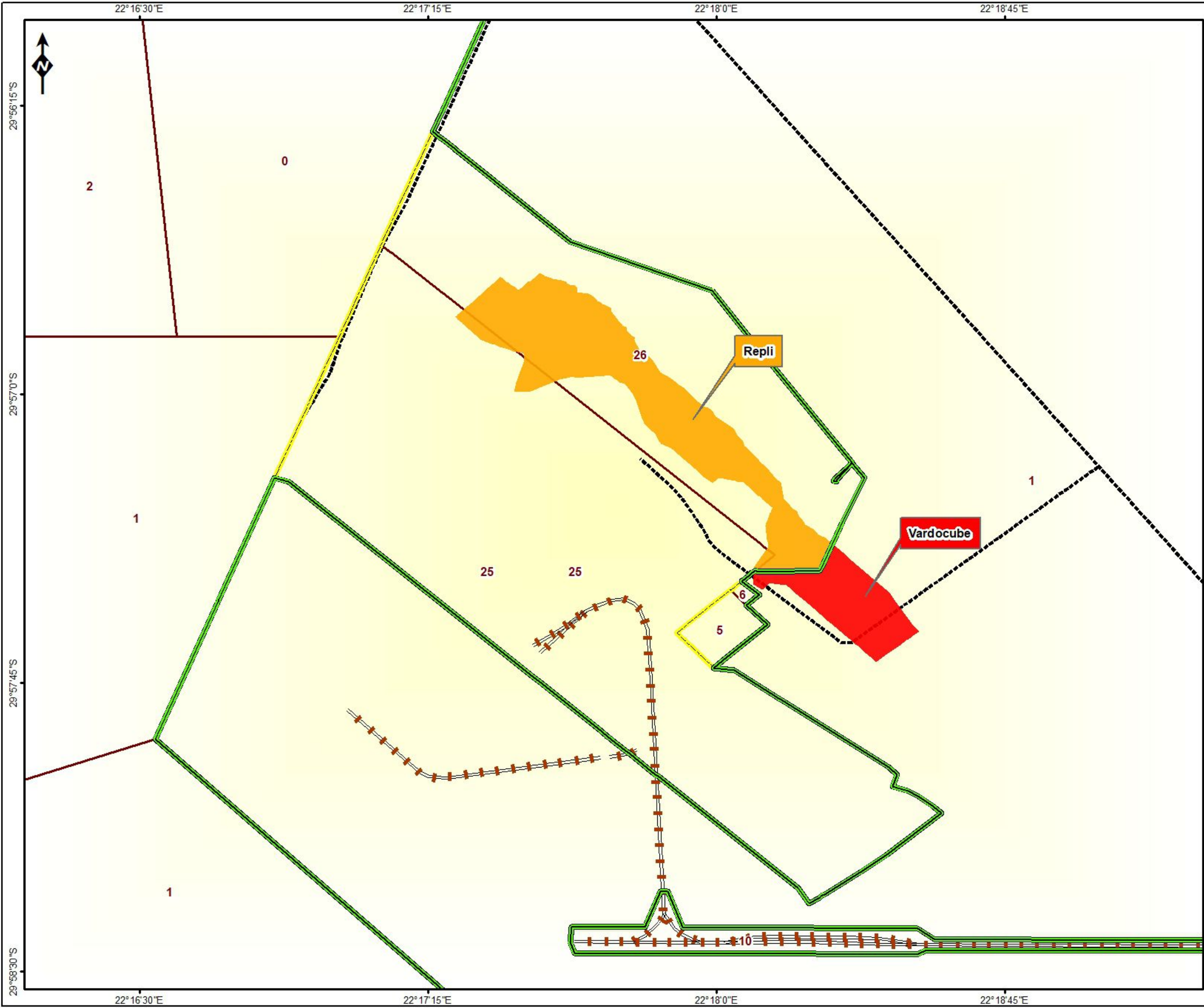
### Prieska Zinc Copper Project (Vardocube Section)

#### Legend

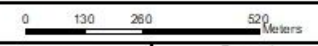
-  Repli Ore Body
-  Vardocube Ore Body
-  Proposed Vardocube MRA
-  Proposed Repli MRA
-  Farm Portions

#### ROAD NETWORK

-  Main Road
-  Secondary Road
-  Access Roads
-  Railway line



#### PCM Orebody Map



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

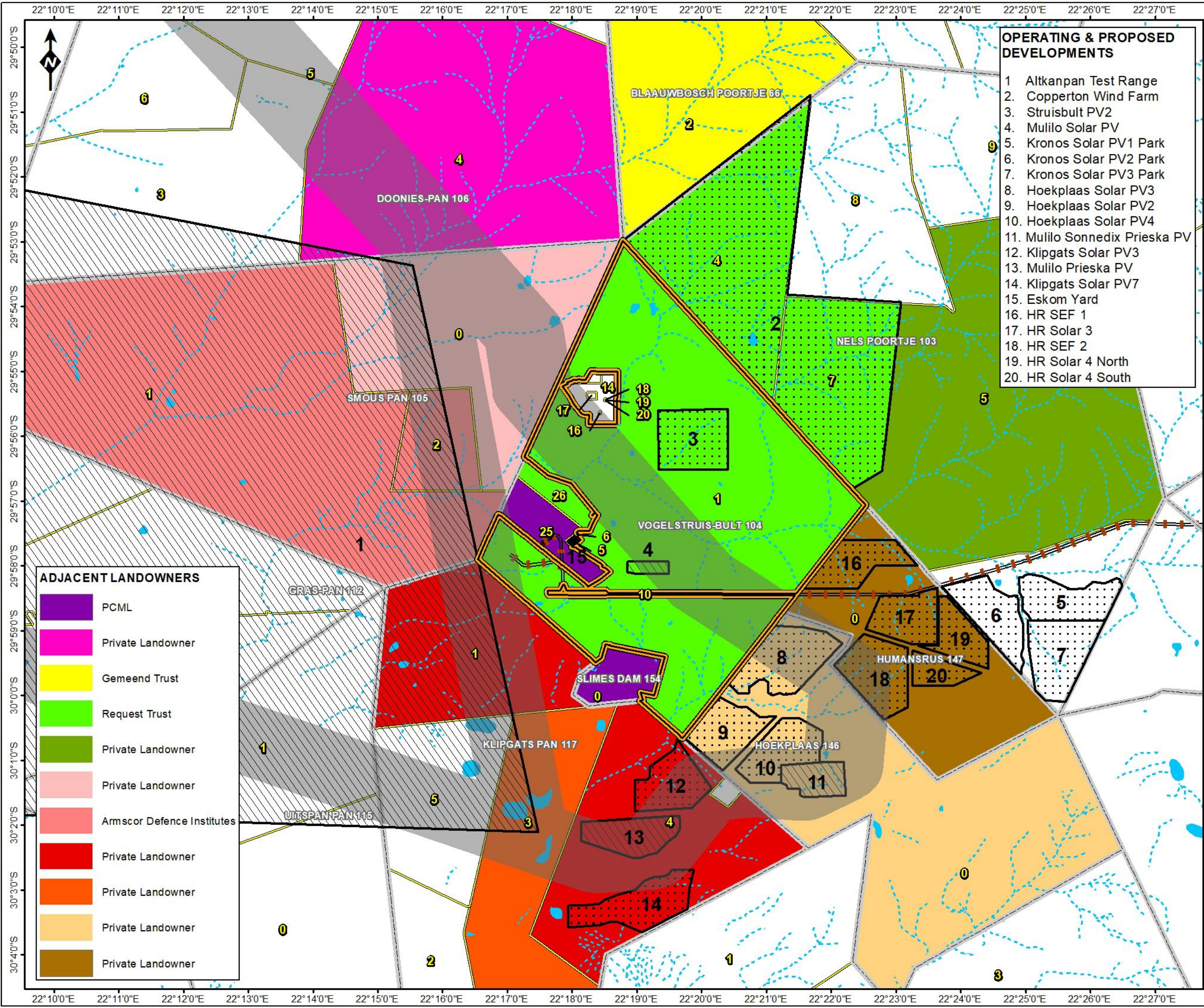
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Datum: WGS 1984

