

APPENDIX 1: EAP EXPERIENCE



Company Profile

www.abs-africa.com

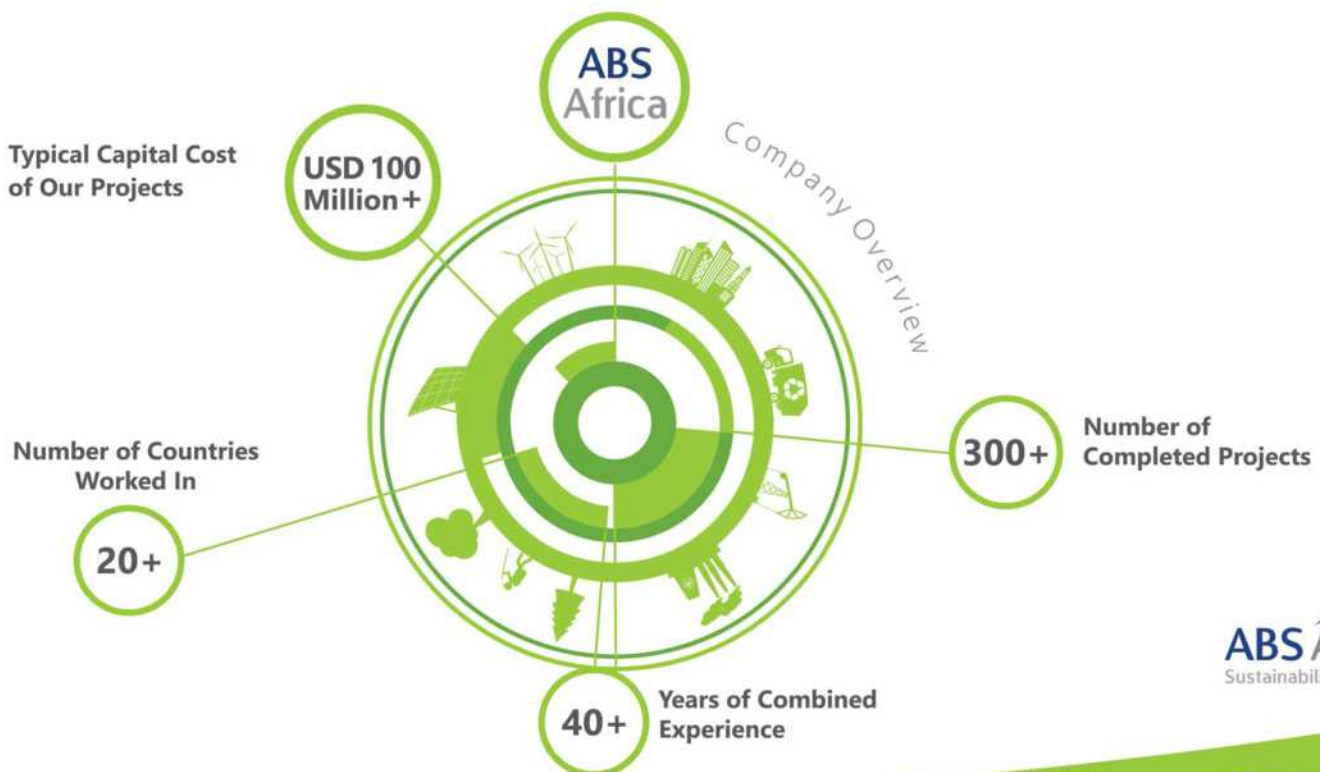
Company overview



Advisory on Business and Sustainability Africa (Pty) Ltd. (ABS Africa) provides advisory and consulting services focussed on sustainable development. The company was established in recognition of the need for business-specific and flexible professional advisory services on sustainability planning and implementation.

With more than 40 years collective experience in the mining, energy, and infrastructure sectors, our capabilities include prefeasibility and feasibility environmental assessments, independent competent persons reporting, environmental licensing, sustainability reporting, due diligence audits, compliance monitoring, resettlement planning, mine closure planning and spatial analysis.

The foundation of our service offering is our value system. We are committed to being unconditionally honest, excellent in the services we offer and available to our clients for as long as they think we can add value to their business.



ABS Africa

ABS Africa offers a complete range of sustainability services to clients in the mining, infrastructure and energy sectors.

We understand the complexity of environmental and social systems and the significant role these play in the long-term sustainability of a business.

From complex Environmental and Social Impact Assessments (ESIAs) to specialist advisory services in water, biodiversity, air quality, soils, and waste, our team of social and environmental professionals have been privileged to work for public and private sector institutions across the African continent.

We have established a network of selected specialist expertise and in-country sustainability professionals across Africa to complement our team. Through this network, we are able to ensure that our service, quality and value proposition remains consistent, regardless of where we work.

Developed from our success in the resources sector, we have gained considerable experience in the application of best practice standards and guidelines including the IFC Performance Standards and Equator Principles.



Our Core Services are as Follows:

- 🌱 Sustainable Development Advisory Services
- 🌱 Due Diligence Investigations and Review
- 🌱 Environmental Assessment
- 🌱 Environmental Audits and Compliance Monitoring
- 🌱 Environmental Management Programmes
- 🌱 GIS, Spatial Analysis and Spatial Planning
- 🌱 Mine Closure and Rehabilitation Planning
- 🌱 Permitting and Licensing



Sustainable Development Advisory Services

From early sustainable development interventions in the mid-1990s to the more recent commitments reached at COP21 and the UN Post-2015 Development Agenda, the ABS Africa team of professionals are privileged to be involved in advising clients on a range of sustainability aspects. We provide advisory services across the sustainable development continuum including sustainability business risk and opportunity assessments, carbon, GHG and climate change planning, and sustainability reporting. ABS Africa is a member of the Green Building Council of South Africa (GBCSA).



Due Diligence Investigations and Review

As trusted advisors to financial institutions, private investors, project owner's and some of the largest project engineering companies in the world, we have applied our expertise in advising clients on the potential risks and mitigation measures associated with acquisitions, third party reviews, recommissioning and other related activities.



Environmental Assessment

Our team of social and environmental professionals have completed numerous Environmental and Social Impact Assessments (ESIAs) in the mining, energy and infrastructure sectors. We have experience in applying our environmental assessment expertise throughout the project development process, from screening studies in concept stage to the successful completion of complex ESIAs compliant with international standards. With a project footprint encompassing most regions in Africa, we are familiar with the need to ensure that the assessment process addresses both in-country legal requirements and the IFC Performance Standards and Equator Principles.



Environmental Audits and Compliance Monitoring

From rapid gap analysis audits to comprehensive facility audits of complex industrial sites, we have experience in conducting audits against license conditions, company management systems and international best practice. We have assisted in the development of a guideline on compliance monitoring for a regulatory agency and provided compliance monitoring services during the construction phase of various developments including residential, port, rail and petroleum storage.

Capabilities



Environmental Management Programmes

Having been responsible for the setup and implementation of environmental management controls for the construction phase of a variety of large infrastructure projects, we are familiar with the challenges of constructing a development within the ambit of overly restrictive or inflexible management measures. From basic construction environmental management plans for small infrastructure developments to IFC-compliant Environmental Management Programmes with Action Plans, we have experience in compiling management plans and programmes which are risk-based, flexible and pragmatic.



GIS, Spatial Analysis and Spatial Planning

Our GIS capability includes a range of services including basic mapping for environmental assessments, environmental monitoring, floodline analysis and environmental permit applications. Spatial analysis, 3D analysis, geodatabases and the classification and interpretation of remotely sensed data is also undertaken. With access to a range of spatial data through our preferred partners, we also advise clients on the selection of the most appropriate spatial data for a particular project application.



Mine Closure Planning and Implementation

Working with selected specialists, ABS Africa has experience in the quantification of closure liabilities, the development and compilation of closure plans, specifications and the more practical aspects of setting up and managing rehabilitation and closure contracts.



Permitting and Licensing

Supported by our selected network of specialists and in-country environmental professionals, ABS Africa has considerable experience in obtaining the various environmental permits that may be required for a development. These include waste management licences, atmospheric emission licences, heritage permits, water use licences and permits for the relocation and/or removal of fauna and flora.





CONTACT US

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Company Profile

CURRICULUM VITAE

CHANÉ PRETORIUS

ENVIRONMENTAL ASSESSMENT PRACTITIONER

BACKGROUND

Chané is an environmental specialist at ABS Africa.

She has 4 years' experience in coordinating and managing various environmental studies in the mining and energy sectors.

Her key experience includes the management and compilation of local and international Environmental and Social Impact Assessments, in compliance with in-country and international standards. She has undertaken projects in South Africa, Zimbabwe, DRC, Mozambique, Mali and Ghana.

FIELDS OF COMPETENCE

- Environmental and Social Impact Assessments
- Environmental Auditing
- Project Management
- Fatal Flaw Assessments
- Pre-feasibility Assessments
- Environmental Due Diligence
- Basic Assessment Reports (BARs)
- Environmental Management Programmes (EMPr) and Action Plans
- Legal Registers

ACADEMIC QUALIFICATIONS

- Bachelor of Science in Tourism, Zoology and Geography: North West University, 2010
- Bachelor of Science (Honours) in Geography: University of Johannesburg, 2011

KEY PROJECT EXPERIENCE

KALANA GOLD PROJECT – MALI (2015-2016)

Project Manager for an IFC-compliant ESIA and RAP for a proposed gold mine and processing plant. The Project included management of various specialist sub-consultants and a local consultant responsible for the social studies as well as assistance with the completion of a Resettlement Action Plan (RAP).

ESAASE GOLD MINE PROJECT - GHANA (2013 – 2014)

Assistance with the project coordination of an EIA for a greenfield gold mine in Ghana. The Project included management of various specialist studies and coordination of the public participation process and social impact assessment. An online project legal register was developed.

HWANGE POWER STATION - ZIMBABWE (2013 – 2014)

Project management of the comprehensive environmental and social audit of the Hwange Power Station. The audit assessed compliance of the power station to both in-country legal requirements and the IFC performance standards. Studies were coordinated between experts in Australia, South Africa and Zimbabwe. A prioritized management plan was compiled with recommendations to address the findings of the audit.

FEKOLA GOLD PROJECT - MALI (2013)

Project assistance with the completion of an IFC-compliant ESIA for a proposed gold mine and processing plant.

ESTIMA COAL PROJECT - MOZAMBIQUE (2013)

Assisted with the fatal flaw analysis for the proposed Chitima Northern Conveyor Line.

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE KUSILE 60 YEAR ASH DISPOSAL FACILITY - MPUMALANGA, SOUTH AFRICA (2012)

Project coordination of an EIA for an ash disposal facility including management of specialist studies, report compilation and assistance with public participation. A desktop site selection study was undertaken as part of the EIA.

RENEWABLE ENERGY GUIDELINE - SOUTH AFRICA (2012)

Compilation of a guideline document for the Renewable Energy Sector on the listed activities in the Environmental Impact Assessment Regulations published under the National Environmental Management Act 107 of 1998.

