

CERTIFICATE OF ACCREDITATION

In terms of section 22(2) (b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-

SGS SOUTH AFRICA (PTY) LTD
BOOYSENS
Co. reg no: 1949/032643/07

Facility Accreditation Number: **T0169**

is a South African National Accreditation System accredited Testing laboratory
provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying schedule of accreditation,
Annexure "A", bearing the above accreditation number for

CHEMICAL ANALYSIS

The facility is accredited in accordance with the recognised International Standard

ISO/IEC 17025:2005

*The accreditation demonstrates technical competency for a defined scope and the operation of a
laboratory quality management system*

While this certificate remains valid, the Accredited Facility named above is authorised to
use the relevant SANAS accreditation symbol to issue facility reports and/or certificates

Mr R Josias
Acting Chief Executive Officer

Effective Date: 01 December 2007
Certificate Expires: 30 November 2012

ANNEXURE A

SCHEDULE OF ACCREDITATION

Testing Laboratory Number: T0169

<p>Permanent Address of Laboratory: SGS South Africa (Pty) Ltd 58 Melville Street Booysens Johannesburg</p>		<p>Technical Signatories</p>	<p>CHEMISTRY : Mr D Govender (Method 1, 2 & 3) : Ms N McKenzie (Method 7 & 25) : Mr J Ragusi (Methods 1 to 7 & 24) : Mr NE Dhladhla (Method 1-Gravimetric part only, 2, 3 & 24-FAS only) : Mr V Tlhowe (Methods 1-AAS only & 6) : Mr JN Baloyi (Methods 2, 3 & 8-ICP-OES only) : Mr M Stone (Methods 4, 5, 6, 8 & 23) : Mrs P Sikhosana (Methods 4, 5 & 23) : Mr RD Bryington (Methods 4, 5 & 23) : Ms J Lazarevic (Method 8-ICP-OES only) : Ms B Ndlovu (Method 8-ICP-MS only) : Ms NS Baloyi (Method 7) : Ms W Ndungane (Method 25)</p>
<p>Postal Address: P O Box 82582 Southdale 2135</p>		<p>Management Signatory : Ms C Borman</p>	
<p>Tel : (011) 681-2500 Fax : (011) 681-2611 E-mail : toinette.viljoen@sgs.com : clara.borman@sgs.com</p>		<p>Nominated Representative : Mrs T Viljoen</p>	
		<p>Issue No. : 14 Date of issue : 16 March 2010 Expiry date : 30 November 2012</p>	
Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used	
CHEMISTRY – MINERALS & ORES			
Carbon, Ores, Rocks, Soils & Metallurgical Products	Determination of Au by Lead Fusion followed by Atomic Absorption Analysis or Gravimetry	1. ME-ZA- [MINANA]-[BYZ(FAS)]AN-001	
Ores, Rocks, Soils & Metallurgical Products	Determination of Au, Pt and Pd by Lead Fusion and ICP-OES	2. ME-ZA-[MINANA]-[BYZ(FAS)]AN-002	
	Determination of Pt, Pd, Rh, Ru and Ir by Nickel Sulfide Fusion followed by ICP-OES	3. ME-ZA-[MINANA]-[BYZ(FAS)]AN-003	
Metallurgical Products (oxides) Rocks Soils Ore grade material (Iron ore, chrome ore, Manganese ores Tantalite, Heavy mineral sands)	Determination of Major Element Oxides by Borate Fusion (XRF)	4. ME-ZA-[MINANA]-[BYZ(XRF)]AN-001	
Metallurgical Products Rocks Soils Base metal ores	Determination of Base Metals by Potassium Pyrosulfate Fusion (XRF)	5. ME-ZA-[MINANA]-[BYZ(XRF)]AN-002	

Field Manager

ANNEXURE A

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Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used
CHEMISTRY – MINERALS & ORES		
Ores Rocks Soils Metallurgical products	Analysis of Acid Soluble Cu and Ni by Acid Digestion and Analysis by Flame Atomic Absorption Spectrophotometry	6. ME-ZA-[MINANA]-[BYZ(AAS)]AN-001
Metallurgical Products Rocks Soils Ores	Determination of Total Sulphur and Carbon by Combustion and Infrared Analysis (LECO)	7. ME-ZA-[MINANA]-[BYZ(LEC)]AN-001
Metallurgical products Rocks Soils Ores	Determination of Uranium oxide by pressed powder analysis using an XRF-spectrometer	23. ME-ZA-[MINANA]-[BYZ(XRF)]AN-003
Ores Rocks Metallurgical products	Determination of Rhodium by Palladium Collection followed by ICP-OES	24. ME-ZA-[MINANA]-[BYZ(FAS)]AN-005
Waters: Drinking water, surfaces & ground water, Filtrates of leach test	Determination of dissolved & total metals by: ICP-OES (Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Si, Sn, Sr, Ti, U, V, Zn) And ICP-MS (Ag, As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, Sb, Se, Sn, Sr, Th, Ti, U, V, Zn)	8. ME-ZA-[MINANA]-[BYZ(ICM)]AN-001
Drinking water, surface, ground & process water Filtrates of leach tests	Determination of Chloride analysis by Potentiometric Titration	25. ME-ZA-[MINANA]-[BYZ(WET)]AN-001

Original date of accreditation: 01 December 2002

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ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

Field Manager