	Scale: 1:16 847
	Version Final
	Date: 2018/08/29



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**MAP 3: SURROUNDING LANDOWNERS AND LANDUSERS**



- OPERATING & PROPOSED DEVELOPMENTS**
1. Altkanpan Test Range
  2. Copperton Wind Farm
  3. Struisbult PV2
  4. Mulilo Solar PV
  5. Kronos Solar PV1 Park
  6. Kronos Solar PV2 Park
  7. Kronos Solar PV3 Park
  8. Hoekplaas Solar PV3
  9. Hoekplaas Solar PV2
  10. Hoekplaas Solar PV4
  11. Mulilo Sonnedix Prieska PV
  12. Klipgats Solar PV3
  13. Mulilo Prieska PV
  14. Klipgats Solar PV7
  15. Eskom Yard
  16. HR SEF 1
  17. HR Solar 3
  18. HR SEF 2
  19. HR Solar 4 North
  20. HR Solar 4 South

**Prieska Zinc Copper Project (Vardocube Section)**

**Legend**

- Operating
- Proposed
- Possible Kronos Powerline Corridors
- ESKOM Yard
- Farm Boundaries
- Railway line
- PROPOSED VARDOCUBE MRA**
- Vardocube
- RIVERS & STREAMS**
- Perennial River
- Non-Perennial River
- Wetlands

**ADJACENT LANDOWNERS**

- PCML
- Private Landowner
- Gemeend Trust
- Request Trust
- Private Landowner
- Private Landowner
- Armscor Defence Institutes
- Private Landowner
- Private Landowner
- Private Landowner
- Private Landowner

**SURROUNDING LANDOWNERS**

0 750 1500 3000 Meters

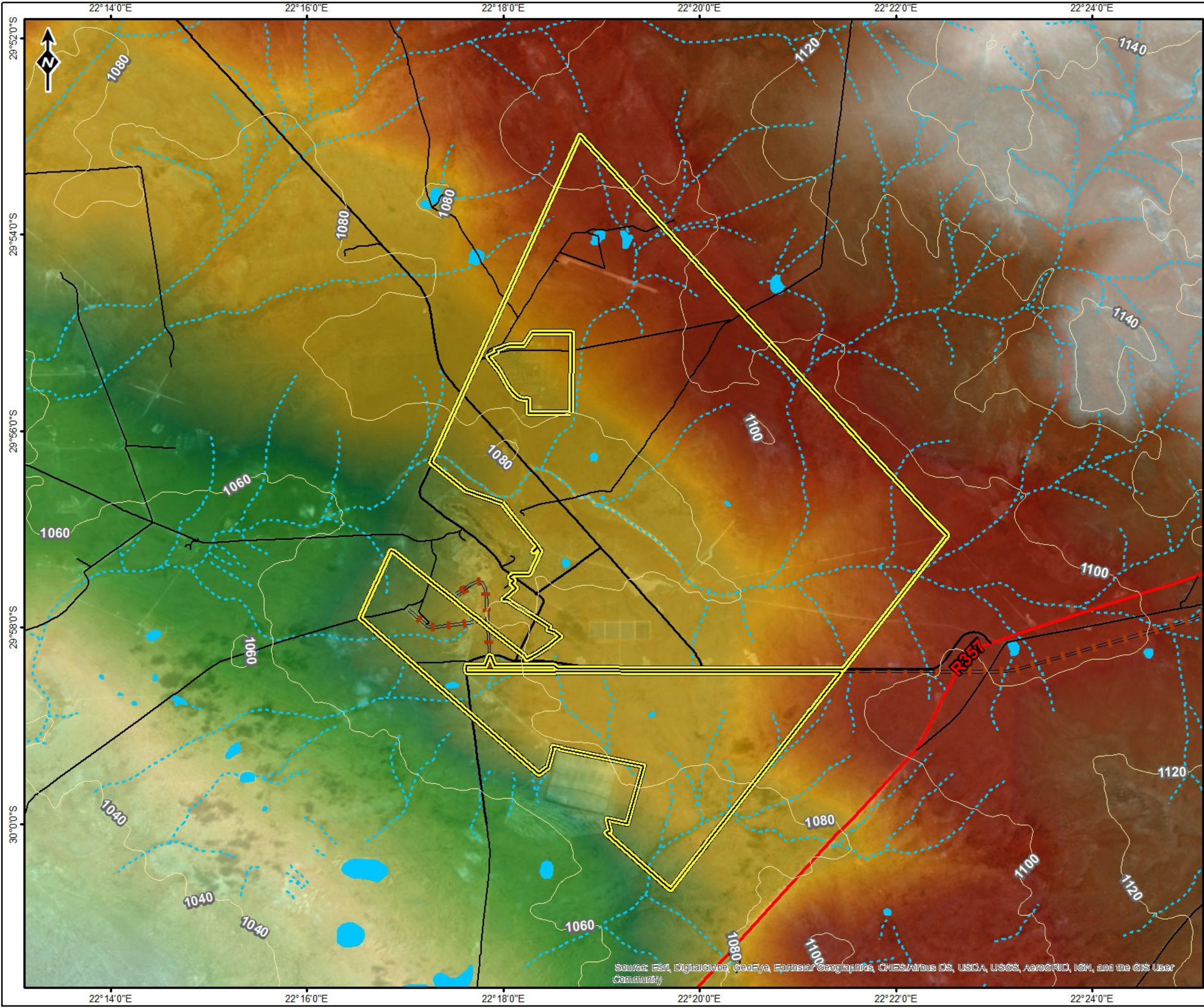
Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
Coordinate System: GCS WGS 1984 Datum: WGS 1984	
Scale: 1:100 000	
Version: Final	
Date: 2018/08/29	