WILGE / PHOLA SEWER AND WATER PIPELINE DEVELOPMENT PROJECT – MPUMALANGA, SOUTH AFRICA (2012)

Conducting the water use license application (WULA) process for Section 21 (c) and (i) water uses, including compilation of all DWA application forms and assisting with compilation of the technical report.

SOLAR PARK INTEGRATION PROJECT - NORTHERN CAPE, SOUTH AFRICA (2012)

Coordination and compilation of three Basic Assessment Reports (BAR) and associated EMPr for the Solar Park Integration Project consisting of:

- 3 x 132kV lines and 2 x 20MVA Transformers for the Solar Park Site
- 3 x 132kV lines for the independent power producers in Solar Park
- 5 x 132kV lines for Solar Park
- 2 x (±) 25km 132kV lines to Gordonia Substation (Upington)

MEDUPI POWER STATION OEMP – LIMPOPO, SOUTH AFRICA (2012)

Compilation of an Operational Environmental Management Plan for the Medupi Power Station.

LENASIA SOUTH HOSPITAL PROJECT – SOUTH AFRICA (2016)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and atmospheric emission license for the conversion of a community health centre into a Level 1 District Hospital.

SPRINGS FRESH PRODUCE MARKET EXPANSION PROJECT – SOUTH AFRICA (2016-2017)

Environmental Assessment Practitioner for an environmental authorisation for the expansion of the Springs Fresh Produce Market.

CURRICULUM VITAE

PAUL FURNISS

ENVIRONMENTAL ADVISOR / ENVIRONMENTAL ASSESSMENT PRACTITIONER

BACKGROUND

Paul is a Director of ABS Africa. He has 17 years environmental assessment and management experience in the energy, water, mining and infrastructure sectors. His project experience includes conducting environmental assessment studies in South Africa, Guinea, Lesotho, Democratic Republic of Congo, Sudan, Namibia, Botswana, Zimbabwe, and Mozambique.

In the role of environmental manager, he has been responsible for the setup and auditing of environmental construction management procedures for a range of developments. Having led various environmental due diligence assessments for mining clients and project financiers, he has a good understanding of international environmental governance requirements including Equator Principles and IFC Performance Standards.

FIELDS OF COMPETENCE

- Environmental and Social Impact Assessments for the energy, water, mining, and infrastructure sectors
- Integration of environmental management principles into EPCM activities throughout the project lifecycle
- Environmental risk and screening assessments
- Environmental permitting
- Environmental auditing
- Environmental due diligence studies
- Strategic environmental assessment
- Integrated waste management

ACADEMIC QUALIFICATIONS

- Bachelor of Agricultural Science in Animal Science: University of Pretoria, 1998
- Bachelor of Science (Honours) in Wildlife Management: University of Pretoria, 1999
- Master of Science in Environmental Science (Water Resource Management): University of Pretoria, 2000

PROFESSIONAL REGISTRATION

Pr.Sci.Nat. Professional Natural Scientist (Environmental Science): The South African Council for Natural Scientific Professions, 2007

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDIES

KRANSPIAN PROJECT – SOUTH AFRICA (2018 - PRESENT)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and integrated water use licence for a proposed surface and underground coal mine, near Carolina in the Mpumalanga Province.

NORTHERN CAPE PROSPECTING – SOUTH AFRICA (2018 - PRESENT)

Environmental Assessment Practitioner for three environmental authorisation processes in support of prospecting right applications, near Copperton and Marydale in the Northern Cape Province.

ZANDVOORT IWULA PROJECT – SOUTH AFRICA (2018 - PRESENT)

Environmental Assessment Practitioner for an integrated water use licence application (IWULA) for a proposed opencast coal mine near Carolina in the Mpumalanga Province.

PRIESKA ZINC COPPER PROJECT – SOUTH AFRICA (2017- PRESENT)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and integrated water use licence for the proposed re-establishment of the Prieska Copper Mine, near Copperton in the Northern Cape Province.

TRI-K GOLD PROJECT – GUINEA (2017-2018)

Environmental Assessment Practitioner for an IFC-compliant ESIA for a greenfields gold mining project in the Mandiana Prefecture of Guinea.

LENASIA SOUTH HOSPITAL PROJECT – SOUTH AFRICA (2016)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and atmospheric emission license for the conversion of a community health centre into a Level 1 District Hospital.

SEDIBENG WATER HARTSWATER REGIONAL OFFICE PROJECT – SOUTH AFRICA (2016-2017)

Environmental Assessment Practitioner for a rapid environmental screening assessment and compilation of an Environmental Management Plan for the new Sedibeng Water Regional Office in Hartswater.

SPRINGS FRESH PRODUCE MARKET EXPANSION PROJECT – SOUTH AFRICA (2016-2017)

Environmental Assessment Practitioner for an environmental authorisation for the expansion of the Springs Fresh Produce Market.

MORUPULE B UNITS 5 & 6 – BOTSWANA (2015-2016)

Specialist consultant for a JBIC and IFC compliant ESIA for a 300 MW thermal coal power plant.

EDF PROJECT TIZERT – MOROCCO (2015-2016)

Technical advisory services for an IFC-compliant ESIA for a copper mine and associated facilities in the Taroudant Province.

PUMPI COPPER AND COBALT PROJECT – DEMOCRATIC REPUBLIC OF CONGO (2014 – 2016)

Project Environmental Manager responsible for a comprehensive update of the Environmental Impact Study for an open-cast copper and cobalt mine, process plant and associated infrastructure.

HASSAÏ VMS PROJECT – SUDAN (2014 – 2015)

Lead consultant responsible for the legal register, review and gap analysis of environmental and social aspects for a gold mining and processing prefeasibility study at the Hassaï Mine.

THUSANANG HOUSING PROJECT – SOUTH AFRICA (2013)

Project Environmental Manager for the EIA and EMP for a 4000 unit residential 1 housing development for Anglo American Platinum, Rustenburg Local Municipality and the Department of Human Settlements.

MANGANESE PROJECT – BURKINA FASO AND CÔTE D'IVOIRE (2013)

Environmental coordinator for a prefeasibility study for a proposed mine, port and rail project for the export of Manganese from Burkina Faso to the Port of Abidjan.

MINERAL SANDS PROJECT – MOZAMBIQUE (2012)

Environmental programme manager responsible for establishing and coordinating all social and environmental studies for a pre-feasibility study for a large mineral sands project in Mozambique.

CONFIDENTIAL PROJECT – MOZAMBIQUE (2012)

Project Environmental Manager responsible for the preparation of environmental and social design criteria and high-level comparison of different rail alignment and port location options for a coal export project.

LANDAU LIFEX PROJECT - SOUTH AFRICA (2012)

Project Environmental Manager responsible for the compilation of non-mineral waste management plan and hazardous substances plan as part of a pre-feasibility study for Anglo American Thermal Coal.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2011-2012)

Project Environmental Manager for a pre-feasibility study for the development of a new iron and steel plant in South Africa including all associated infrastructure. Inputs included a multi-criteria site selection analysis and coordination of all environmental and social assessment inputs to the study.

NATIONAL INTEGRATED RESOURCE PLAN – NAMIBIA (2011)

Environmental advisor responsible for the assessment and description of the environmental and social issues associated with primary and secondary generation options.

150 MW WIND FARM PROJECT – LESOTHO (2011)

Project Environmental Manager responsible for the management and coordination of all environmental studies and environmental approval processes required for a 150 MW wind farm development in the Lesotho Highlands.

TRANSNET CAPITAL EXPANSION PROGRAMME – SOUTH AFRICA (2008-2011)

Mobilised as a full-time Environmental Manager for the Richards Bay region for the HMG-Joint Venture. The latter was established as the EPCM agent for the Transnet Capital Projects operating division of Transnet Limited. The role involved management and coordination of numerous environmental studies throughout the project lifecycle process including an environmental resource economic study for the Port of Richards Bay, environmental authorisation processes and fatal flaw assessments.

NUCLEAR 1 PROJECT – SOUTH AFRICA (2008)

Senior Project Scientist for the EIA and EMP for the proposed construction of a conventional nuclear power station and associated infrastructure in the Western Cape.

PEBBLE-BED MODULAR REACTOR DEMONSTRATION POWER PLANT PROJECT – SOUTH AFRICA (2007-2008)

Project Manager and Senior Project Scientist for the Impact Assessment Phase of the EIA and EMP for the proposed Pebble Bed Modular Reactor Demonstration Power Plant in the Western Cape.

600 MW MORUPULE B POWER STATION PROJECT – BOTSWANA (2008)

Team Leader for the 600 MW Morupule B coal-fired power station in Botswana. Compilation of the ESIA in a manner that complied with Botswana legislation and World Bank Group requirements.

INGULA PUMPED STORAGE SCHEME – SOUTH AFRICA (2007)

Project Manager for seven mining permit applications for borrowpits in the Free State and KwaZulu-Natal Provinces for the Ingula (previously Braamhoek) Pumped Storage Scheme Project.

GABORONE WASTEWATER RECLAMATION PROJECT – BOTSWANA (2007)

Senior Project Scientist for the Gaborone Wastewater Reclamation EIA. This project was aimed at determining the feasibility of reclaiming wastewater for direct potable reuse in Gaborone and its satellite villages.

SELEBI-PHIKWE WATER MASTER PLAN – BOTSWANA (2006)

Senior Project Scientist for the EIA, EMP and Public Consultation Process for the Selebi-Phikwe Water Master Plan.

HYDRA-PERSEUS 765KV POWER LINE EIA – SOUTH AFRICA (2007)

Senior Project Scientist for the EIA for the 260 km 765 kV transmission power line from the Hydra to Perseus Substations.

ENVIRONMENTAL MANAGEMENT, COMPLIANCE MONITORING AND REGULATION

DINGLETON RESETTLEMENT PROJECT – SOUTH AFRICA (2014)

Project Environmental Control Officer responsible for compilation of an Environmental Execution Plan for the Feasibility Study and the setup and implementation of the environmental compliance monitoring requirements for the project implementation phase.

DEA COMPLIANCE MONITORING PROJECT - SOUTH AFRICA (2007)

Task Team Leader for the Department of Environmental Affairs (DEA) Compliance Monitoring Project. The project involved the development of guidelines, systems and programmes for the Compliance Monitoring Directorate of DEA including compilation of a guideline for Emergency Incident reporting in terms of section 30 of the National Environmental Management Act, 1998 (Act 107 of 1998) and a compliance monitoring protocol for environmental authorisations.

JOHANNESBURG CITY PARKS GENERIC EMP - SOUTH AFRICA (2006)

Project Manager and Senior Project Scientist for the Generic EMP for Johannesburg City Parks (JCP). The Generic EMP was developed as a tool for managing the activities of all contractors employed to undertake construction work in the Public Open Spaces within the jurisdiction of the JCP.

ENVIRONMENTAL AUDITS AND DUE DILIGENCE

CONFIDENTIAL PROJECT – SOUTH AFRICA (2018)

Technical due diligence of environmental risks, permitting and closure liabilities associated with two coal mine assets in South Africa.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2017)

Technical due diligence of environmental risks and closure liabilities associated with several operating gold and coal mine assets in South Africa.

