



## **IUMA MARTINEZ**

Iuma is a South African citizen and has a B.Sc. (Hons) degree in Exploration Geology, an M.Sc in Geochemistry plus a PhD in Civil Engineering and GIS from the University of Cape Town. She is a professional member of the South African Council for Natural Scientific Professions which is a statutory body that monitors the ethical behaviour of its members. Membership of this body is recognized internationally for purposes of competent persons reports used in public listing documents.

Iuma has worked as a GIS specialist for over 16 years in various capacities and for a wide range of applications such as:

- Image processing
- GIS support for diamond and base metal exploration projects
- Determination regional relationships between geological datasets in Botswana and Namibia

As a GIS and Spatial Analyst specialist, Iuma has mostly been involved in diamond exploration and has consulted on projects in most of the Central and Southern African countries, Brazil, Australia and Indonesia.

Qualifications: B.Sc. (Hons) Geology, M.Sc. Geochemistry, Ph.D. Civil Engineering / Geographic Information Systems, University of Cape Town (UCT), South Africa; Pr.Sci.Nat.

Languages: English, Portuguese, Afrikaans

Courses: Introduction to programming ArcObjects with VBA (GIMS / ESRI, Cape Town, 29 May - 2June 2006); Course: Landmark Forum (Landmark Education, Cape Town, February 2006)

### **Employment History:**

2001-present: GIS Developer for: Tsodilo Resources (Pty) Ltd, VP3, CAMECO & GIS Specialist / Data processor for Fugro (FSAPL, FSBV, FSME); Liaison for AEON-Tsodilo Joint Research Projects (2007/8); Honorary Research Associate (Department of Civil Engineering, UCT:2000); GIS Consultant for Abbot Grobicki (Pty) Ltd, Cape Town, South Africa

1996-1999: Scientific Officer and Senior Scientific Officer, Urban GIS Research Unit  
Civil Engineering Dept, UCT

Software Experience:

GIS software: ENVI 4.2, ArcView 8.3, 9, 9.1 (ArcMap, ArcCatalog, Spatial Analyst),  
Gemlite, GeoMedia, MGE, MicroStation (SE/V8), MapInfo; Processing software: Starfix  
Processing modules (Surface, Swathedit, Dtm, Contour), Triton Helix (ISIS, Delphmap)  
StarfixEdit

Other: Adobe Photoshop, Microsoft Office, Coplot/stat, PhotoStudio

Familiar / minor use: MATLAB, PCI Geomatica (for lineament extraction)

Project Experience:

2008: Botswana GIS Greenfields Exploration study covering unlicensed prospecting  
areas in central, southern and eastern Botswana- phase 1 for: CAMECO

2008: Application of VTEM survey, Ternary Magnetic Anomaly and Gravity Bouger  
Anomaly and other data sets for base metal exploration in NW Ngamiland (internal  
reports for Tsodilo Resources Pty Ltd) Botswana

2008: Contouring and plots for stream sediment survey report: Independent Technical  
Review of Alluvia Diamond Mining blocks Mandala River Project, Guinea, West Africa for  
Stellar Diamonds (P.Walker & I.Martinez)

2008: Various GIS generated diagrams for Orapa / Jwaneng related projects (VP3)

2008: Thematic mapping of geochemical data based on loam, rock, pit soil and other  
sampling surveys for Togo (VP3)

2008: Hillshading and processing of DTM and Shuttle Radar Topography Mission  
(SRTM) imagery for base metal exploration in NW Ngamiland (AEON / Tsodilo  
Resources)

2008: Collaboration with Impact Crater Research Group involving high resolution edge  
detection image processing methods for meteorite crater detection (Tsodilo Resources/  
University of Witwatersrand)

2008: Initiate GIS for Kimberlite Exploration in Tanzania (Indian Ocean Diamonds/VP3)

2008: GIS initiated for Kimberlite Exploration in Guinea (Stellar Diamonds/VP3)

2007/2008: Joint AEON-TSODILO Resources Research Project: Research on I: the  
location of the Matchless Amphibolite Belt in NW Ngamiland (BOTSWANA) & II: Craton  
issues associated with diamondiferous kimberlite potential of NW Ngamiland  
(BOTSWANA) (AEON: Africa Earth Observatory Network, University of Cape Town, SA)