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**MAP 4: TOPOGRAPHY**

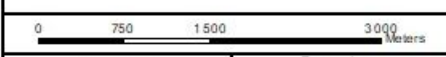




**Legend**

- 20m Contours
- PROPOSED VARDOCUBE MRA**
- Vardocube
- ROAD NETWORK**
- Main Road
- Secondary Road
- Other Access
- Railway line
- RIVERS & STREAMS**
- Perennial River
- Non-Perennial River
- Wetlands
- ELEVATION (meters)**
- High : 1157
- Low : 1028

**TOPOGRAPHY**



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

	Scale: 1:66 000
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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**MAP 5: GEOLOGY**

# Legend

## PROPOSED VARDOCUBE MRA



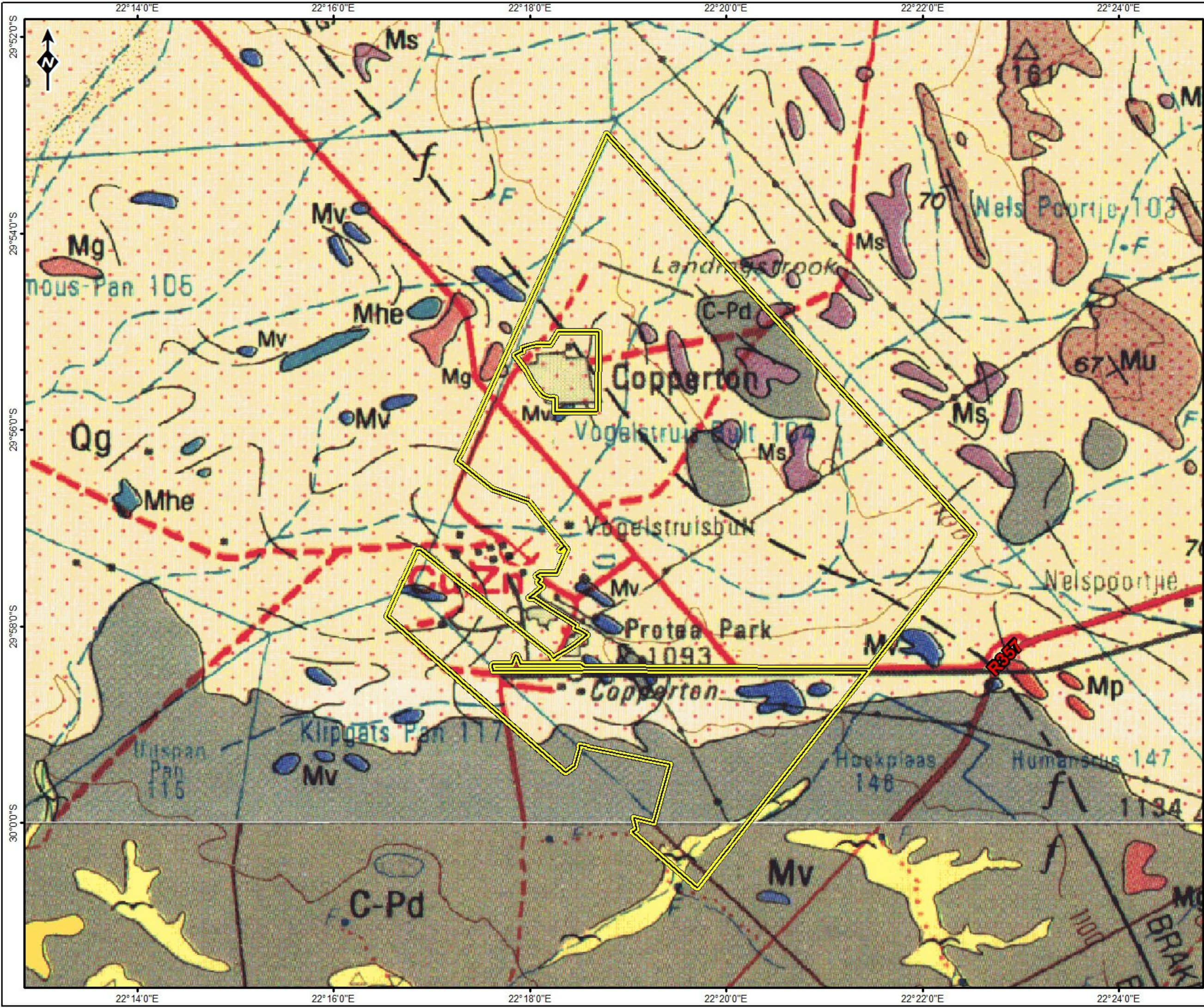
## GEOLOGY



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

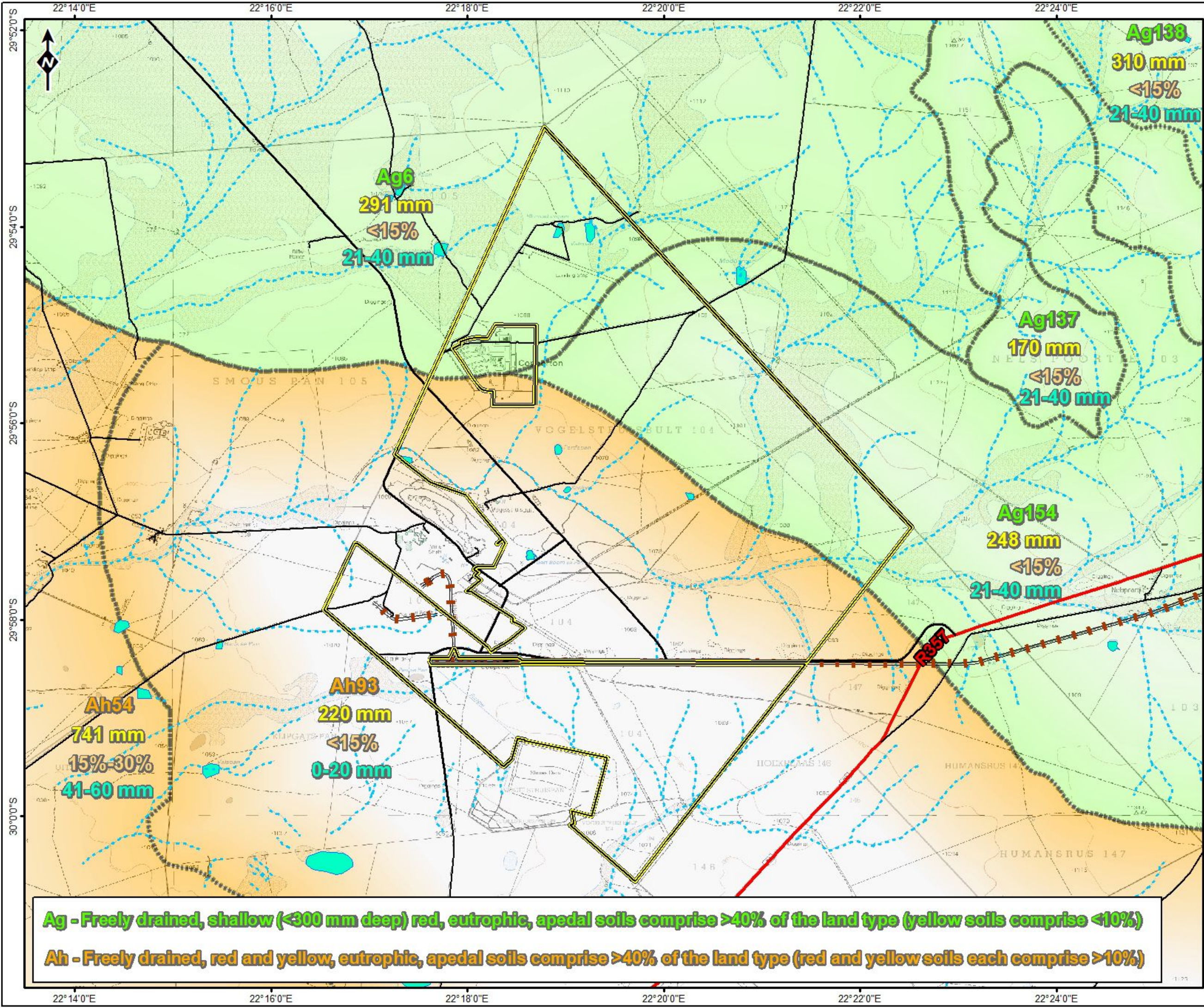
Coordinate System: GCS WGS 1984  
Datum: WGS 1984