CHROME ASSET ACQUISITION – SOUTH AFRICA (2016)

Technical due diligence review of an existing chrome washing facility. The due diligence required identification of environmental and social risks, a review of all existing environmental licenses and consideration of rehabilitation and closure liabilities.

CONFIDENTIAL PROJECT – GUINEA (2012)

Environmental specialist responsible for advising on environmental risks associated with a potential project acquisition of an iron ore resource in West Africa.

SOLAR ENERGY FACILITY – SOUTH AFRICA (2012)

Environmental specialist for a lender's technical due diligence review against local regulations, International Finance Corporation performance standards and Equator Principles for a proposed 30 MW solar energy facility in the Western Cape Province.

WIND ENERGY FACILITY – SOUTH AFRICA (2012)

Environmental specialist for a technical due diligence review against local regulations, International Finance Corporation performance standards and Equator Principles for a proposed new wind energy facility in the Western Cape Province.

SUSTAINABILITY REPORTING

SASOL LIMITED SUSTAINABILITY ASSURANCE PROJECT – SOUTH AFRICA (2009)

Project Manager for the 2009 sustainability reporting assurance engagement for Sasol Limited. The engagement consisted of assuring sustainable performance data from health and safety, environmental and social indicators. Site audits were undertaken at numerous operational sites representative of Sasol's different business units.

**ANGLO AMERICAN PLC SUSTAINABILITY ASSURANCE
PROJECT – VARIOUS COUNTRIES (2009)**

Project Manager for the 2009 sustainability reporting assurance engagement for Anglo American plc. This assurance engagement comprised of site audits at representative operations within Anglo Platinum, Kumba Iron Ore, Scaw, Anglo Coal and Tarmac. The site audits were undertaken in South Africa, Brazil, Chile, Australia and the United Kingdom with twenty sustainability indicators in key performance areas of human capital, natural capital and social capital.

STRATEGIC ENVIRONMENTAL ASSESSMENTS

**SEA FOR THE PORT HARCOURT MASTERPLAN – NIGERIA
(2008)**

Project Manager and Senior Project Scientist for the Strategic Environmental Assessment of the Masterplan for the city of Port Harcourt. The Masterplan was to provide for the development of a new city, appropriately designed for the current and future population of the existing Port Harcourt.

**SEA FOR ELECTRICITY DISTRIBUTION INFRASTRUCTURE FOR
THE MAGALIESBERG AND SURROUNDING AREAS - SOUTH
AFRICA (2007)**

Project Manager and Senior Project Scientist for the Strategic Environmental Assessment of the Magaliesberg and Surrounding Areas for Eskom Distribution. The SEA considered the environmental attributes of the study area and provided an environmental planning framework specific to the needs of Eskom Distribution.

SEA FOR HERITAGE PARK - SOUTH AFRICA (2006)

Senior Project Scientist for the Strategic Environmental Assessment of the one million ha Heritage Park. This ecologically sensitive and socio-economically complex Park encompasses Pilansberg and Madikwe Nature Reserve and crosses the border between South Africa and Botswana.

APPENDIX 2: SUMMARY LIST OF KEY POLICY AND LEGISLATIVE INSTRUMENTS

Access to Land, Land Use and Development Planning

- Upgrading of Land Tenure Rights Act 112 of 1991
- Less Formal Township Establishment Act 113 of 1991
- Restitution of Land Rights Act 22 of 1994
- Land Reform (Labour Tenants) Act 3 of 1996
- Communal Property Associations Act 28 of 1996
- Interim Protection of Informal Land Rights Act 31 of 1996
- Extension of Security of Tenure Act 62 of 1997
- Fencing Act 31 of 1963
- Prevention of Illegal Eviction from and Unlawful Occupation of Land Act 19 of 1998
- Communal Land Rights Act 11 of 2004
- The Development Facilitation Act 67 of 1995
- Local Government Transition Act 209 of 1993
- Local Government: Municipal Structures Act 117 of 1998
- Local Government: Municipal Systems Act 32 of 2000
- National Building Regulations and Building Standards Act 103 of 1977
- Northern Cape Planning and Development Act 7 of 1998
- Spatial Planning and Land Use Management Act 16 of 2013
- Astronomy Geographic Advantage Act 21 of 2007

Mining and Mineral Rights

- Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA)
- Minerals and Petroleum Resources Development Amendment Act 49 of 2008
- Mine Health and Safety Act 29 of 1996
- Nuclear Energy Act 46 of 1999
- National Nuclear Regulator Act 47 of 1999

Environmental Assessment

- National Environmental Management Act 107 of 1998 (NEMA)
- National Environmental Management Amendment Act 62 of 2008 (NEMA)
- National Environmental Management Laws Second Amendment Act 30 of 2013 (NEMA)
- National Environmental Management Laws Amendment Act 14 of 2013 (NEMA)
- National Environmental Management Laws Amendment Act 25 of 2014 (NEMA)

Protected Areas

- National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)
- National Environmental Management: Protected Areas Amendment Act 21 of 2014
- National Forests Act 84 of 1998

Astronomy Geographic Advantage Act 21 of 2007

Agricultural Resources

- ↻ Conservation of Agricultural Resources Act 43 of 1983
- ↻ Subdivision of Agricultural Land Act 70 of 1970

Biodiversity

- ↻ National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA)
- ↻ Game Theft Act 105 of 1991
- ↻ Animals Protection Act 71 of 1962
- ↻ National Veld and Forest Fire Act 101 of 1998
- ↻ Nature Conservation Ordinance 19 of 1974
- ↻ Northern Cape Nature Conservation Act 9 of 2009
- ↻ Municipal Ordinance PN955 of 1975

Water

- ↻ National Water Act 36 of 1998
- ↻ National Water Amendment Act 27 of 2014
- ↻ Water Services Act 108 of 1997

Roads and Traffic

- ↻ National Land Transport Act 5 of 1998
- ↻ Road Traffic Act 29 of 1989

Pollution

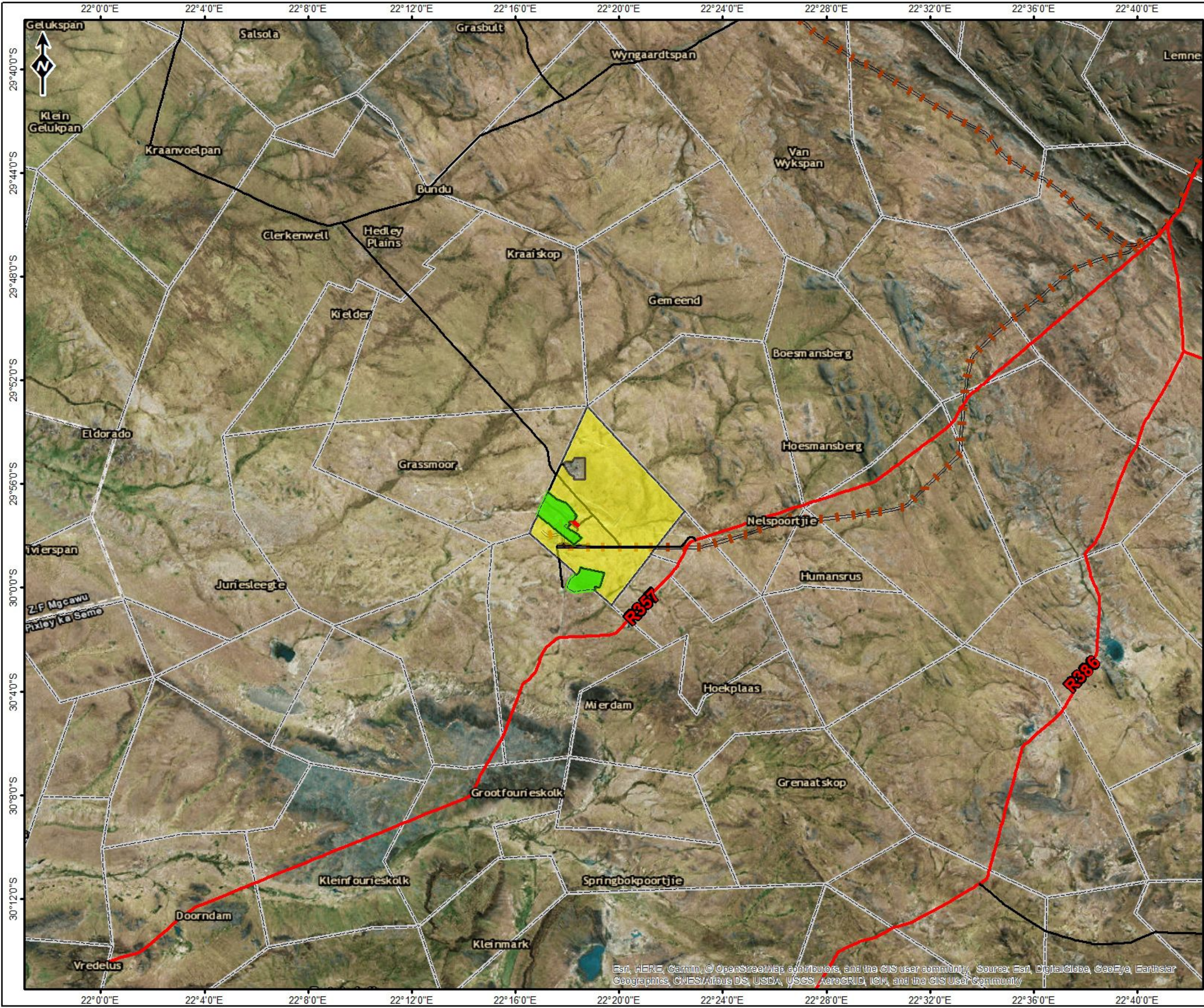
- ↻ Health Act 63 of 1977
- ↻ Hazardous Substances Act 115 of 1973
- ↻ National Environmental Management: Waste Act 59 of 2008
- ↻ National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA)
- ↻ National Environmental Management: Waste Amendment Act 26 of 2014
- ↻ Municipal Ordinance PN20 of 1974

Heritage Resources

- ↻ National Heritage Resources Act 25 of 1999
- ↻ World Heritage Convention Act 49 of 1999

