

**GeoGlobal**  
Expertise. Experience. Excellence.

**Abani R. Samal, PhD**  
CPG, RM-SME, Fellow-SEG  
**Principal**

## Our Experts



*Dr. Abani R. Samal is the Principal & discipline lead in the geology, resource estimation and geostatistics. He is well recognized for his expertise in mineral deposit evaluation, resource estimation and advanced geostatistical analyses. He has extensive training (MS and PhD) in economic geology and geostatistics.*

Dr Samal is in industry since 1996. He has experience in various commodities including iron ore, complex sulphide deposits such as Cu-Mo-Au-Ag, Pb-Zn-Ag, gold-silver and industrial minerals around the world. The exploration and mining projects where Dr Samal has worked on include Southern System iron ore deposits (Brazil), Las Truchas iron ore deposits (Mexico), Brisas gold project (Venezuela), Black-Fox (Canada), Resolution copper (USA), Kisanfu copper deposit (DRC), Bingham Canyon Mine (USA), Oyu Tolgoi (Mongolia), Boron (USA), Diavik diamond deposit (Canada), beach sand (rutile) deposits (India, Africa) and Onça-Puma lateritic nickel deposits in Brazil. He has provided various training programs to the mining industry professionals.

Dr. Samal is a registered member of SME (RM-SME), a certified professional geologist (CPG) and a Fellow of the Society for Economic Geologists (SEG). Dr Samal is a qualified person as per international resource reserve reporting standards such as JORC and NI-43-101. Dr. Samal's contributions to the industry are well recognized through his publications and presentations at various national and international conferences. He is respected as a leader in mining industry.

*Our principal associates have 15 or more years of industry experience in various disciplines such as geology, mining engineering, mineral processing, metallurgy, hydro geology & environmental sciences worldwide.*

*We offer*

GeoGlobal

- **Independent reviews and audits:** We take pride in our independence and unbiased approach in audits and reviews with a goal to provide the right information to our business partners. Our reports provides applicable recommendations for improvements.
- **Resource estimation:** We follow detailed exploratory data analyses (EDA) block modelling and resource classification to comply with major reporting standards (NI 43-101, JORC, SAMREC) and corporate guidelines
- **Advanced geostatistics:** Improve the quality of resource estimation through use of appropriate techniques such as conditional simulation, multipoint simulation and other non-linear techniques. Provide assistance in assessment of risk in estimated resources and also estimation of recoverable resource estimation
- **Mineral Exploration:** Strategic advice for exploration targeting and project development.
- **Technical studies:** Support for technical studies from scoping through to feasibility
- **Reconciliation:** Grade control and mine to mill reconciliation
- **Training and mentoring:** Standard and customized training in basic to high-level resource estimation, geostatistics. We assist in preparation of standard operating procedures (SoP) for resource estimation, reconciliation procedures etc.

*Dr Abani R. Samal leads the geology, resource estimation disciplines. We collaborate with very experienced experts (each with 15 or more years of industry experience) in mining engineering, mineral processing, metallurgy, hydro geology & environmental sciences worldwide to deliver the most suitable team for the project.*

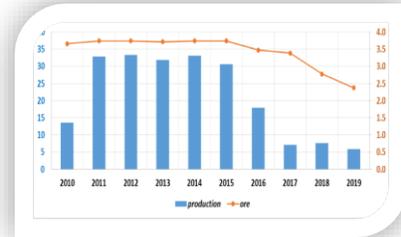
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## Recent Projects

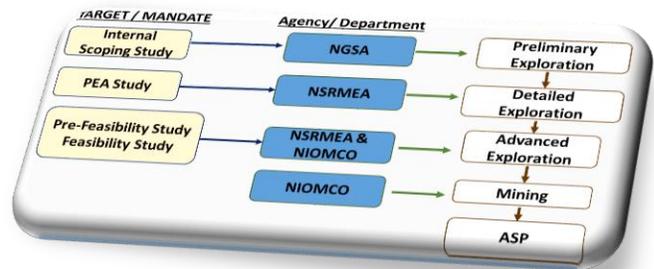
### 1. Post Corporate Investment Review of the performance of a major Uranium mining operation in Namibia (confidential client)

- Technical investigation of yearly production (grade, tonnage and metal) for last 10 years with special emphasis on ore quality and knowledge of the controls of mineralization

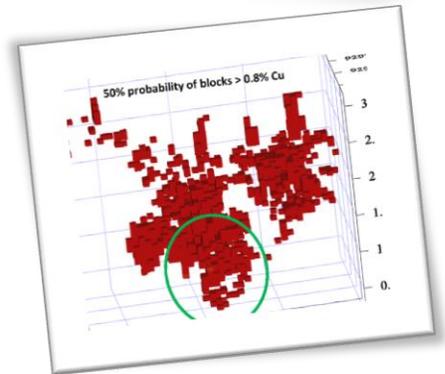


### 2. Development of mineral resources for strategic development of the steel industry in Nigeria – World Bank & Federal Govt. of Nigeria

Identification of opportunities for potential development of iron ore in Nigeria and development of high level exploration strategy.