	Scale: 1:66 000
	Version Final
	Date: 2018/09/10



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**MAP 6: SOILS**



### Legend

**PROPOSED VARDOCUBE MRA**

- Vardocube

**ROAD NETWORK**

- Main Road
- Secondary Road
- Other Access
- Railway line

**RIVERS & STREAMS**

- Perennial River
- Non-Perennial River
- Wetlands

**SOIL CHARACTERISTICS**

- Avg Soil Depth
- Clay % Top Soils
- Water Holding Capacity

**SOILS**

0 750 1500 3000 meters

Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

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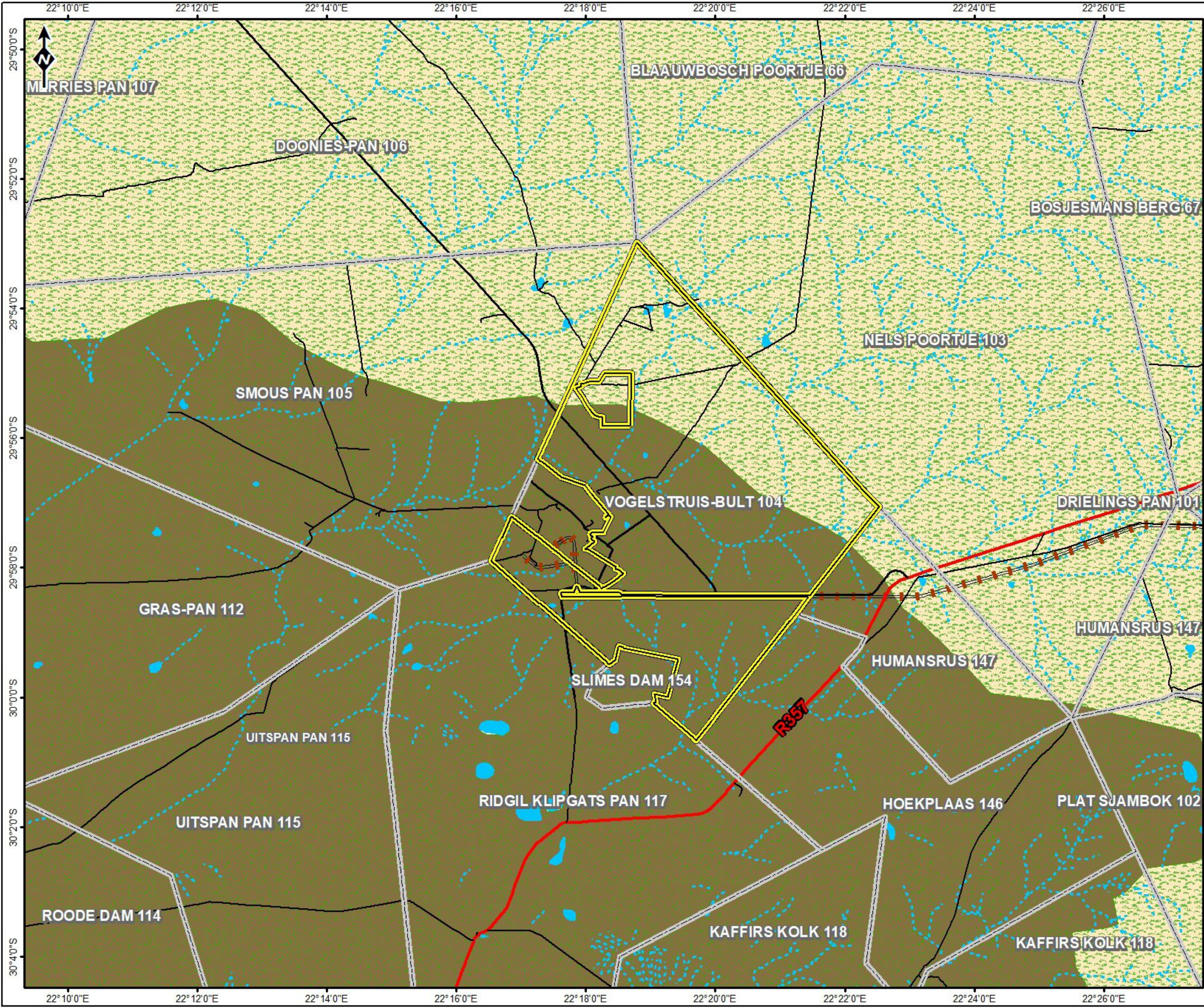
Upington Kimberley  
Northern Cape  
South Africa  
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**Ag - Freely drained, shallow (<300 mm deep) red, eutrophic, apedal soils comprise >40% of the land type (yellow soils comprise <10%)**

**Ah - Freely drained, red and yellow, eutrophic, apedal soils comprise >40% of the land type (red and yellow soils each comprise >10%)**







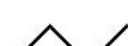




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**MAP 7: VEGETATION**



**Prieska Zinc Copper Project  
(Vardocube Section)**

**Legend**

-  Farm Boundaries
- PROPOSED VARDOCUBE MRA**
-  Vardocube
- VEGETATION**
-  Bushmanland Arid Grassland
-  Bushmanland Basin Shrubland
- ROAD NETWORK**
-  Main Road
-  Secondary Road
-  Other Access
-  Railway line
- RIVERS & STREAMS**
-  Perennial River
-  Non-Perennial River
-  Wetlands

