



**EARTH SCIENCES SOLUTIONS**

Today's Projects for a Greener Tomorrow

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## **BUSINESS PROFILE**

AS OF 2021



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## **VISION STATEMENT**

To deliver projects for our clients that seeks to promote a sustainable development for a greener tomorrow.

## **MISSION STATEMENT**

To become a leading local and regional provider of Innovative and Cost-Effective Environmental and Geo-sciences solutions, through a multi-disciplinary approach.

## **VALUES**

Integrity, Sustainability, Innovative and Affordability

## **ABOUT TSIKO**

Tsiko Earth Sciences Solutions is a multi-disciplined employee owned environmental and Geo-Sciences consulting entity that provides a broad range of services to government and private clients. We are a level B-BBEE LEVEL 1 entity that is youth owned and seek to empower youth by aiming to employ young graduates. TESS (Tsiko Earth Sciences Solutions) employs innovative and cost-effective solutions to better suits our client's needs and budget. At TESS we have professional staff that offers expertise in comprehensive project delivery while employing current scientific developments and standard operating procedures. We have the in-depth experience necessary to provide fast, cost-effective solutions to environmental, engineering and mining projects.

## **MULTI-DISCIPLINARY ENTITY**

TSIKO recognizes that the ability to develop and implement solutions to complex environmental, engineering and mining problems requires the collaboration of specialists. As such we have assembled a mix of experienced professionals and graduates with experience and expertise in various disciplines necessary to address the specific challenges. Our team is made up of professional geologists, hydrogeologists, biologists, environmental scientists, and environmental engineers. We also have associate's professionals, whom we are able bring on board on a contractual basis for specific projects as necessary.

## OUR SERVICES

### • GEOTECHNICAL INVESTIGATION

Tsiko is well positioned to offers geotechnical investigations in order to give the client an idea the geotechnical conditions of their site for both lightly loaded structures to heavily loaded structures.

Services offered includes the following:

- Geotechnical Investigations for Foundation Designs.
- Geotechnical Investigations for Township Development and Rezoning.
- Reconnaissance Investigations and Preliminary Investigations.
- Dolomite Stability Investigations
- Dolomite Risk Management Plan
- Detailed Geotechnical Risk Assessments for Property Development

### • FLOODLINE DELINEATION

Flood-line determination is a vital part of development planning for all sorts of potential developments. This is a legislated requirement for commercial, housing and mining developments, no development should occur within areas that are potentially prone to becoming flooded. Section 144 of the South African National Water Act (Act 36 of 1998) and General Notice 704 of the South African National Water Act (Act 36 of 1998) form the legal framework for flood-line and flood risk assessment. At Tsiko we have the expertise to help the clients navigate these requirements.

Services offered includes the following:

- 100-year and 50-year flood-line report

## • ENVIRONMENTAL IMPACT ASSESMENT AND COMPLIANCE

Tsiko make use of innovative technologies such as GIS and Remote sensing to streamline and optimize Environmental Impact Assessment (EIA) process to help our clients meets their regulatory requirements while meeting international sustainability and environmental standards. Most of our team understands the communities whereby most clients seek to operate and such we are able to engage with regulators and community stakeholders more effectively which enables us to secure timely approvals from the relevant authority.

Our services involve identifying environmental impacts that a particular project might have and advise the client on mitigation measures. We also recognize the social impacts and participate in community meeting where independently facilitate the views of the affected community. Whilst development is of great need in the growing South Africa, it is however imperative that both growth and development are sustainable both socially and economically. The social part of it includes environmental sustainability.

The above services are included when compiling the environmental Basic Assessment, Scoping/ Environmental Impact Assessments (EIAs) and Public Participation Processes.

These are undertaken in terms of :Government Notices 544, 545 and 546 (Listing Notices 1, 2 & 3) of the EIA Regulations, August 2010, under the National Environmental Management Act (Act No. 107 of 1998) ("NEMA"), as amended; Government Notice No. 718 (Category A & B) of the Waste Management Activities, July 2009, under the National Environmental Management: Waste Act (Act No. 59 of 2008) ("NEM: WA");

We also offer other supporting services to enable our clients to secure timely approval from the competent authority and achieve regulatory compliance. This includes but not limited to the following services:

- Environmental Management Programs
- Environmental Compliance Monitoring (ECO)
- Appeals
- Public Participation Coordination

- Environmental Screenings and Environmental Feasibility Assessments
  - Government/Proponent Liaison
  - Environmental authorization audits
  - Water registration applications and audits
  - Air quality permit applications and audits
  - Waste license applications and audits
  - Specialist ISO 14001 audits pertaining to groundwater impacts
  - Environmental Impact Assessment (EIA) focusing on hydro geological aspects
  - Environmental Management Programme Report (EMPR)
  - Costing and project management of site clean ups
- **HYDRO-CARBON CONTAMINATION SOLUTIONS AND REMEDIATION MANAGEMENT**

We provide a proactive, and cost-effective approach to contaminated sites to safely eliminate, reduce or transfer associated liabilities while ensuring compliance with relevant authority. We provide a range of contamination related solutions including the following:

- Bio-venting
- Monitoring natural attenuation
- Soil flushing
- Soil washing
- Land-farming (bio-treatment)
- Soil vapour extraction
- Vacuum enhanced recovery
- Granulated activated carbon
- Oxidation
- Multi-phase modelling
- Risk-Based Corrective Action (RBCA)
- Spill quantification
- Soil vapour surveys
- Rehabilitation and remediation
- Environmental management plans
- Costing and project management of site clean ups.

