

CES WATER QUALITY AND ECOSYSTEM MONITORING

CES SPECIALISES IN IMPACT ASSESSMENTS AND ENVIRONMENTAL MANAGEMENT



Coastal & Environmental Services Pty Ltd have specialists involved in Water Quality Assessments and Water Quality Monitoring services. Our consultants combine 'on-the-ground' experience, technical expertise and enthusiasm to provide fresh solutions for our clients. We believe good environmental management is fundamental to commercial and ecological sustainability.

Our objective is to integrate water supply, sanitation and environmental health in a sustainable way, in order to achieve positive social, economic and institutional benefits. At CES we guarantee that our clients receive personalised service, and all aspects of every project are completed by experienced and suitably qualified professionals.

Core Competencies

We provide our clients with a complete environmental monitoring and assessment package including:

- Interpretation of licence conditions, due diligence and compliance monitoring of effluent streams and receiving waters;
- Environmental auditing and legislative compliance;
- Design and implementation of monitoring programs which are developed around target ecosystem values, monitoring objectives and timeframes of interest;
- Development of Environmental Management Systems;
- Analysis and reporting of results; and Skills transfer to local staff.

We are experienced in the design and implementation of water monitoring programs for:

- Mining and exploration projects;
- Industrial Development Zones;
- Bulk water transfer projects;
- Development construction;
- Water development projects;
- Environmental monitoring and assessment; and
- Wastewater treatment and discharge.

We undertake in-situ water quality analysis for multiple parameters and collect samples for analysis at SANAS accredited laboratories.

Biological services

CES can provide the following services to assist with monitoring programs:

- Water Quality profiling and sampling to South African Standards as well as World Health Organisation (WHO) standards;
- Comparison of local water quality standards to that of funding agencies such as AFB, World Bank etc.;
- Habitat mapping and assessment including the production of high-resolution maps (GIS and Satellite imagery); and
- Macroinvertebrate sampling, sorting and identification based on the South African Scoring System (SASS5) with accredited staff.

Aquatic Ecology and Surface Water Quality Baseline Surveys

- Triton Ancuabe Graphite Mine, Northern Mozambique
- Kenmare Moma Heavy Minerals Mine, Mozambique
- Alphamin Bisie Tin Mine ESHIA, Democratic Republic of Congo
- Sasol Coastal Stream ESHIA, Mozambique
- Triton Nicanda Hills Graphite Mine, Northern Mozambique
- Suni Resources Balama Graphite Mine, Northern Mozambique
- Suni Resources Montepuez Graphite Mine, Northern Mozambique
- Graphit Kropfmühl (GK) Ancuabe Graphite Mine, Northern Mozambique
- Syrah Resources' Graphite Mine, Northern Mozambique

Surface Water & Groundwater monitoring

- Triton Ancuabe Graphite Mine, Northern Mozambique (2017 to 2019);
- Kenmare Moma Mining, Mozambique (2010); and
- ELIDZ Phase III Water Quality Monitoring (2002 to 2008 and 2019)



Key Staff Members

Dr Greer Hawley

Greer has a BSc degree in Botany and Zoology and a BSc Honours in Botany from the University of Cape Town. She completed her PhD thesis (Microbiology) at Rhodes University. Greer has been involved in a number of diverse activities. The core academic focus has been in the field of taxonomy both in the plant and fungal kingdom. Greer's research ranges from fresh water and marine algae, estuarine diatoms, plant species classification in the fynbos and forest vegetation and fungal species identification and ecology. Greer has been involved in environmental and biodiversity impact assessments and environmental and biodiversity management projects both in South Africa and other African countries. Greer has recently assisted with the completion of the Eastern Cape Biodiversity Conservation Plan (2019), the Eastern Cape Biodiversity Strategy and Action Plan and assisted with the generation of the Western Cape State of the Coast Report.

Ms Lara Crous

Lara is a Principal Environmental Consultant with seven years' experience conducting environmental impact assessments within various industries (from wind farms to heavy mineral mining) across Africa. Lara has extensive experience with South African environmental legislation (such as the National Environmental Management Act of 1998, the Mineral and Petroleum Resources Development Act of 2002 and the National Water Act of 1998) as well as Mozambican EIA and Resettlement legislation. Lara is also experienced with conducting EIAs to ensure

IFC compliance and has also gained experience with the resettlement process, having been involved with the Kenmare Moma Mining resettlement plans. Although experienced with projects across all sectors, Lara's strength is in the mining sector (from financial provision calculations to undertaking an ESHIA for a large scale mine) and has conducted water quality baseline and impact assessment studies in South Africa, Mozambique as well as Cameroon.

Mr Justin Green

Justin has been an Environmental Consultant with CES for 7 years and has been involved in numerous projects ranging from mining to renewable energy. Justin is part of the Geographical Information Systems (GIS) team for the past 6 years with his primary experience through ArcGIS 10 and Quantum GIS 3. He has 5 years of experience encompassing both the public and private sectors, specializing in Water Resources Management and Aquatic Biomonitoring and Assessment using the South African Scoring System (SASS5) methodology. SASS5 is based on the presence or absence of sensitive aquatic macroinvertebrates collected and analysed according to the methods outlined in Dickens and Graham (2002). Reports have been completed to both IFC and World Bank standards, with laboratory results being compared to International guidelines such as ANZECC and WHO. His work experience has been completed in South Africa, Lesotho, Cameroon, Tanzania, the DRC as well as numerous projects in Mozambique.



ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES

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