**VEGETATION**

0 1050 2100 4200 Meters

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Coordinate System: GCS WGS 1984 Datum: WGS 1984	

	Scale: 1:100 000
	Version <b>Final</b>
	Date: 2018/08/28

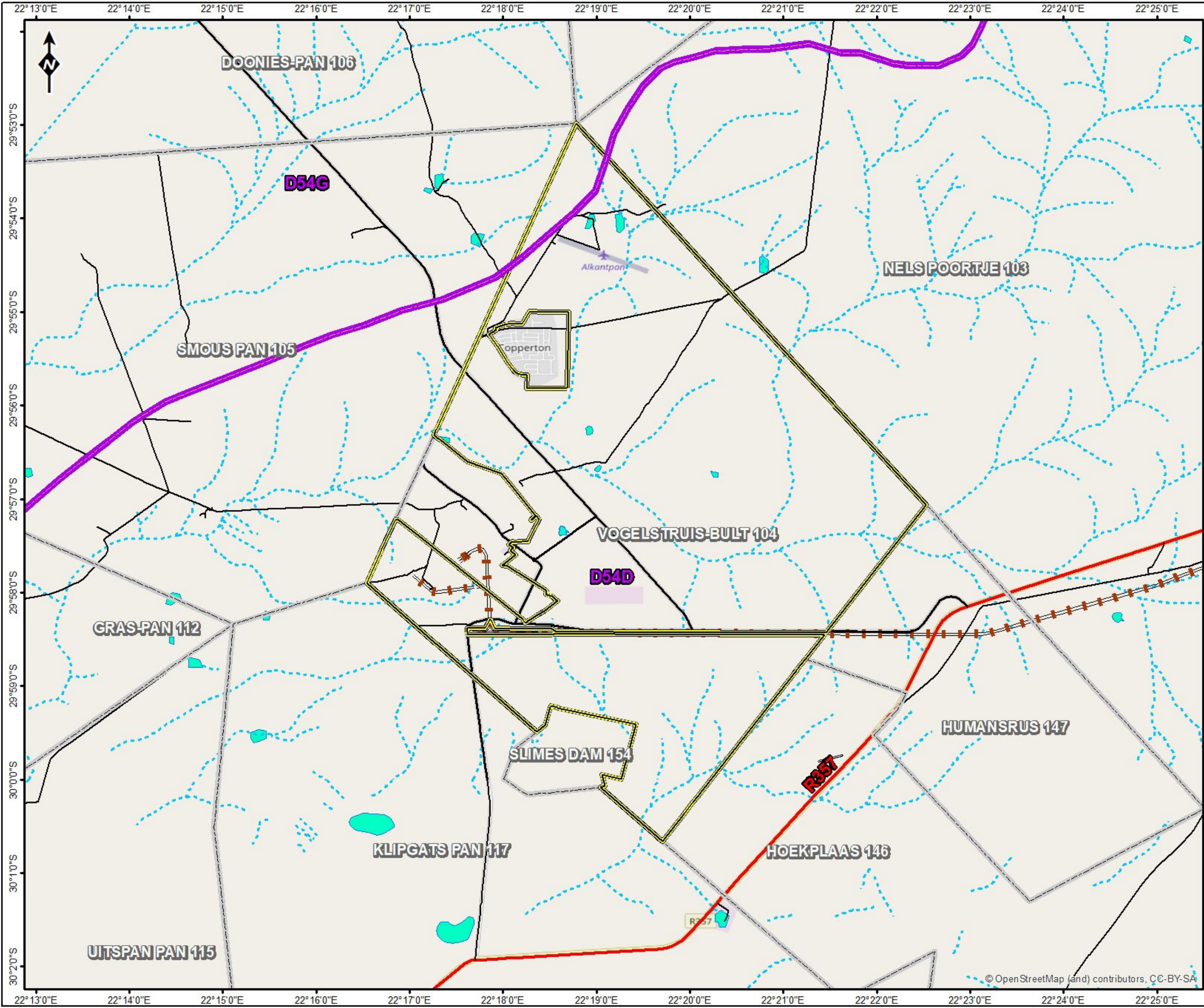


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**MAP 8: QUARternary CATCHMENTS**





**Prieska Zinc Copper Project  
(Vardocube Section)**

**Legend**

- Quaternary Catchments
- Farm Boundaries
- PROPOSED VARDOCUBE MRA**
- Vardocube
- ROAD NETWORK**
- Main Road
- Secondary Road
- Other Access
- Railway line
- RIVERS & STREAMS**
- Perennial River
- Non-Perennial River
- Wetlands

**QUATERNARY CATCHMENTS**













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Coordinate System: GCS WGS 1984 Datum: WGS 1984	
Scale: 1:69 329	Version: Final
Date: 2018/08/28	
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**MAP 9: CRITICAL BIODIVERSITY AND ECOLOGICAL SUPPORT AREAS**

Prieska Zinc Copper Project  
(Vardocube Section)

**Legend**

-  Farm Portions
-  Orebody Model
- PROPOSED VARDOCUBE MRA**
-  Vardocube
- CRITICAL BIODIVERSITY ASSESSMENT**
-  Protected Area
-  Critical Biodiversity Area One
-  Critical Biodiversity Area Two
-  Ecological Support Area
-  Other Natural Areas
- ROAD NETWORK**
-  Main Road
-  Secondary Road
-  Railway line
- RIVERS & STREAMS**
-  Non-Perennial River