## • GEOLOGICAL, MINING AND HYDROGEOLOGICAL SERVICES

We are positioned to offer a wide range of supporting services to the mining industry. Mining industry is in nature a multi-disciplinary industry, something that we here at Tsiko pride ourselves with having a multi-disciplined team with experience in Mining geology, exploration geology, environmental geology, hydrology, and geo-physics. As such we offer a wide range of services for clients in the mining industry such as but not limited to the following:

- Integrated Mine Water management, including Integrated Waste Water Management Plan (IWWMP) and Storm Water Management plan.
- Water Use License Application (WULA), including Integrated Water Use License Application (IWULA)
- Geo-hydrological Investigations and Impact Studies, including Groundwater Flow and Transport Modelling, Groundwater monitoring
- Mineral exploration, including project support and reporting.
- Mining Right Applications.
- Prospecting Right Applications.
- Mining Permit Applications.
- EMP Performance Assessments.
- Water Use License Audits.
- Closure Plans for Mines.
- Rehabilitation Plans.
- Groundwater flow and transport modelling
- Modelling natural attenuation
- Aquifer hydraulics, i.e. mine de-watering and well field design
- Monte Carlo risk assessments
- Delineation of borehole protection zones
- Risk-Based Corrective Action (RBCA)
- Professional borehole siting
- Management of groundwater resources
- Borehole design and construction
- Recharge assessment and quantification
- Borehole and aquifer tests
- Rural or urban water supply



- Groundwater and surface water quality evaluation
- Aquifer protection and control
- Rehabilitation
- Monitoring
- Other Geo-Sciences Services.

## • **CLEANING AND OCCUPATIONAL HYGIENE SERVICES.**

We offer professional cleaning and occupational hygiene Services to a wide range of clients with differing needs. In light of Covid-19 pandemic, we also offer fogging and deep cleaning to eliminate bio-hazards such as SARS-CoV-2 Virus.

## • **WASTE MANAGEMENT.**

All waste generators must ensure that the wastes they generate are classified in accordance with SANS 1 0234 within one-hundred-and-eighty (180) days of generation. It is the regulatory obligation of the any Waste Generator to classify and quantify the amount of waste generated by their operations. This is to ensure compliance with the National Waste Information Regulations 2012, which falls under the National Environmental Management Act (NEMA): Waste Act No. 59 of 2008, is to control the collection of information on waste and waste management in South Africa to fulfil the objectives of the South African Waste Information System (SAWIS), as set out in Section 61 of NEMA.

At Tsiko Earth Science solutions we offer a variety of waste management services including:

- Waste Classification and Reporting to South African Waste Information System (SAWIS) as per regulations.
- Waste Collection and Recycling by a ROSE foundation Certified waste collector (especially for Hazardous waste such as used Oil, Acids, Solvents, reactive chemical waste or any other.

- Waste Management Plans – Tsiko can draw up a tailor-made waste management strategy and plan which is specifically suited to the waste management needs of your operations.
- Waste Manifest upkeep- Hazardous waste, generators thereof are required to document their Waste from cradle to grave using a Waste Manifest, which is submitted quarterly to the SAWIS.

Who may benefit from Waste Management Solutions offered by Tsiko?

- Anyone who:
  - Generates wastes
  - Store Waste
  - Transport waste
  - Reuse and Recycle waste

-on an industrial scale by regulation needs a Waste Management Strategy.

# MANAGEMENT TEAM

## 1. Humbelani Ramarumo, Director.

Humbelani is an experienced Consultant with a demonstrated history of working in the environmental services industry, particularly oil and gas. Skilled in contaminated land assessments; (Phase I, II and III), Groundwater sampling, Remediation. Strong consulting professional with over 10 years' experience.

Humbelani holds a BSc. Environmental Sciences degree from University of Venda. He also has certificates in Geology (University of Johannesburg).

Humbelani has worked for major environmental companies in South Africa including Mills & Otten, BKS Pty (Ltd) now called AECOM, Kantey & Templer, Geo Pollution Technologies and the global companies like ERM Southern Africa. He is a fanatical environmentalist, and continuously strives to incorporate various aspects of environmental sustainability and the principles of perm culture in all projects that he is involved with. He's main focus is environmental impact assessments and hydrocarbon contamination studies.

## 2. Stanford Muthala, Director

Stanford is a skilled and qualified Geologist and GIS tech, actively involved in mining and environmental sectors. Stanford has experience in the mining sector where he was under the geology department at Galaxy Gold Reefs prior and post graduating. He continuously strives to hone his skills and knowledge in the environmental sector under the mentorship of Humbelani Ramarumo. Stanford holds a Bachelors of Earth Sciences in Mining and Environmental Geology from the university of Venda. He also holds a diploma in GIS from ESRI College, South Africa.

## CLIMATE CHANGE PLEDGE

Tsiko Earth Sciences Solutions is committed to helping our clients reduce their carbon footprint and positioning them as green entities by making use of innovative solutions to their environmental issues to ensure not only compliance but also ensure their operations are not negatively impacting the environment and the communities in which they operate. We are committed as a business to help communities, especially rural communities to better understand their environment and ways to minimize the impacts and effects of climate change. We busy developing a research based, outcome-oriented solutions for environmental issues facing rural communities and such in the near future we will be helping communities tackle issues such as the following:

- Erosion and deforestation
- Water pollution and sewage problems.
- Power shortage (explore means to power deep rural areas with clean energy)
- Housing issues (explore Innovative green housing and alternatives)

If your company is passionate about issues above, Tsiko Earth sciences solutions is committed and ready to lend a helping hand in tackling the issues faced by rural communities.

## CONTACT US

To get a quote and learn more about our services, contact us on the following details.



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## THANK YOU FOR YOUR SUPPORT