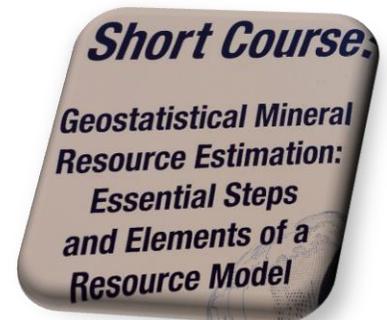


### 3. Advanced Geostatistical application for identifying exploration targets for a copper project in Peru (Confidential client) :



### 4. Training and mentoring: Training programs provided in USA and India.

- Topics:** Resource estimation  
 Geostatistics  
 Resource reporting /  
 Technical Report writing  
 Other customized training programs



## Why Us

GeoGlobal

*At **GeoGlobal** our clients are our business partners. We collaborate with them to achieve greater success. We believe adding value by providing solutions (not just a project). We also believe in empowering our partners in for better implementation / application of our solutions by mentoring them.*

**Timely delivery:** As a principle, we focus on our assignments and work with business partners and maintain continuous dialogue with them in order to make sure that our business partners receive results / reports on time. We will provide support to our business partners in making sure that our solutions are used properly in order to maximize our partners' return on investment.

**Quality:** We strongly believe in quality of our products. We maintain communication with business partners during and after the assignment. Our results are backed by rigorous analyses. We stand by our partners and our products.

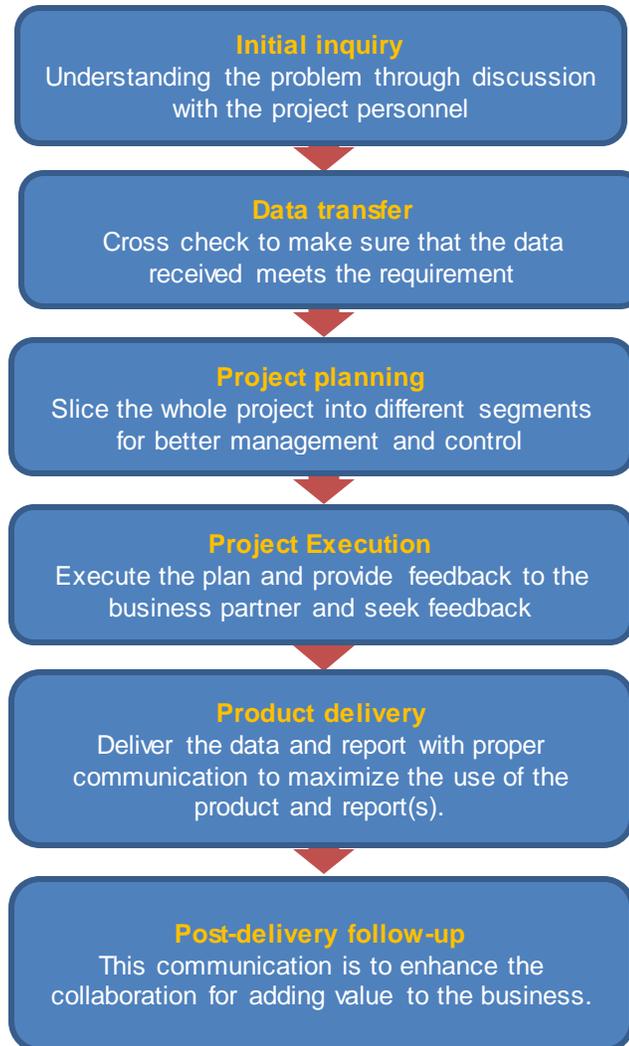
**Cost effective:** The advantages of being an expert and a small company, we keep our overhead costs at minimum. Therefore there is no additional charge beyond actual cost of the assignment.

**Practical:** Our solutions are practical and leads to add value. That's why we take time to work with our business partners and understand the problem before diving into data analyses.

**Latest and most reliable technology:** We use only industry's best recognized technologies, which saves a lot of time and adds confidence to the results.

## Our engagement model

We believe ‘people’ make differences. Therefore we connect with the project personnel through a dialogue at the very beginning that lasts through the project and beyond. Below is a visual presentation of our engagement model.