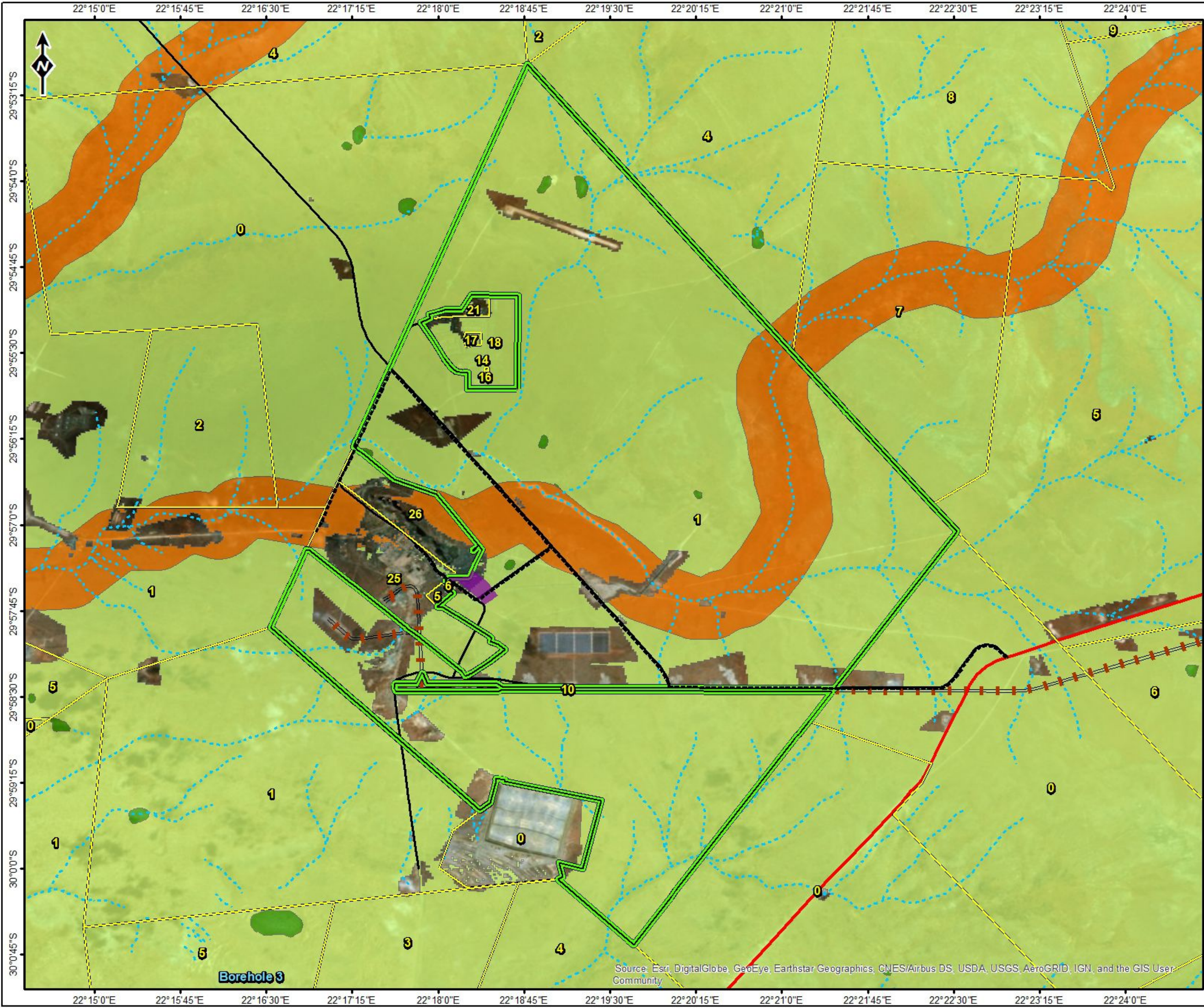
**NC CRITICAL BIODIVERSITY AREAS**

0 437.5 875 1750 Meters

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Coordinate System: GCS WGS 1984 Datum: WGS 1984	
Scale: 1:56 547	
Version Final	
Date: 2018/08/28	



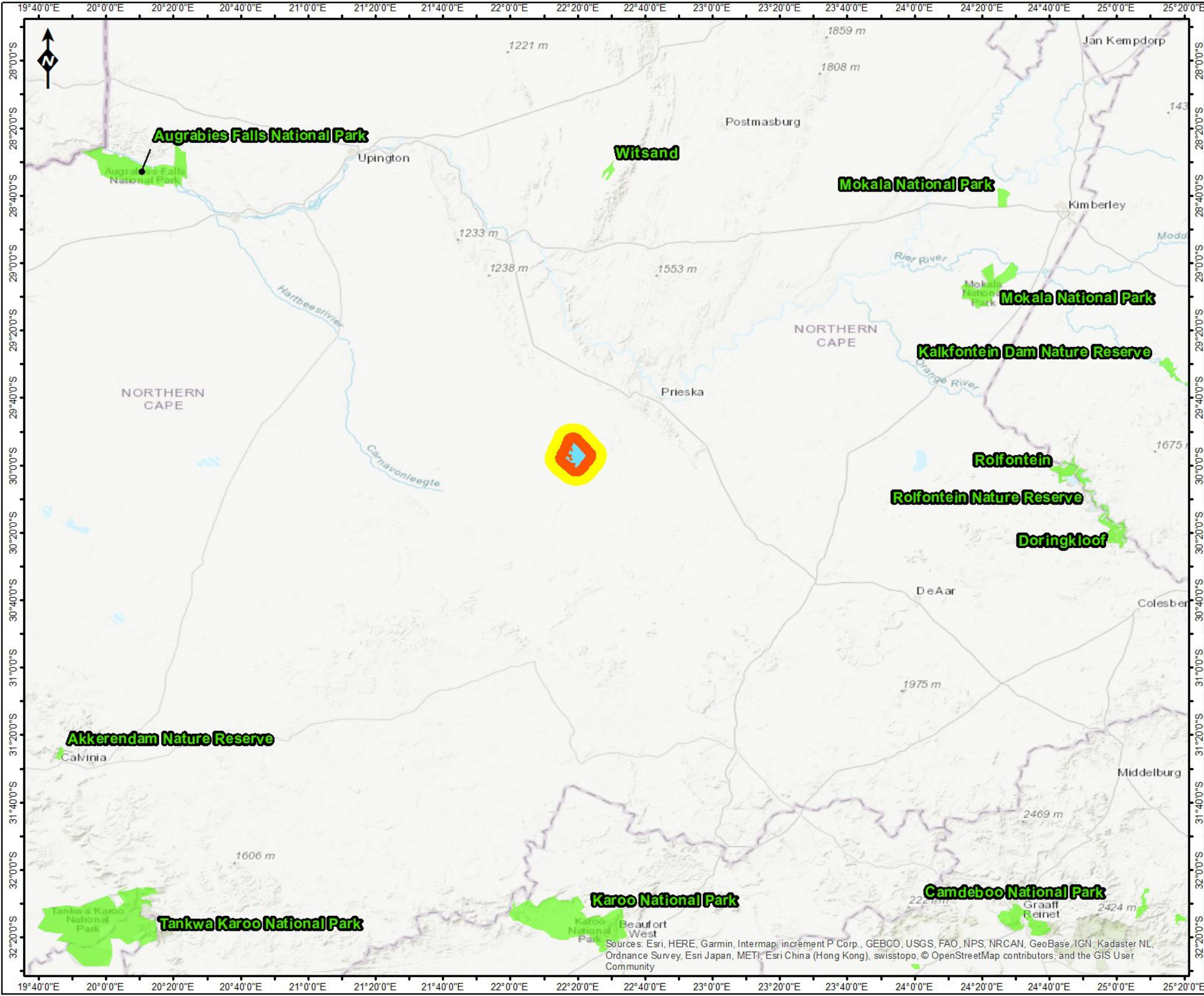

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**MAP 10: PROTECTED AREAS**

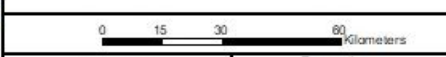


**Prieska Zinc Copper Project  
(Vardocube Section)**

**Legend**

-  5km Radius
-  10km Radius
-  Protected Areas
- PROPOSED VARDOCUBE MRA**
-  Vardocube