APPENDIX 3: MAPS

MAP 1: REGIONAL LOCALITY MAP

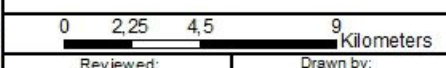


**Prieska Zinc Copper Project
(Vardocube Section)**

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
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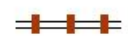
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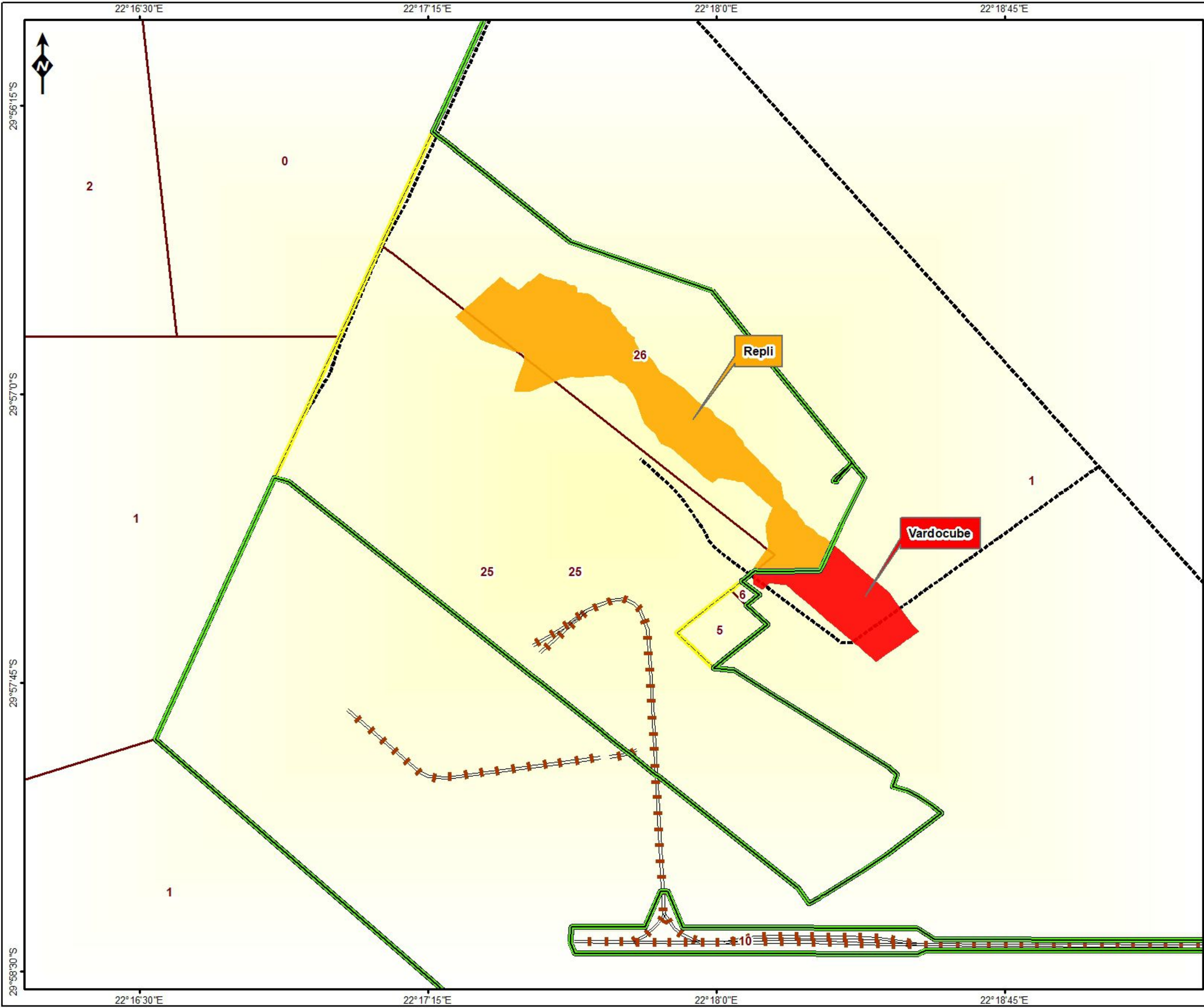


MAP 2: ORION PCM ORE BODY

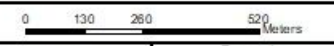
Prieska Zinc Copper Project (Vardocube Section)

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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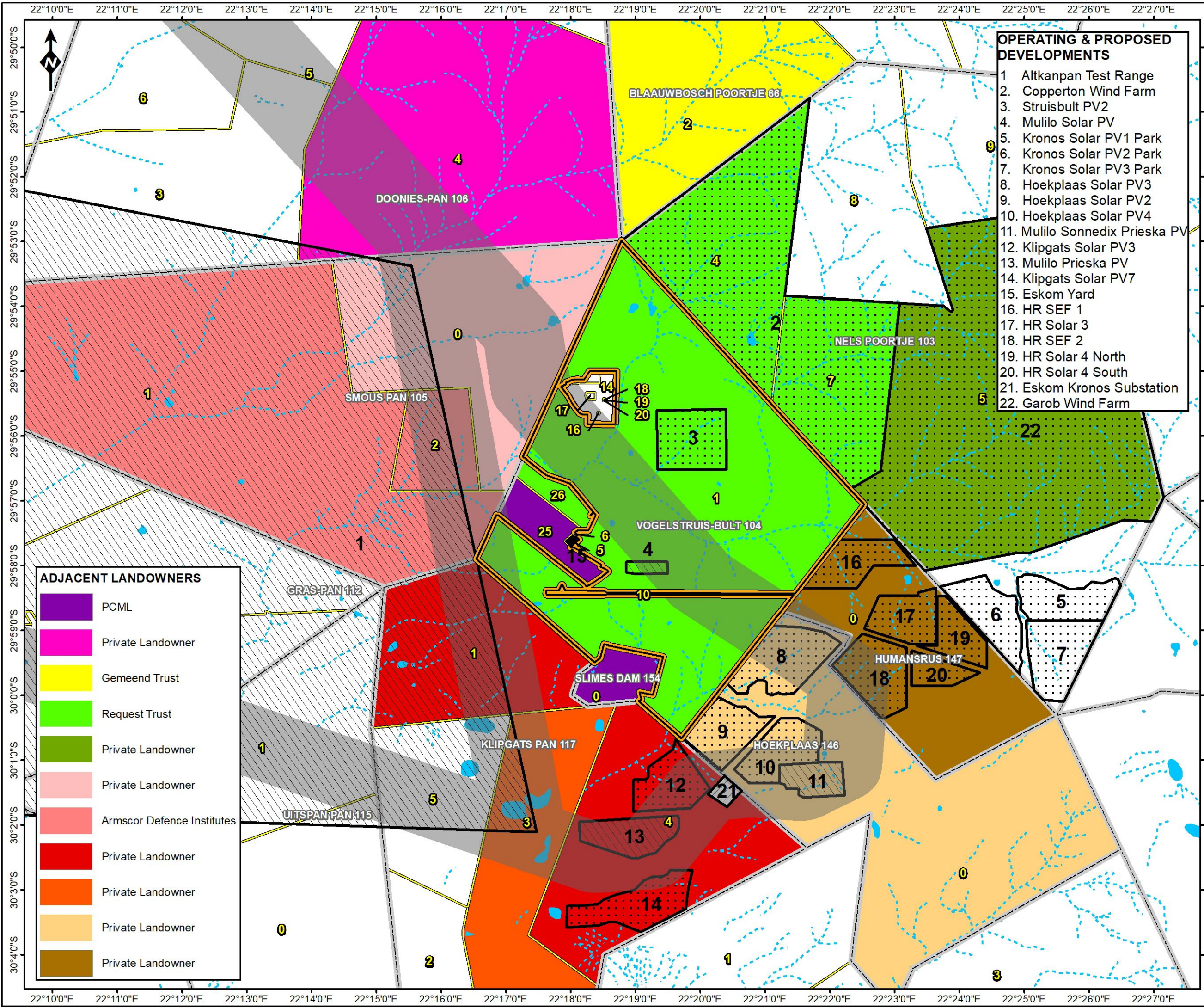
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MAP 3: SURROUNDING LANDOWNERS AND LANDUSERS



- 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
 21. Eskom Kronos Substation
 22. Garob Wind Farm

- ADJACENT LANDOWNERS**
- PCML
 - Private Landowner
 - Gemeend Trust
 - Request Trust
 - Private Landowner
 - Private Landowner
 - Armscor Defence Institutes
 - Private Landowner
 - Private Landowner
 - Private Landowner
 - Private Landowner

Prieska Zinc Copper Project (Vardocube Section)

Legend

- Possible Kronos Powerline Corridors
 - ESKOM Yard
 - Eskom Kronos Substation
 - Farm Boundaries
- OPERATING & PROPOSED DEVELOPMENTS**
- Operating
 - Proposed
- PROPOSED VARDOCUBE MRA**
- Vardocube
- RIVERS & STREAMS**
- Perennial River
 - Non-Perennial River
 - Wetlands

SURROUNDING LANDOWNERS

0 750 1 500 3 000 Meters

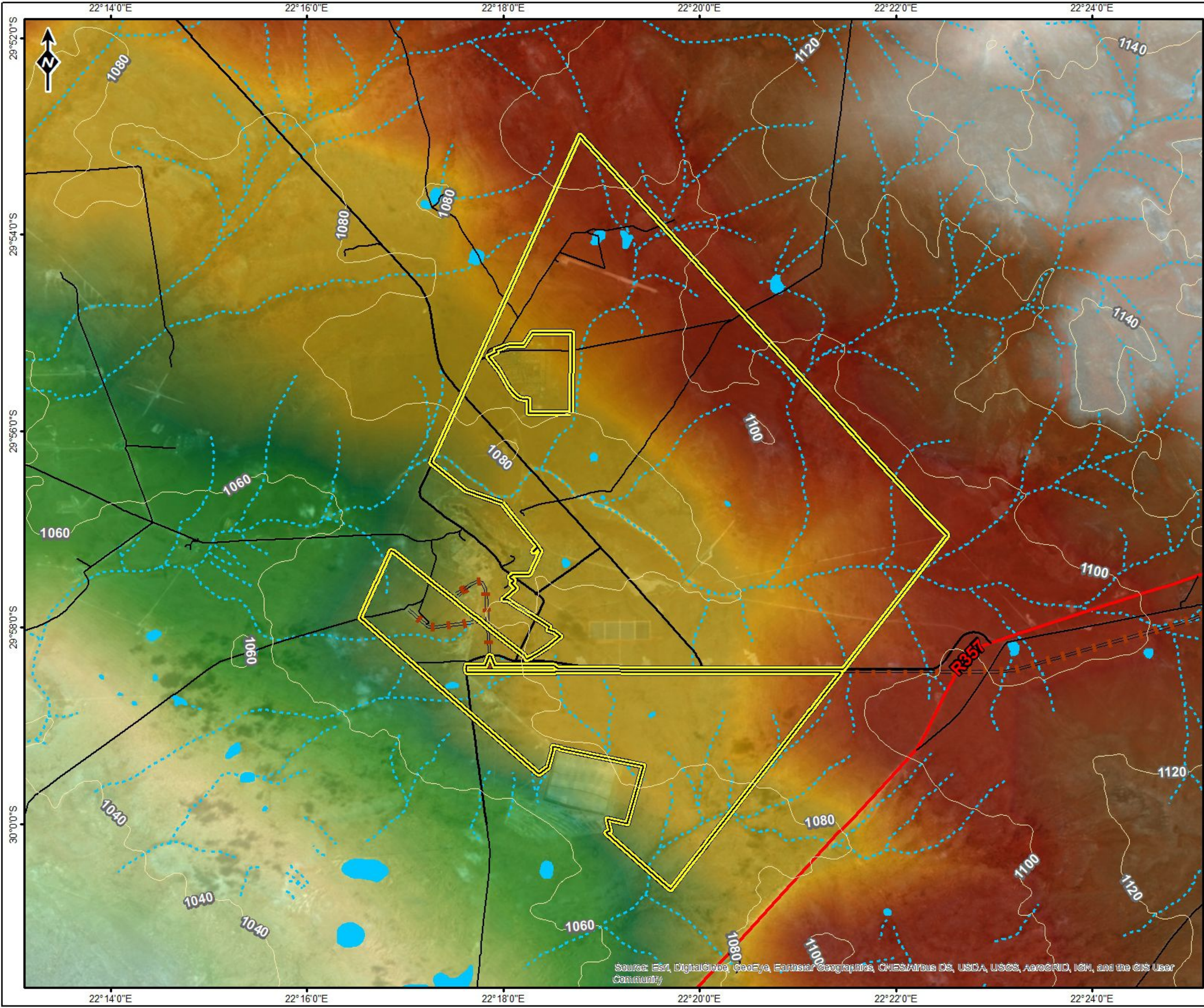
Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
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Version: Final
Date: 2019/01/10



