

APPENDIX B: EAP CURRICULUM VITAE AND REGISTRATION

CURRICULUM VITAE



ROB HOUNSOME

AFRICA GROUP MANAGING DIRECTOR

QUALIFICATIONS

MSc Environment Geochemistry	1994
BSc (Honours) Environmental Geology	1993
BSc Geology and Applied Geology	1992

EXPERTISE

- Environment, Social and Governance
- Due Diligence and Lender Compliance
- ESIA
- Stakeholder Engagement
- Pollution & Waste
- Climate Change

Rob is the Managing Director of the SLR Group of Companies in Africa. He has 27 years of wide-ranging experience in Environmental and Social advisory and consulting in more than 41 countries worldwide.

Rob has a particular interest in advising on complex environmental and social issues in developing countries and in assessing, monitoring and managing the impacts of development directly, indirectly and cumulatively on the natural environment and people. His experience has ranged from supporting National Government and International Agencies with the development and application of customised environmental planning and assessment tools through to completing ESDD's and ESIA's in accordance with requirements of National Governments, Industry Associations, and various funding agencies including major International Finance Institutes, Equator Principle Banks, and/or PE and Legal Firms. In addition, he has completed multiple research and consultancy technical assignments in the fields of Climate Change and Pollution & Waste.

Rob has worked extensively in the Mining, Oil & Gas, Manufacturing/Industrial and Infrastructure sectors.

Rob has lectured and supervised research students at Universities in South Africa, Sweden and the U.K., has facilitated multiple Environmental capacity building programmes across Africa and has presented keynote addresses to a number of international conferences on diverse subjects such as Environmental Assessment, Climate Change, Sustainability and Waste.

EXPERIENCE

**Africa Regional Manager /
Africa Group Managing
Director**

SLR Consulting
(2019 – current)

**Regional Director, Ramboll
Middle East & Asia**
(2015 – 2019)

**Leader of African Regional
Operations and Technical**

- International Association of Impact Assessment (Board Member from 2001 - 2006)
- South African Council for Natural Scientific Professions
- National Certification Referee for Environmental Assessment Practitioners (Founding Board Member)
- Board of the School of Environmental Sciences (University of Kwazulu-Natal, South Africa)
- Director of Golder Associates Ghana (30 person company with total revenue in excess of \$5M and executing projects up to \$4.5m for local and international clients in oil & gas and the mining sector.
- Director of Golder Associates Guinea (with total revenue in excess of \$30M)
- Director of Golder Associates Democratic Republic of Congo (with total revenue in excess of \$10M)
- Director of Golder Associates Mozambique (25 person company with total revenue in excess of \$5M and executing projects up to \$3M)

Director for Environmental Projects, Golder Associates
(2007-2015)

Director of Environment, Pollution and Waste Business Unit, Council for Scientific and Industrial Research: Natural Resources and the Environment (NRE)
(1997-2007)

Environmental Consultant, Walmsley Environmental Consultants
(1994 – 1997)

- Director of Golder Associates Botswana (5 person company with total revenue in excess of \$2M and executing projects up to \$500k)
- Director of Ramboll Middle East (250 person company with total revenue of \$125M)
- Managing Director of SLR Consulting Africa Group of Companies

Country Experience:

- **Africa:** Botswana, Democratic Republic of Congo, Ethiopia, Ghana, Guinea, Liberia, Mauritania, Mozambique, Namibia, Nigeria, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe
- **Asia:** Afghanistan, China, India, Philippine's, Uzbekistan, Vietnam
- **Europe:** Croatia, Denmark, Norway, Russia, Sweden, United Kingdom
- **Middle East and North Africa:** Algeria, Egypt, Jordan, Lebanon, Oman, Qatar, Saudi Arabia, Syria, UAE, Yemen

PROJECTS

As LESC, acted in an independent capacity to determine whether projects are compliant with the requirements of International Finance Institutions (IFI's). The assignments have involved assessing compliance, the development of Environmental and Social Action Plans, liaison with Lenders and their various advisors, and assisting in the drafting of suitable covenants into lending documents. Ongoing consulting support has been provided to Lenders for projects with potentially significant impacts.