**PROTECTED AREAS**



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

	Scale: 1:1 900 000
	Version <b>Final</b>
	Date: 2018/08/28



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

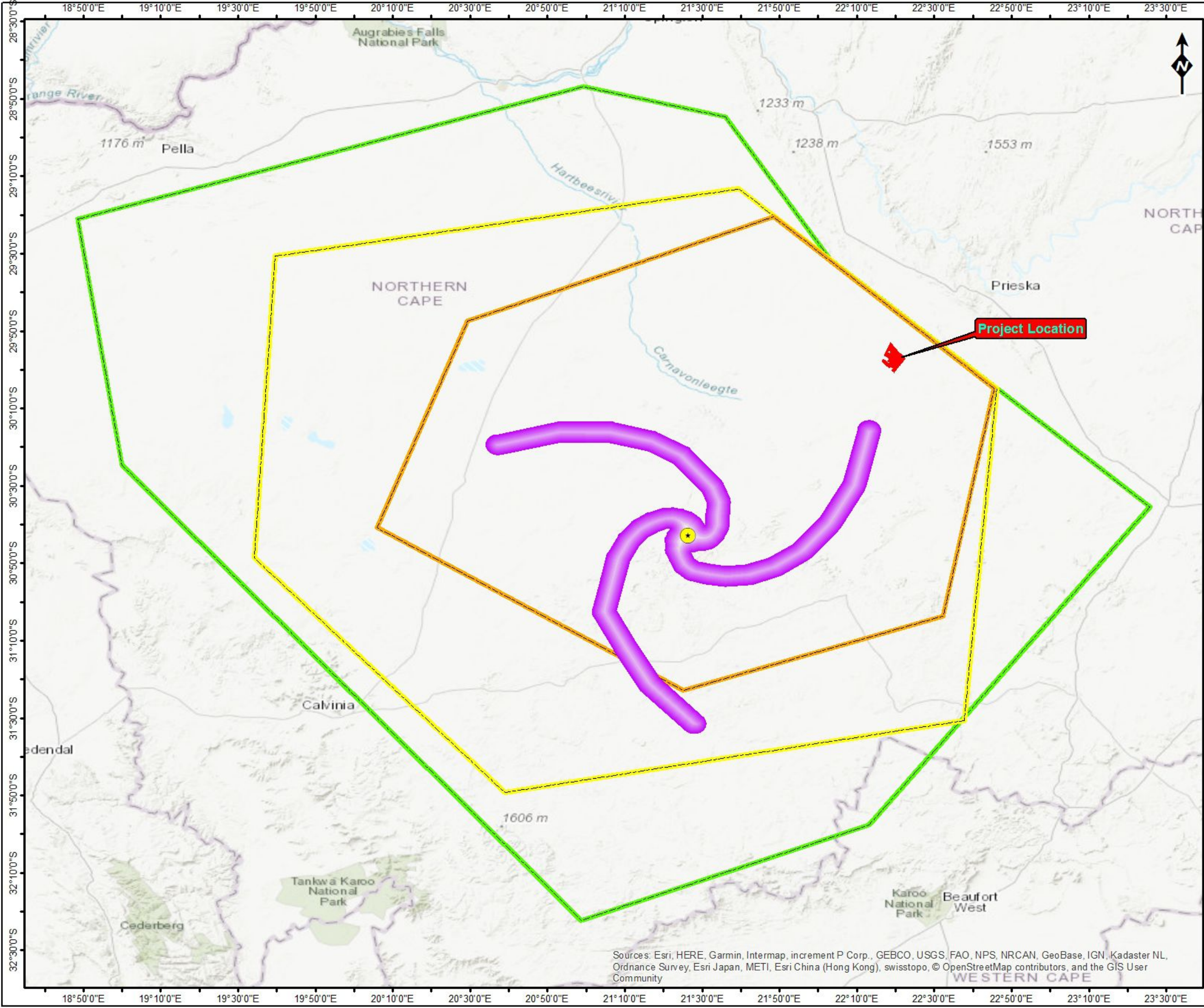
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**MAP 11: PCM IN RELATION TO THE KAROO CENTRAL AAA**

**Prieska Zinc Copper Project  
(Vardocube Section)**

**Legend**

- SKA Virtual Center
- PROPOSED VARDOCUBE MRA**
- Vardocube
- SKA AREA S**
- Central Astronomy Advantage Area 1
- Central Astronomy Advantage Area 2
- Central Astronomy Advantage Area 3
- SKA Phase 1 Corridors



**VARDOCUBE IN RELATION TO KAROO AAA**



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--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

<p><b>ABS Africa</b> Sustainability Advisors</p>	Scale: 1:1 675 000
	Version <b>Final</b>
	Date: 2018/08/28



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community













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**MAP 12: DISTURBED AREAS**

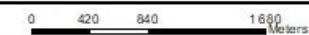


Prieska Zinc Copper Project  
(Vardocube Section)

**Legend**

-  Decline Shaft
  -  Concrete reservoirs
  -  Hutchings Shaft
  -  Sinkholes
  -  Farm Portions
  -  Disturbed Areas
- PROPOSED VARDOCUBE MRA**
-  Vardocube
- ROAD NETWORK**
-  Main Road
  -  Secondary Road
  -  Railway line
- RIVERS & STREAMS**
-  Non-Perennial River
  -  Wetlands