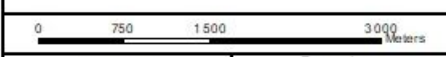
MAP 4: TOPOGRAPHY



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
	Version Final
	Date: 2018/08/28



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

MAP 5: GEOLOGY

Legend

PROPOSED VARDOCUBE MRA



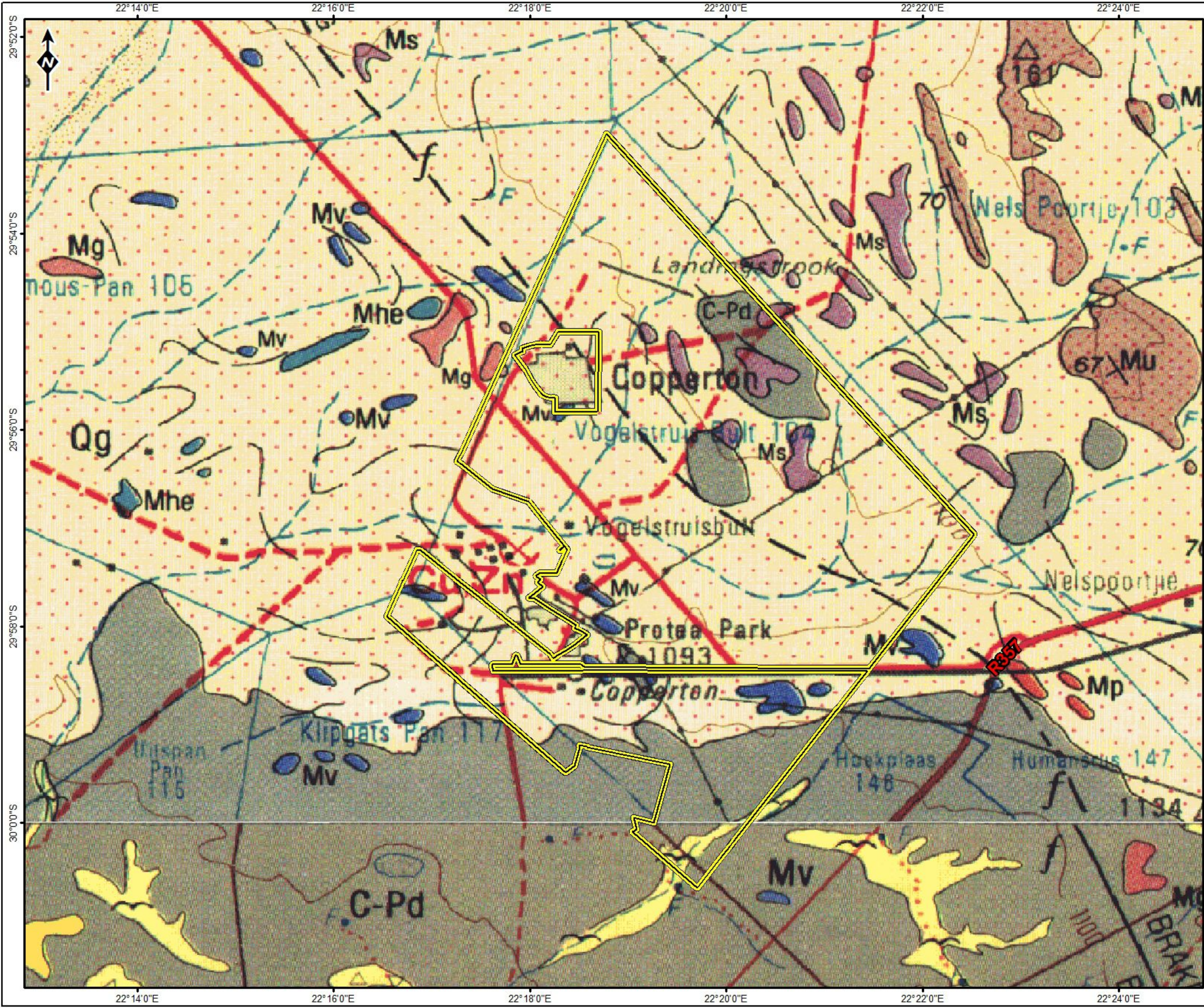
GEOLOGY



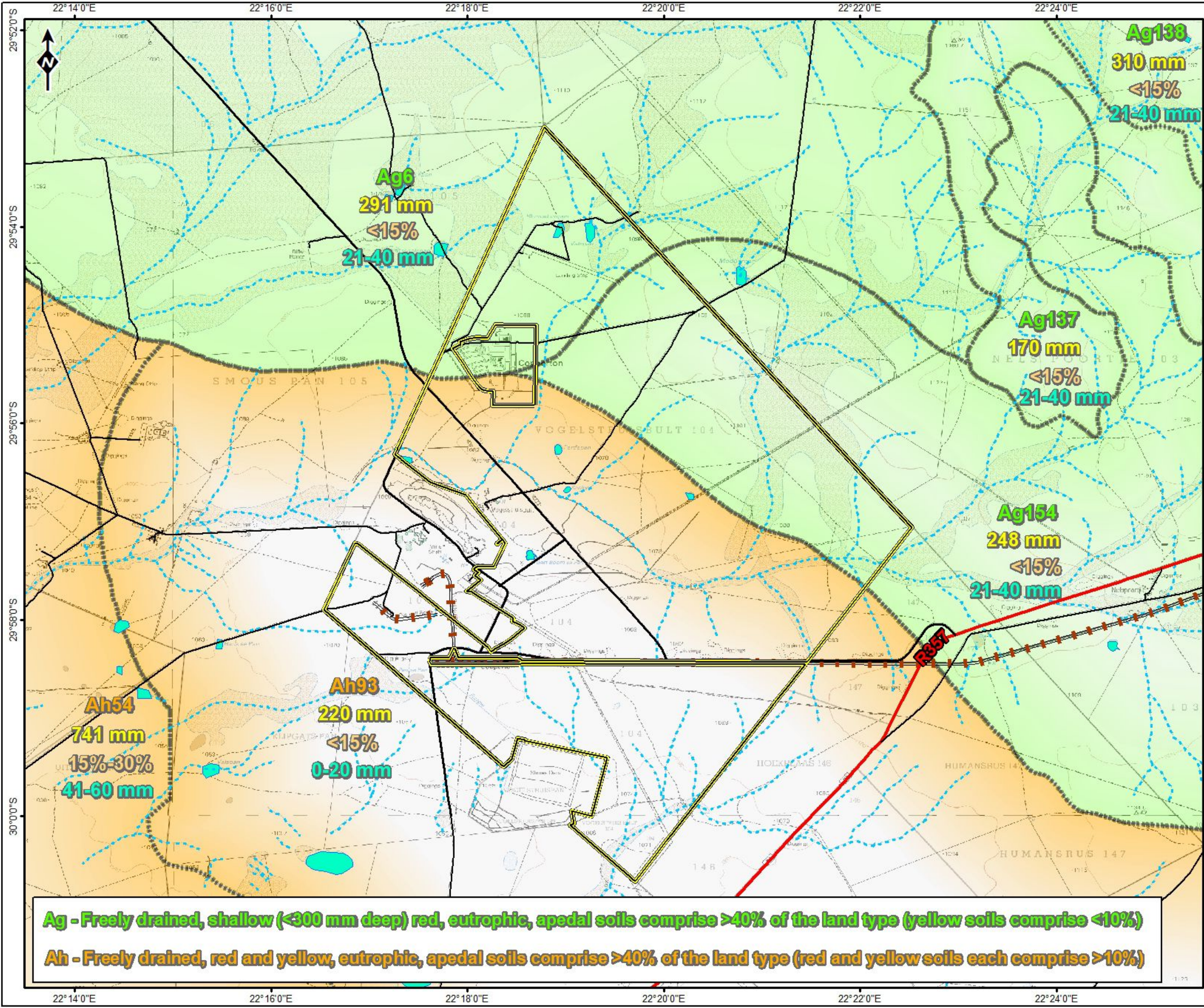
Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
--	--