We make sure that the business partner receives that right advice and services without any compromise on quality.

## References

*I have worked with Dr. Abani Samal on many worldwide projects and have found him to be a very thorough professional. His work is of the highest standards and I have no hesitation in recommending him to future clientele.*

**Ernie Bohnet, P.E., P. Eng.**

*Director of Mine Planning and Resource Governance for Freeport-McMoRan Inc. (Retired)*

*Dr. Abani Samal and I worked together at Rio Tinto in Salt Lake City and I have always found him to be an excellent person to work with. He is a leading geostatistician and has a strong skill set in resource estimation, technical evaluation and project studies. But just as important as his many technical skills, he has an exceptional work ethic and an ability to easily perceive and understand the viewpoints of co-workers, clients and business partners. This ability to understand other viewpoints, along with a strong drive to find solutions to problems, provides for a great working relationship. Abani is disciplined and focused, with a passion for his work that is rare and it is always a pleasure to work with him. He is a colleague, a friend and an outstanding member of the mining industry.*

**Richard J. Yancey**

*Manager of Geological Services, Escobal Mine, Guatemala, Minera San Rafael, S.A.*

*I have worked with Abani in various technical assurance projects; where he acted as the lead reviewer / auditor for geology and mineral resources portion of the project. He has demonstrated high degree of competency, integrity and independence.*

**Jay Bastian**

*General Manager, Technical Assurance, a major mining company in the world*

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*Dr Abani worked with us as a leading geostatistical consultant (with PAH) and as a lead reviewer / auditor for geology and mineral resources. He was especially responsible to review resource estimation and classification procedures to cater a contract of purchase and sale of mineral rights of five iron ore mines (Usiminas / JMendes). His expertise, ethics and integrity profile associated to the quality and high competency of his work were critical and important factors which enabled technical and economic parameters (in regards to the economic evaluation and valuation of the deposits) for the purchase of the mentioned mines. I highly recommend Abani because his work was of the highest standards and was a pleasure to work with him.*

**Victor Suckau**

*Sr. Executive / management member of VALE and USIMINAS (Retired)*

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*Dr Abani Samal is intelligent and hard working.*

**Terry Laverty, P.E., R.M. SME**

*Former colleague at Pincock, Allen & Holt; former General Production and Maintenance Superintendent Exxon Coal and Minerals Company*

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*Dr. Abani is a world-class geostatistician with a significant understanding of the application of spatial statistics to the estimation of mineralogical attributes important to mineral evaluations. He has a diverse educational background and has published multiple papers in his area of his expertise, as well as consulted, and applied his expertise on multiple international mineral deposit evaluations. He has high ethical standards and is very cognizant of the quality of his work and the critical nature of it in regards to the economic evaluation and valuation of mineral deposit.*

**Jeff D.**

*Senior Engineering and Business Professional, Denver, Colorado*

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*I worked with Abani Samal for approximately 3 years and found his knowledge of all things related to geostatistics invaluable to our dealing with clientele requests for technical assessments of their properties and mines.*

**Gordon Sobering, PE**

*Principal Mining Engineer at Gustavson Associates, LLC*

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*I worked with Abani on various projects. I know him as a strong team player, a likable person. He treats colleagues well and respects every one. He is technically strong. I wish him great success in his future endeavours.*

**Pramod Sarangi**

*Technical Manager - Mining Solutions at EDS Technologies, India*

# *A list of Corporate Clients*

## Ongoing clients\*

<b>Cardno#</b> Various commodities	<b>Doe Run</b> Zinc-Lead
<b>Key Capital</b> Copper, Coal, Gold etc	<b>RioTinto PLC</b> Iron Ore, Copper
<b>RPM Global#</b> Various commodities	