**Disturbed Areas**



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984



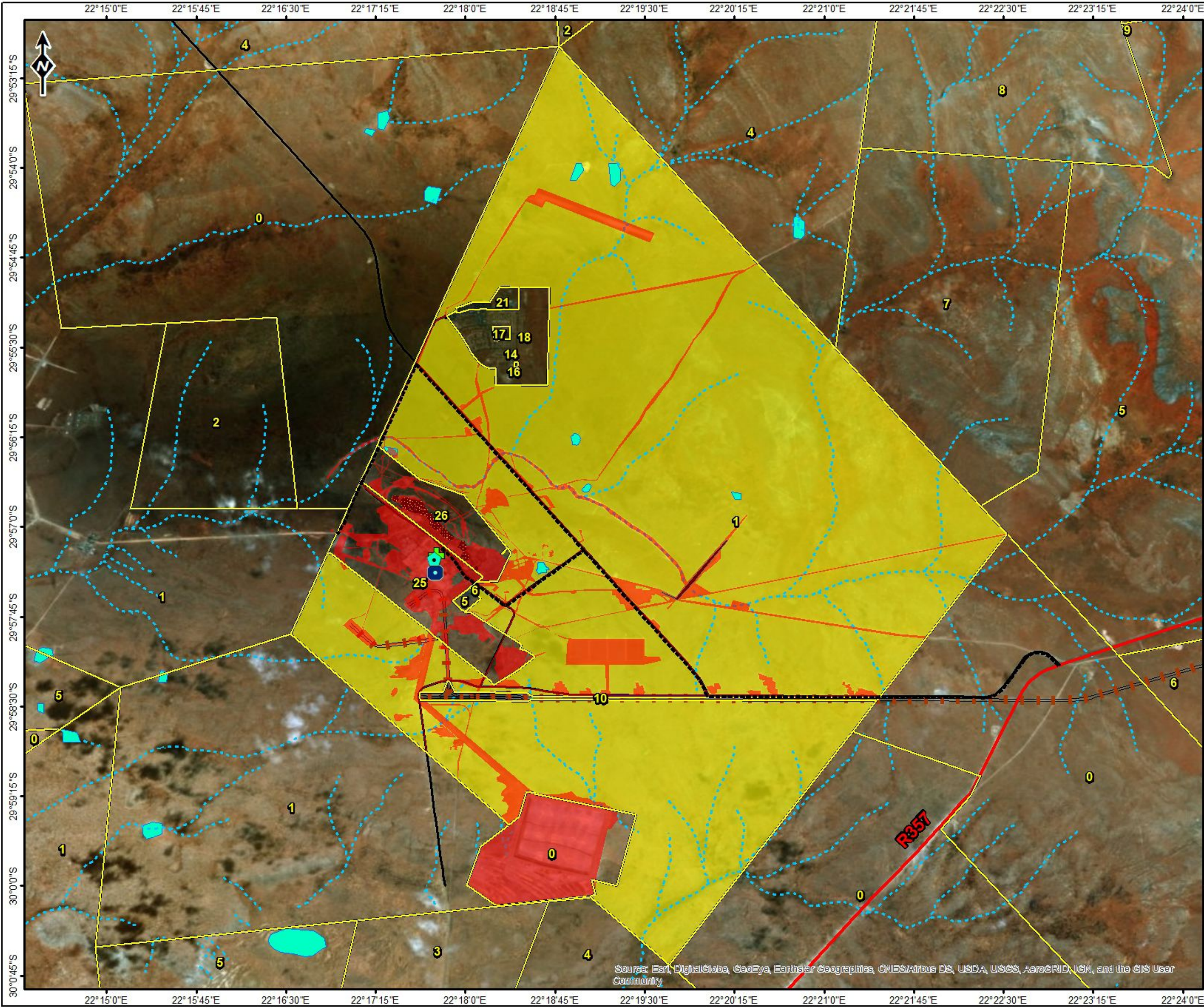
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Version **Final**

Date: 2018/08/28

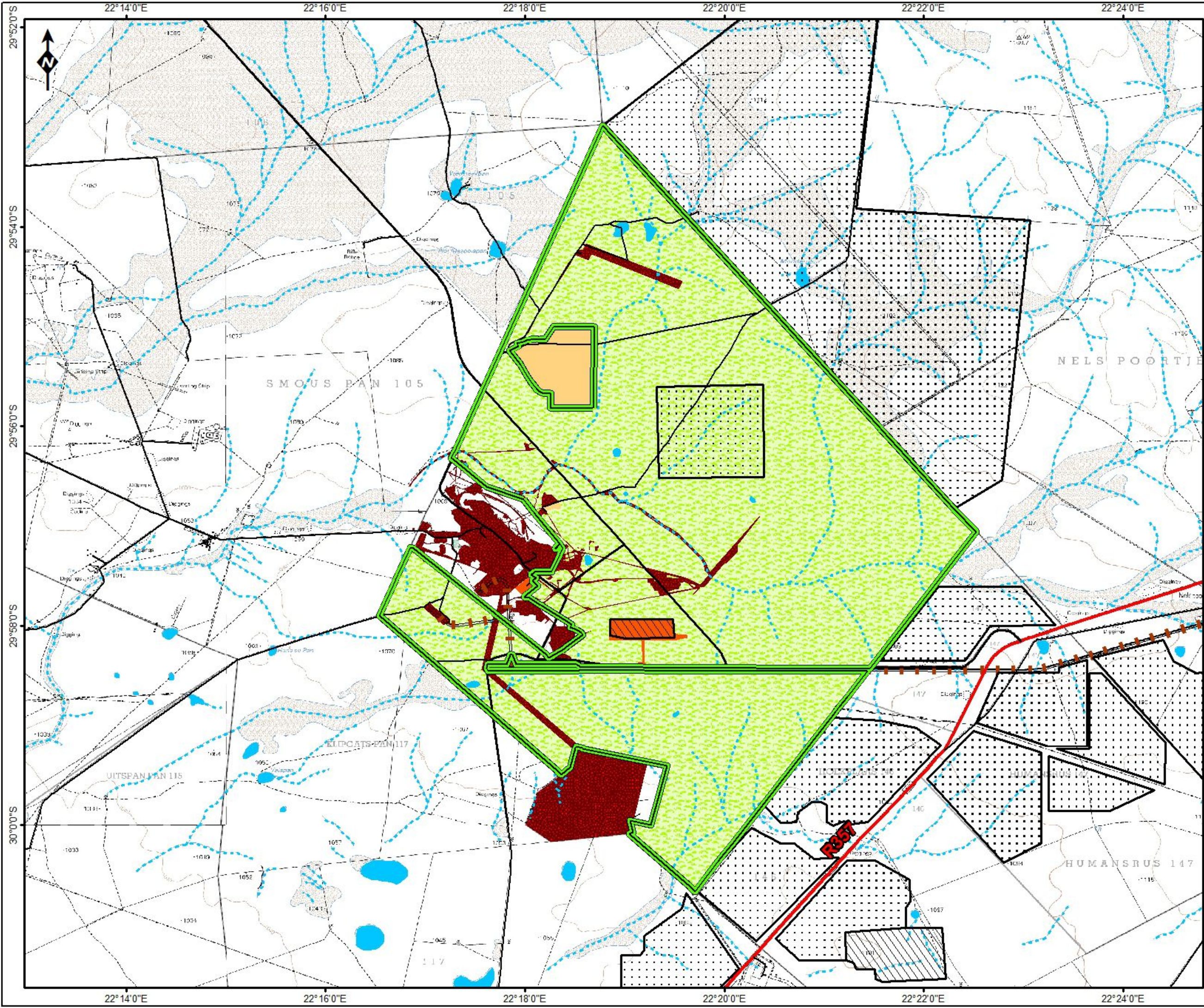


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community











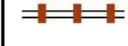





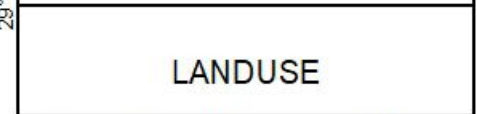
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**MAP 13: CURRENT LANDUSES**



**Legend**

-  Operating
-  Proposed
- PROPOSED VARDOCUBE MRA**
-  Vardocube
- LANDUSE**
-  Historical mining and related infrastructure
-  Power infrastructure
-  Residential
-  Agriculture - grazing
- ROAD NETWORK**
-  Main Road
-  Secondary Road
-  Other Access
-  Railway line
- RIVERS & STREAMS**
-  Perennial River
-  Non-Perennial River
-  Wetlands



Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984  
Datum: WGS 1984

	Scale: 1:65 000
	Version Final
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