Coordinate System: GCS WGS 1984
Datum: WGS 1984

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



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

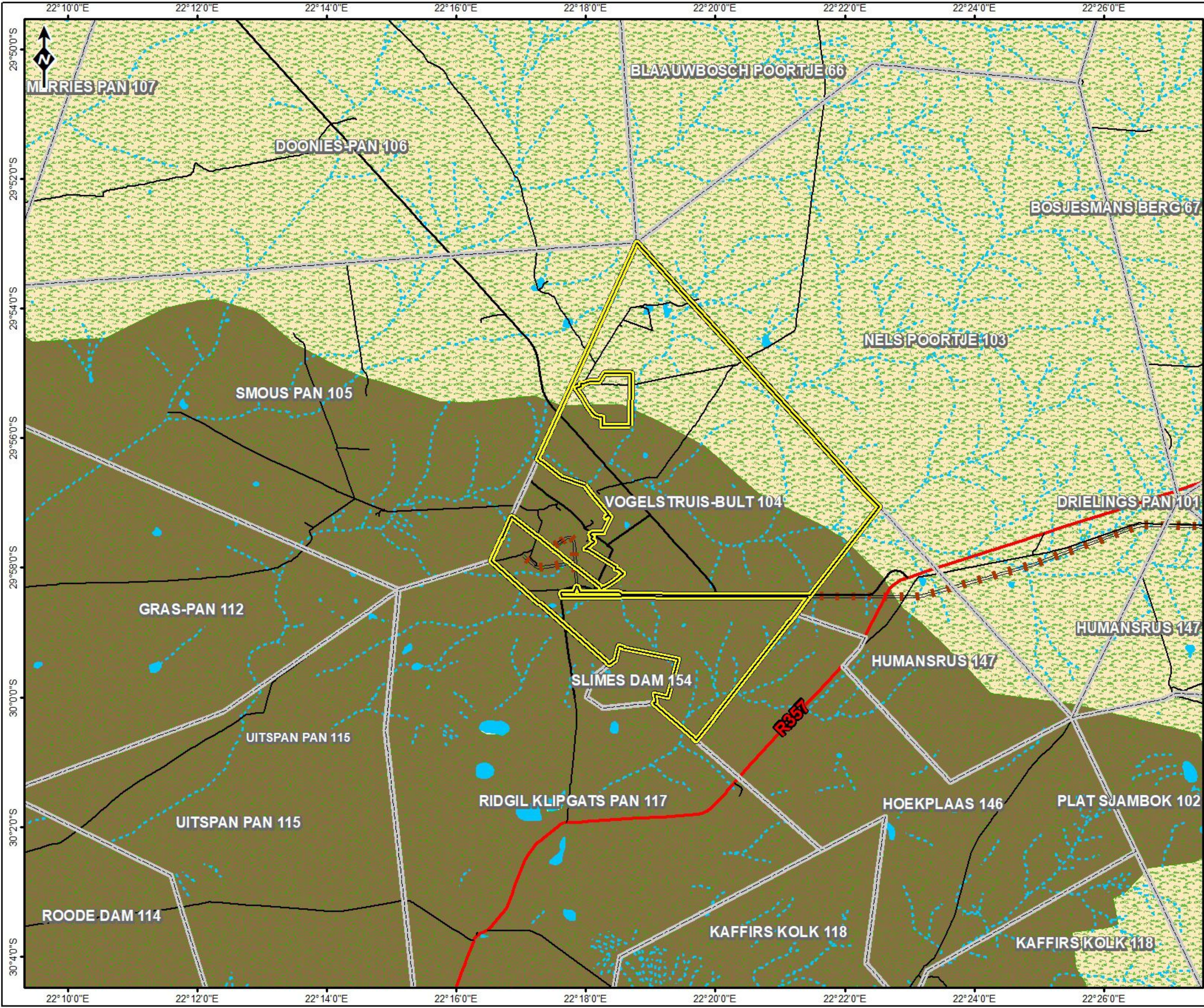
	Scale: 1:66 000
	Version Final
	Date: 2018/08/28

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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%)

MAP 7: VEGETATION

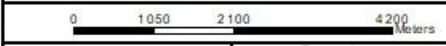


**Prieska Zinc Copper Project
(Vardocube Section)**

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



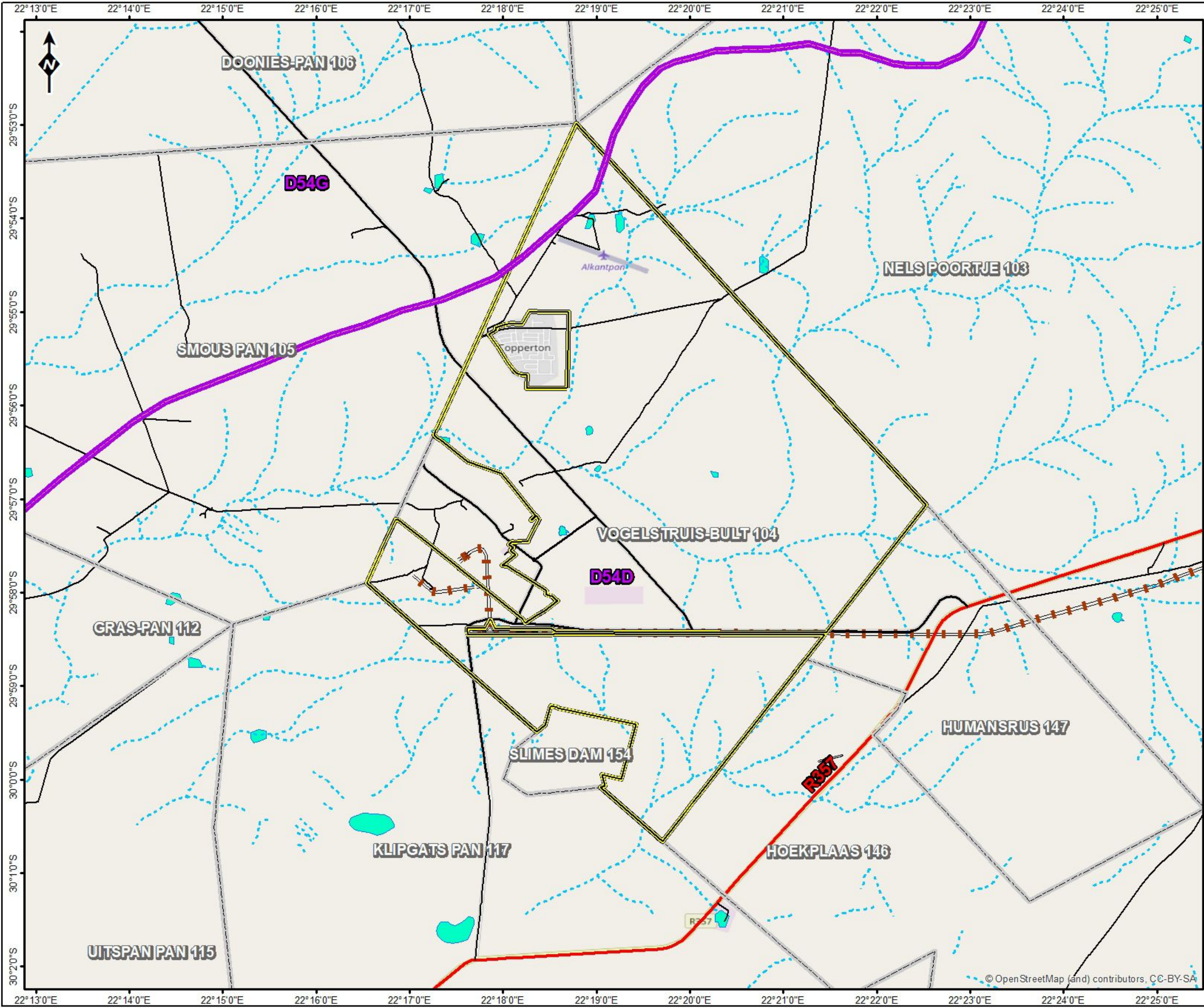
Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
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Coordinate System: GCS WGS 1984
Datum: WGS 1984

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



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

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

Reviewed:
P. Furniss
Environmental Scientist

Drawn by:
NH Cele
GIS Specialist

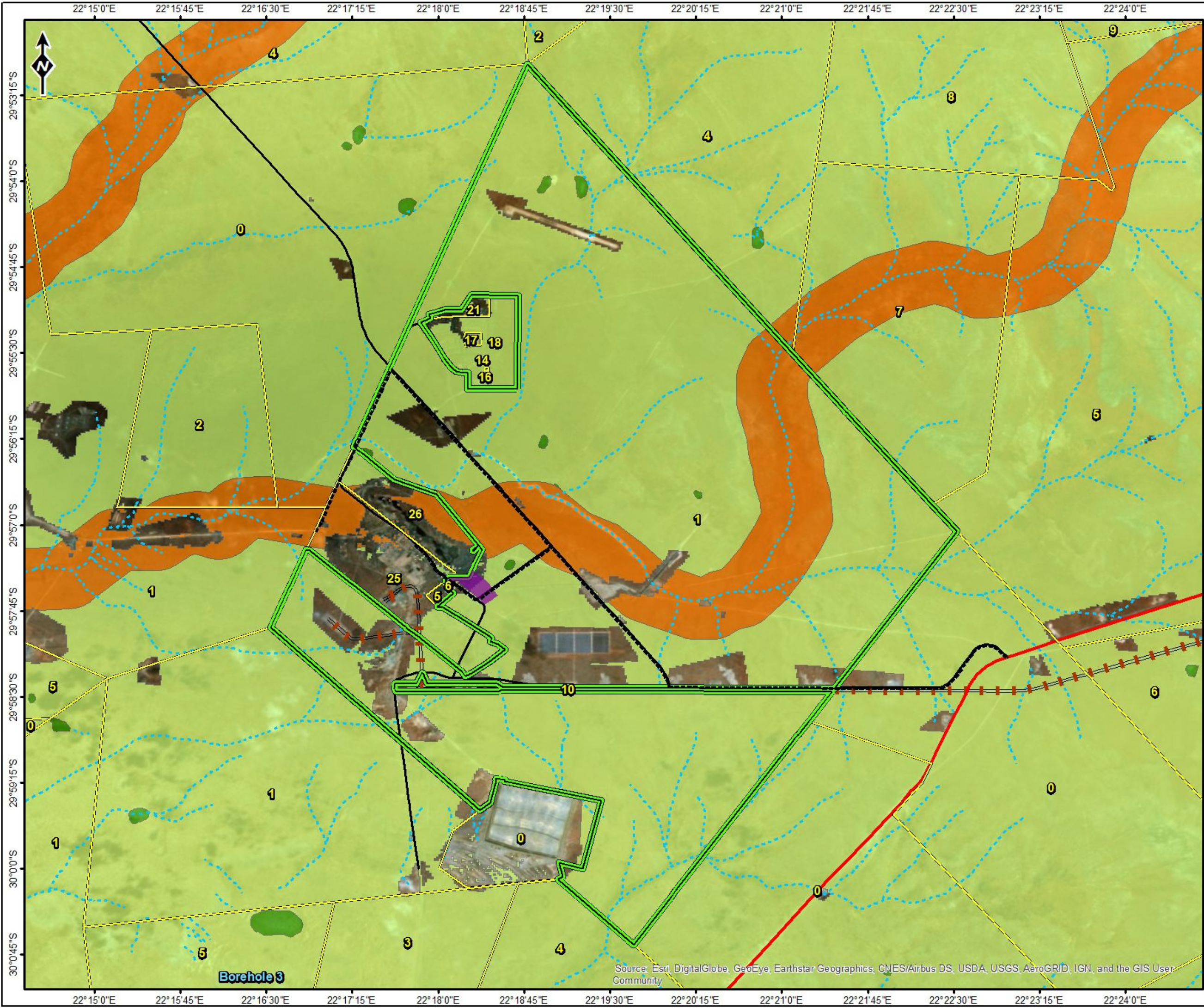
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Datum: WGS 1984