2007/2008: Southern Angola LANDSAT 7 ETM+ Studies- Mineral ratio calculations and  
structural / geological interpretations for the Moxico Concessions (for: CAMECO / VP3)

2007: Evaluation of PCI Geomatica software for lineament extraction and edge  
definition based on Landsat ETM imagery

2007: Desktop studies for base metal exploration in NW Ngamiland (Botswana) (For:  
Tsodilo Resources (Pty) Ltd)

- A coarse multi-variate analysis of aeromagnetics, iron-oxide Landsat image ratios,  
soil anomaly, lithology, tectonostratigraphic information to define potential base  
metal PL boundaries and target zones in NW Ngamiland (Botswana).
- Identifying broad regional relationships between the geological datasets for  
Botswana and Namibia, with an emphasis on the lithologies associated with base  
metal occurrences and a variety of other geological variables.
- A brief synopsis of some of the major characteristics of some key Cu-Ni Base metal  
sulphide deposits. These characteristics are then used to analyse the regional  
Botswana geological data with respect to the potential for similar base metal  
deposits in the area.

- An examination of geochemical and geophysical variations in the Kihabe area and the application of these observations to constrain areas of possible economic interest on a regional scale. Amongst the data types compared are: aeromagnetics, geology, soil geochemistry (Pb, Zn, Cu, Ag, Ni, Cr and Mg), degree of exposure and detailed geophysics data interpretations (eg lineaments).
- A comparison of selected existing drill log descriptions and ICP data for NW Ngamiland with previous studies on the MAB Namibia.

2007: GIS support for other diamond and base metal exploration projects based in: Guinea, SA, Tanzania, Namibia, Madagascar (for: VP3).

2006: Evaluation of Hyperion, ALI, EO-1 Sat and ASTER (VNIR, SWIR and TIR) satellite data for kimberlite exploration in Botswana (current); A GIS Study of Satellite Imagery, Aeromagnetic Gradient, Fault and Lithological Boundary Proximity in the Newdico and Gcwihaba Resources Prospecting License Areas;

2005: Contouring of geochemical /geophysical data (Spatial Analyst); database development; plots for PL approvals/ Quarterly Reports - Tsodilo Resources (Botswana)

2005: Profile generation and CAD support for Falcon Cable Route Project - FSME, UAE / Middle East; 2005: Multi-beam data processing support to NGT, Zeepipe, Europepipe projects (Starfix: Surface, Swathedit, Dtm, contour) (FSBV); 2005: GIS database for Kimberlite pipe exploration, Tsodilo Resources Ltd. ( Botswana ) (Av.9);

2004: GIS database for West Africa - Fugro Opcos in: Holland, UK, US, SA ; Charting - Songo Songo, Tanzania ; 2003: Side Scan Imagery processing & charting - Songo Songo, Tanzania; Pilot GIS database for North Sea Dutch Sector: Gemlite evaluation; Inter-Opcos data transfer format evaluation - FSBV, Holland;

2002: StarfixEdit processing for ROV survey - Lowestoft, Scotland; Processing for SSS Survey - Mosselbay, SA; SSS image processing for Namdeb (ISIS); StarfixEdit processing & charting - Djambala, Congo; GIS Pilot database for offshore Angola - FSBV;

2001: Annual Update of Mossgas Pipeline GIS and Mossgas FA Platform GIS with 2000 inspection data;

2000: Cape Metropolitan Council Catchment Management GIS project;

1996-2000: Developed GIS databases for implementation for informal settlement upgrading, Cape Town; 1996-1998: GIS for Integrated Catchment Management of the Lotus River Catchment Area; 1996: Collation, documentation and analysis of GIS-Based Visual Settlement Planning (ViSP), Belo Horizonte, Brazil;

1994: Maurice Ewing Research Vessel Cruise from Rhode Island University. Monitoring geophysical computer equipment and geochemical sampling

1993: Stable isotope analysis of silicate minerals / gabbro ridge samples from the Okenyenya igneous complex, UCT; 1992: Electron microprobing of chromites; X-Ray Fluorescence (XRF) Analysis

Further information can be viewed at: <http://www.giscapetown.com/cv.html>

Or by contacting: [uma@giscapetown.com](mailto:uma@giscapetown.com) or 072 43 45 308 (office hours)