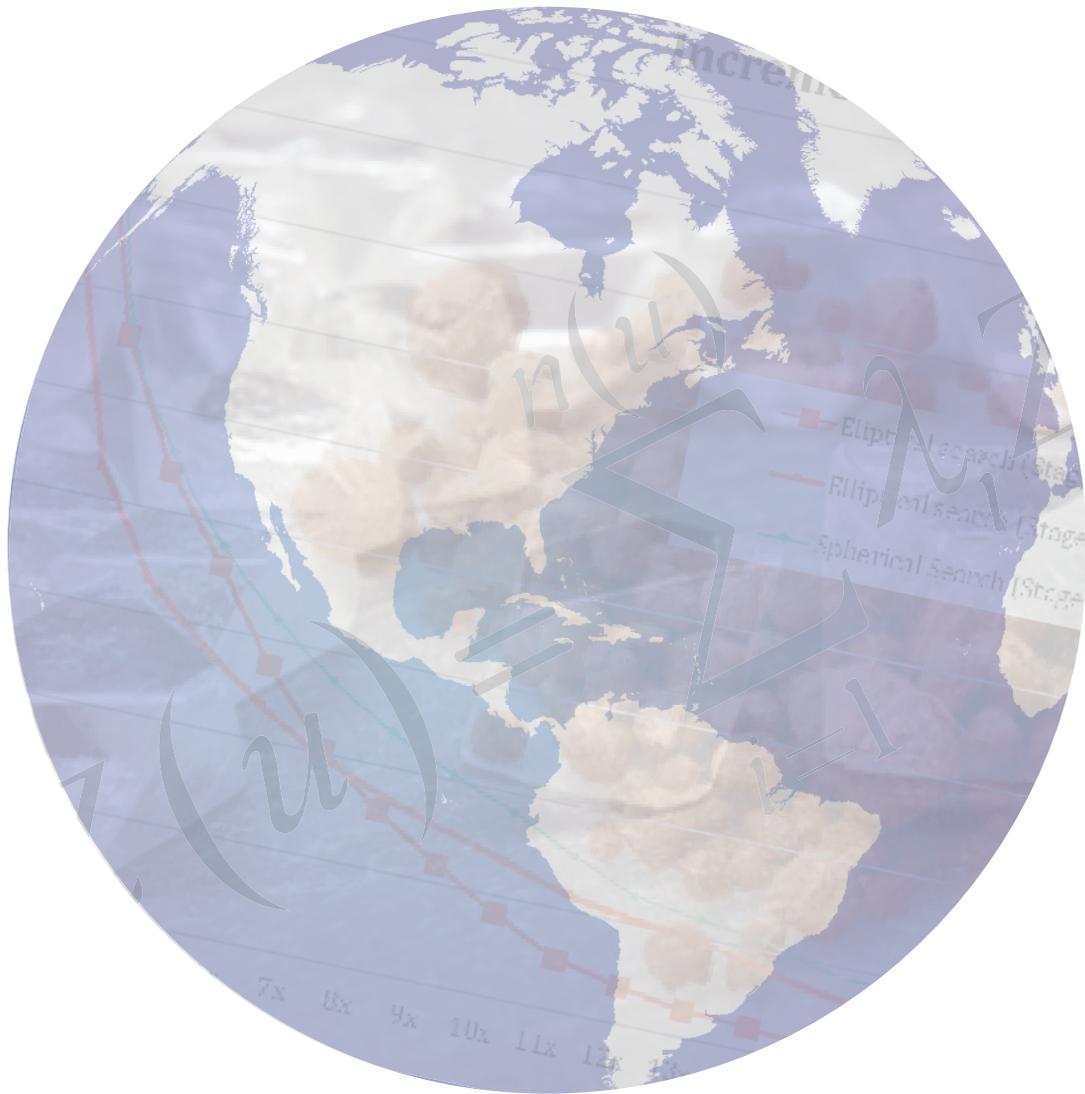
## Former Clients\*\*

<b>Adularya</b> Coal	<b>Gryphon Gold</b> Gold	<b>Sierra Mojada (now Silverbull Resources)</b> Silver-Zn-Pb
<b>Anglo American</b> Copper	<b>INCO</b> Lateritic nickel	<b>South American Silver</b> Silver
<b>Arcelor Mittal</b> Iron Ore	<b>KGHM</b> Copper	<b>Sumitomo, USA</b> Copper and other commodities
<b>Areva</b> Uranium	<b>KINROSS</b> Gold	<b>TATA Titania</b> Beach Sand (Titanium)
<b>Barclays Bank</b> Gold, Copper	<b>Lisbon Valley</b> Copper	<b>Turnigan Energy</b> Uranium
<b>Barrick</b> Gold	<b>Newmont</b> Gold	<b>Usiminas</b> Iron Ore
<b>Brazaro resources</b> Gold	<b>Resource Capital Fund</b> Gold	<b>Vale</b> Iron Ore, Copper, Bauxite (MRM), Nickel
<b>Cupric Canyon</b> Copper	<b>Rio Tinto PLC</b> Iron Ore, Copper, Titanium, Borax, Diamond	<b>Various legal and financial institutions (confidential)</b>
<b>Doe Run</b> Lead Zinc	<b>Royal Gold</b> Gold	<b>WestLB</b> Iron Ore and other commodities
<b>Freeport MacMoRan</b> Copper (Gold)	<b>Saraf Agency (via MDL minerals)</b> Beach Sand (Titanium)	

# Associateship agreement and have access to experts from various disciplines.

\*Currently few other major mining companies in negotiation for services

\*\* As an employee or, an independent expert



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