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Version **Final**

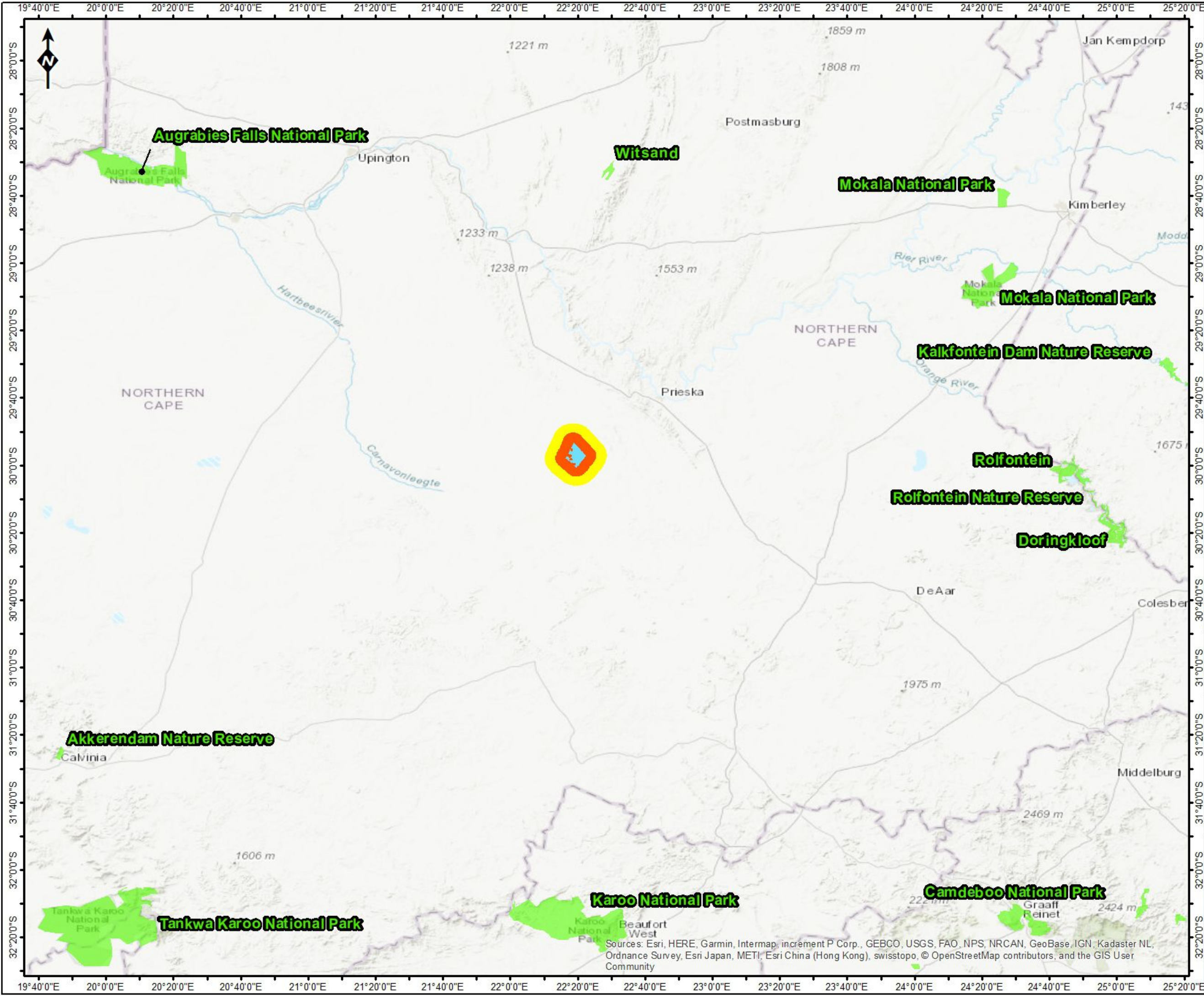
Date: 2018/08/28



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





Borehole 3

MAP 10: PROTECTED AREAS

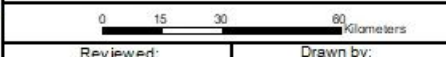


**Prieska Zinc Copper Project
(Vardocube Section)**

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 Final
	Date: 2018/08/28



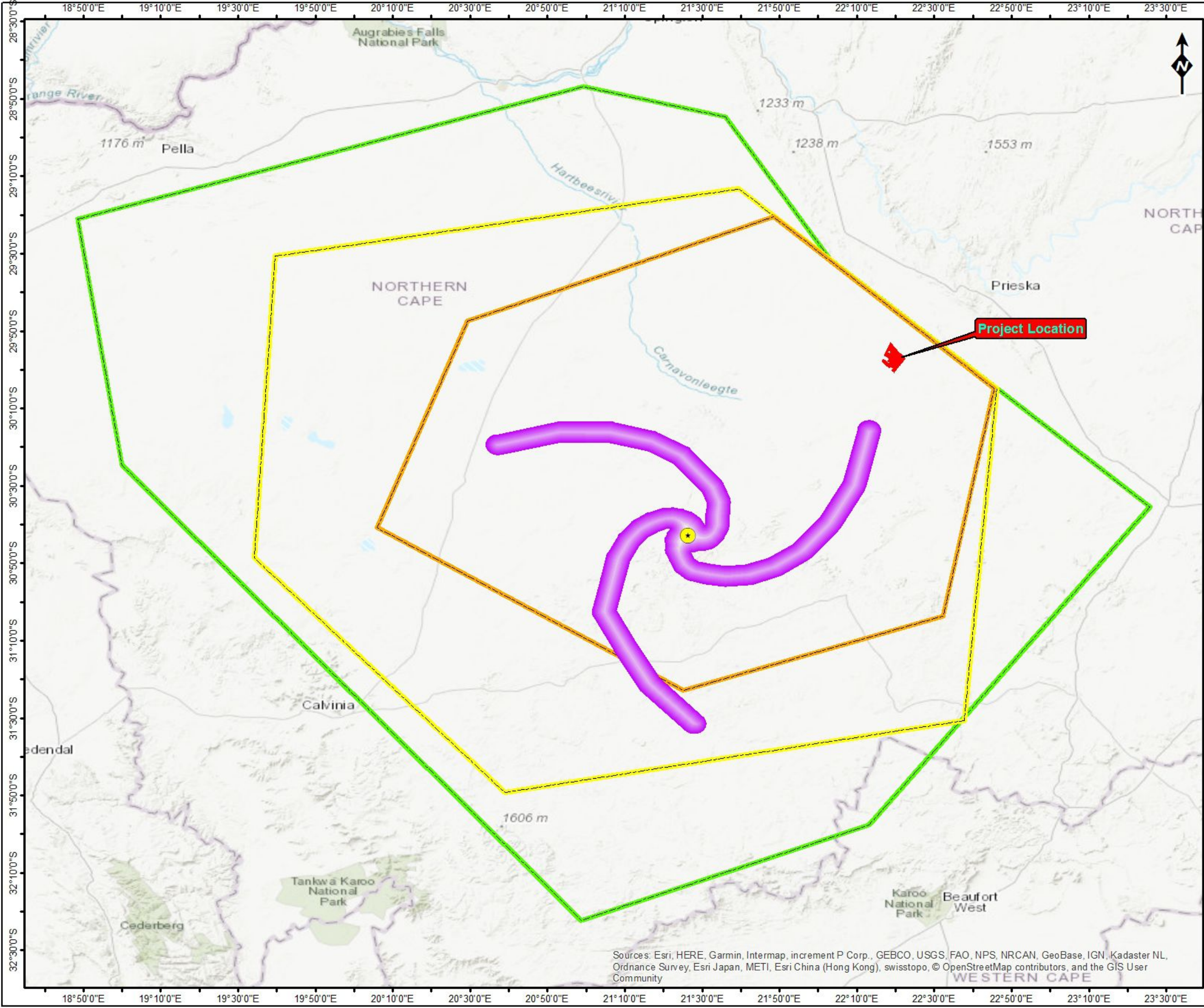
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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

0 15 30 60 Kilometers

Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
Coordinate System: GCS WGS 1984 Datum: WGS 1984	

<p>ABS Africa Sustainability Advisors</p>	Scale: 1:1 675 000
	Version Final
	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

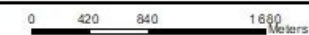
MAP 12: DISTURBED AREAS

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
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Coordinate System: GCS WGS 1984
Datum: WGS 1984



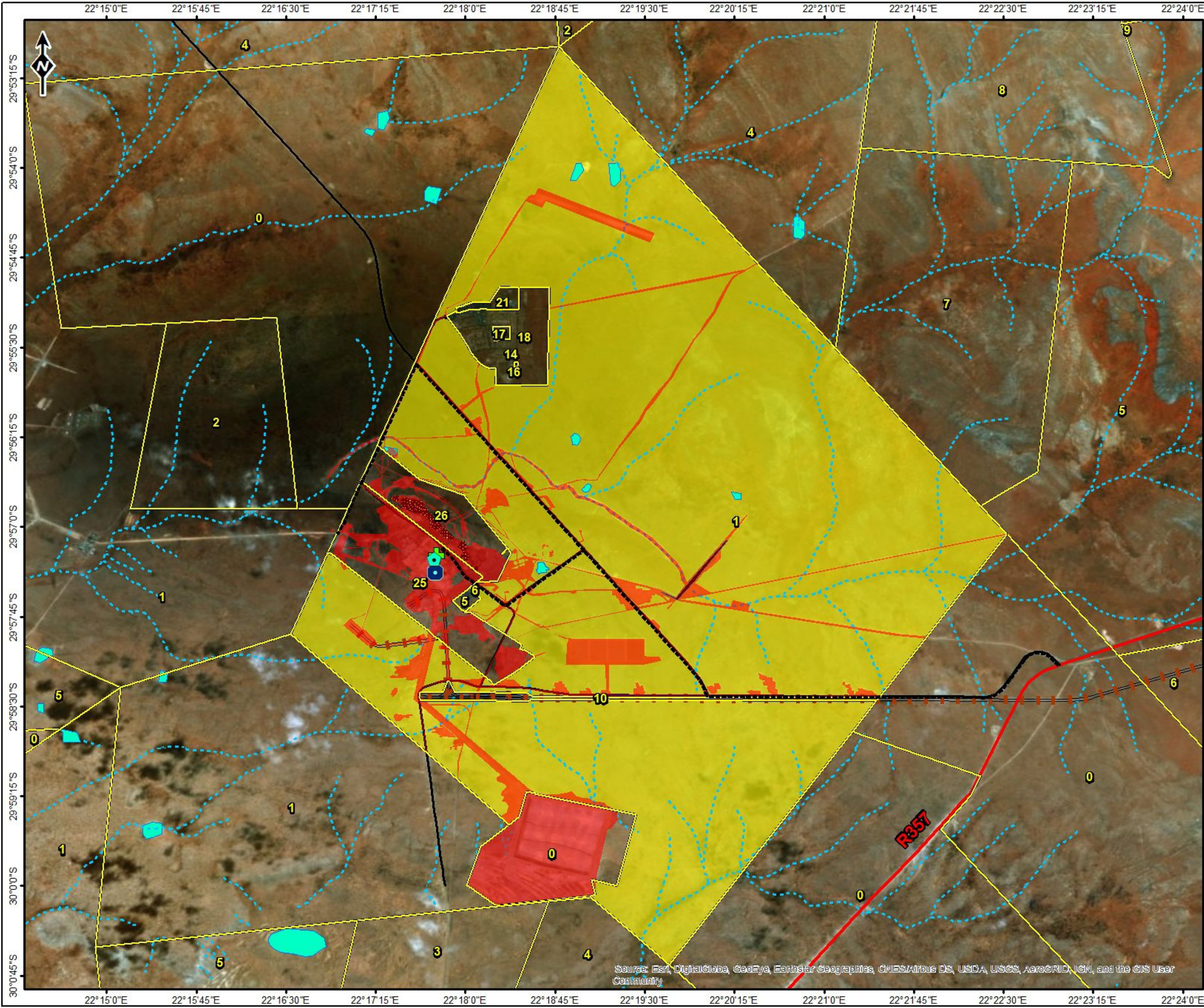
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Version **Final**

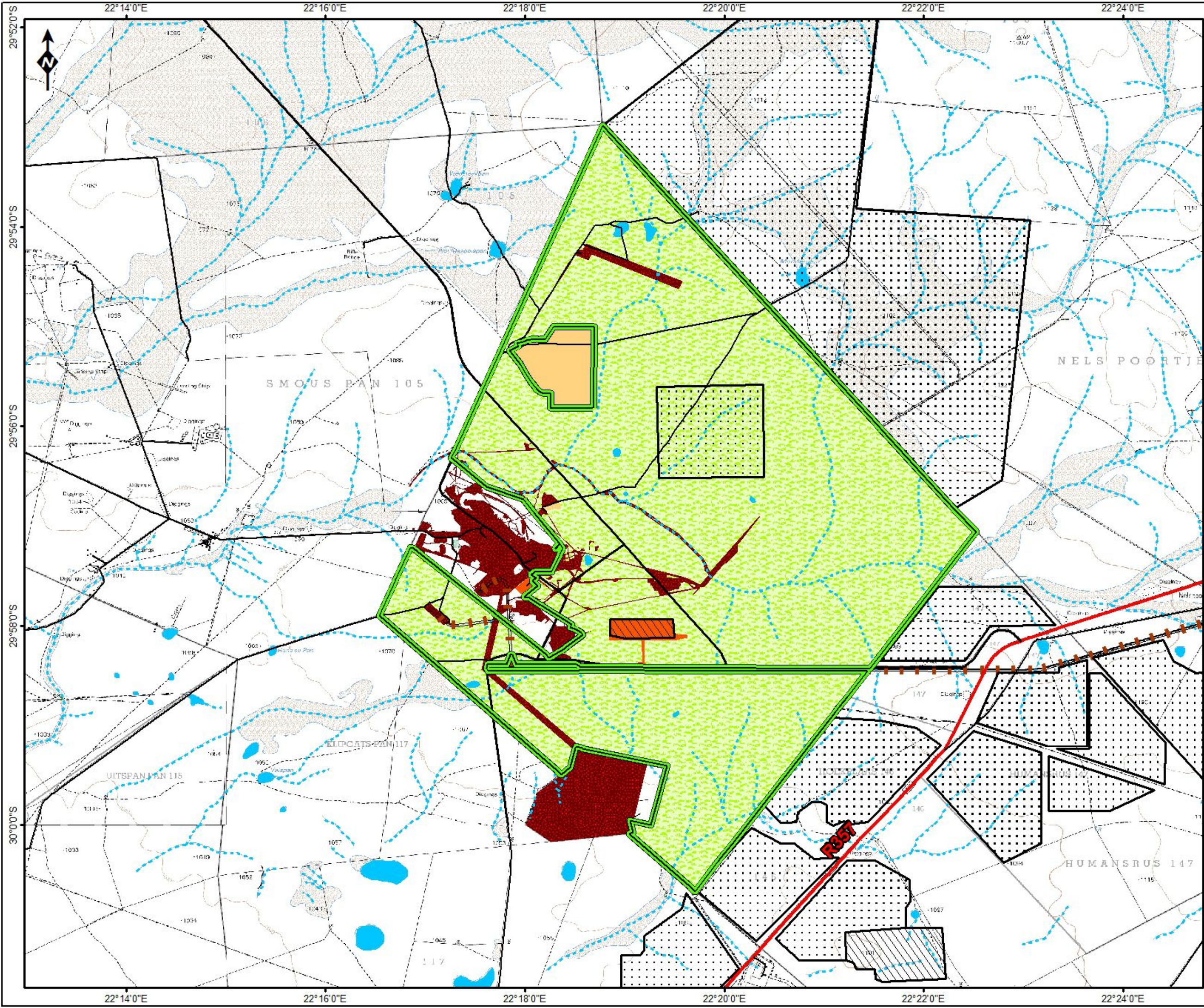
Date: 2018/08/28













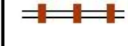



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



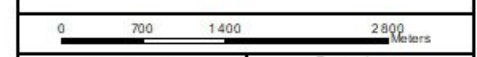
MAP 13: CURRENT LANDUSES



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

LANDUSE



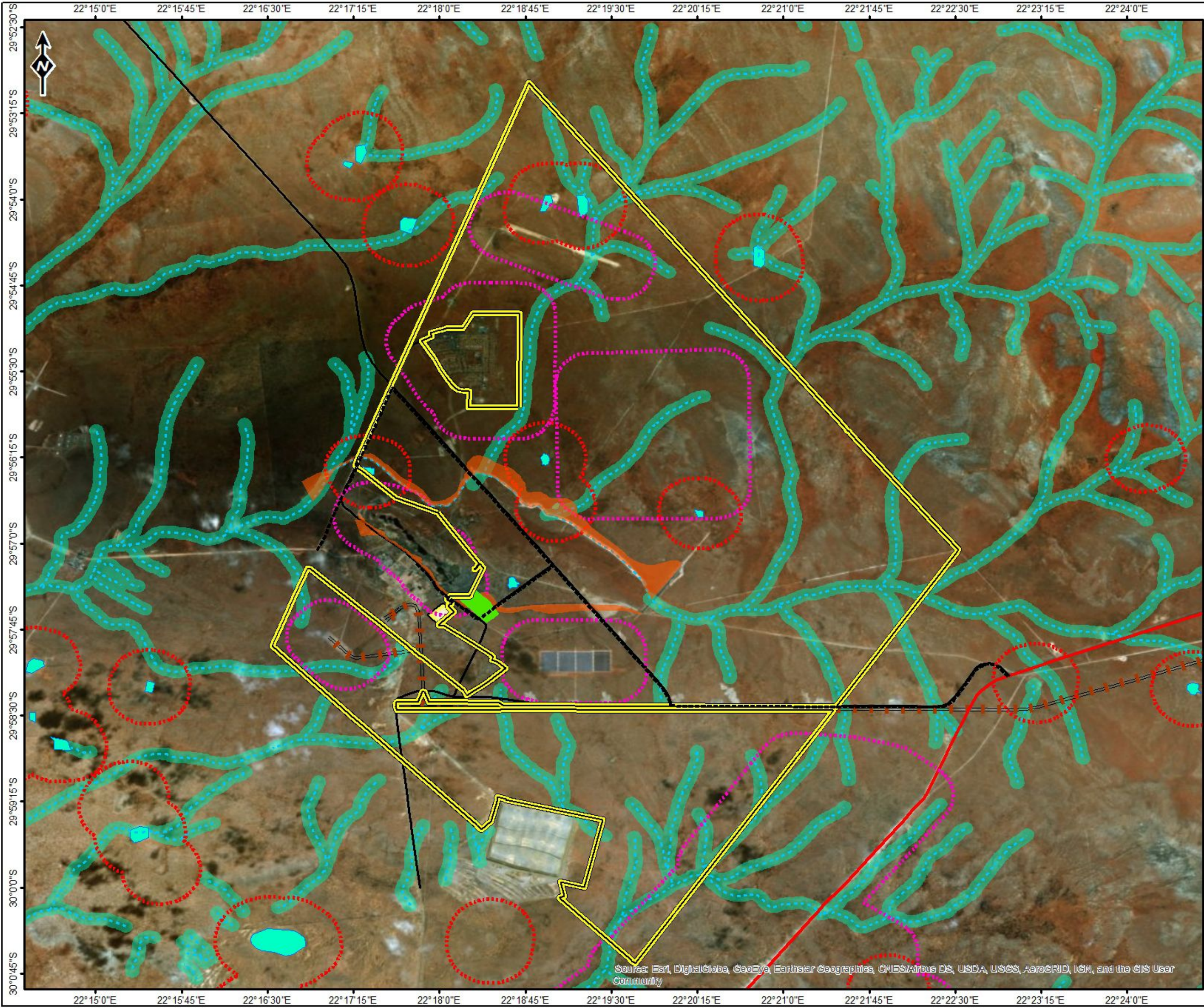
Reviewed: P. Furniss Environmental Scientist	Drawn by: NH Cele GIS Specialist
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Coordinate System: GCS WGS 1984
Datum: WGS 1984

	Scale: 1:65 000
	Version Final
	Date: 2018/08/29



MAP 14: ENVIRONMENTAL SENSITIVITY PLAN

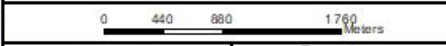


**Prieska Zinc Copper Project
(Vardocube Section)**

Legend

- Orebody Model
- 500m Buffer
- 500m C&I Buffer
- PROPOSED VARDOCUBE MRA**
- Vardocube
- ROAD NETWORK**
- Main Road
- Secondary Road
- Railway line
- 100m GN704 Buffer
- Wetlands
- 1:100 Year Floodline

Sensitivity Map



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

Coordinate System: GCS WGS 1984
Datum: WGS 1984

<p>ABS Africa Sustainability Advisors</p>	Scale: 1:56 513
	Version Final
	Date: 2018/08/28



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

APPENDIX 4: RECORD OF REGISTERED LAND CLAIMS



OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: NORTHERN CAPE

Hyesco Arcade, 4-8 Old Main Road, Kimberley, 8300 | PO Box 2458, Kimberley, 8300

Tel: (053) 807 5700 | Fax: (053) 831 6501

Enquiries: Nqabisa Mkalipi

Applicant: **ABS AFRICA**

1. **LAND CLAIMS ENQUIRY: FARM VOGELSTRUIS-BULT 104 PORTION 1, PROVINCE NORTHERN CAPE**
2. **FARM VOGELSTRUIS-BULT 104 PORTION 25, PROVINCE NORTHERN CAPE**
3. **FARM VOGELSTRUIS-BULT 104 PORTION 26, PROVINCE NORTHERN CAPE**
4. **FARM SLIMS DAM 154 PORTION 0, PROVINCE NORTHERN CAPE**

We refer to your letter dated: 29 November 2017

We confirm that as at the date of this letter no land claims appear on our database in respect of the Property. This includes the database for claims lodged by 31 December 1998; and those lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act, 2014. Whilst the Commission takes reasonable care to ensure the accuracy of the information it provides, there are various factors that are beyond the Commission's control, particularly relating to claims that have lodged but not yet been gazetted such as:

1. Some Claimants referred to properties they claim dispossession of rights in land against using historical property descriptions which may not match the current property description; and
2. Some Claimants provided the geographic descriptions of the land they claim without mentioning the particular actual property description they claim dispossession of rights in land against.

The Commission therefore does not accept any liability whatsoever if through the process of further investigation of claims it is found that there is in fact a land claim in respect of the above property.

If you are aware of any change in the description of the above property after 19 June 1913 kindly supply us with such description so as to enable us to do a further search.

Yours faithfully

COMMUNICATION DIVISION

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: NORTHERN CAPE

NQABISA MKALIPI

DATE: 29/11/2017