Lenders Environmental and Social Consultant (LESC)

- LESC for Sohar Aluminium (2004 – ongoing)
- LESC for Emirates Aluminium (2007 – ongoing)
- LESC for Mindoro nickel project in Papua New Guinea (PNG) with a particular emphasis on resettlement action plans and the implications on indigenous people (2007)
- LESC Emirates Cement Company, United Arab Emirates (2007 – 2012)
- LESC for Cimint Blanc Algerian Spa, Algeria (2007 – 2012)
- LESC, for the Emerging Markets Telecommunications Company (EMTS) Project, in Lagos, Nigeria including the development of and Environmental & Social Action Plan and subsequent Environmental Management Programme (2008)
- LESC for Petroleum storage facility in Beira, Mozambique (2010)
- LESC for Aqalyng Water Management facility, Ghana (2010)
- LESC for the proposed Nkout Iron Ore project (2010)
- LESC for confidential acquisition of comprehensive waste management service facility to oil and gas exploration companies working offshore of Luanda, Angola (2010)
- LESC for Lafarge Cement Plant, Nigeria (2011)
- LESC for the Accugas Pipeline Project, Akwa Ibom State, Nigeria (2011)
- LESC for Roofings Ltd, Kampala, Uganda (2011)
- LESC for Boseto Copper Mine , Botswana (2012)
- LESC for Penumbra Coal Project, Mpumalanga, South Africa (2013)
- LESC for confidential aggregates quarry and cement manufacturing facility in Beluluane Industrial Park, Maputo and to the south of the city, Mozambique (2014)
- LESC for Konkola Copper Mines, the largest copper mine in Africa and one of the largest integrated copper facilities in the world (2015)
- LESC for Mina's proposed Petroleum storage terminal, berth facilities and associated infrastructure in the Port of Salalah, Oman (2016)
- LESC for Emirates Global Aluminium's bauxite refinery and associated works in the Emirate of Abu Dhabi, United Arab Emirates (2014 – Present)
- LESC for Duqm Refinery's proposed Refinery, Terminal(s) and pipeline project and associated facilities in the Special Economic Development Zone in Duqm, Oman (2017)
- LESC for Tuluu Kapi Gold Mine, Ethiopia (2020-ongoing)
- LESC for Lucara Diamond mine, Botswana (2021)

Fulfilled the role as ESDD consultant to determine any Environmental or Social liabilities with various facilities for investment purposes or in conjunction with ongoing compliance.

Environmental and Social Due Diligence Consultant

- ESDD for Envirotech, Johannesburg, South Africa (1995)
- ESDD Europair Johannesburg, South Africa (1995)
- ESDD review of a mining project in Zimbabwe for a confidential client (1996)
- ESDD for Mozambique Ports Development Company, Mozambique (2001)
- ESDD for Copper Mine and associated facilities in Zaire (1996-1997)
- ESDD of Freestart Battery CC in Pinetown, South Africa (2006)
- ESDD for the Proposed Medical Waste Management Facility at the Shongweni Landfill Site (Durban, South Africa) (2007)
- ESDD for the Taung Irrigation Scheme Project comprising three integrated projects (2007)
- ESDD for First Quantum Mining and Operations Limited (FQMOL) proposed Fishtie mine at Kashime Copper Project, Zambia (2008)
- ESDD for Iduapriem Mine, Ghana (2009)
- ESDD for Mogale Alloys, South Africa (2009)
- Annual ESDD audits for the Anglo Gold Ashanti Obuasi Mine in Ghana (2009-2012)
- ESDD of Tulawaka and Bulyanhulu gold mines in Tanzania (2009-2014)
- ESDD for three oil and gas facilities in Nigeria (2010)
- ESDD on Keaton Energy, South Africa (2010)
- ESDD for Richards Bay Minerals (2011)
- ESDD for Driefontein Mine, South Africa (2011)
- Environmental and social due diligence, including an Equator Principles compliance review, of the Central Ashanti Gold Ltd. mining operations in Ghana (2011)
- ESDD, including an IFI compliance review, of Gold Fields (Ghana) Ltd. Tarkwa and Damang Gold Mine operations in Ghana (2011)
- ESDD for a gold mine in Ghana (confidential for an Australian and European banking consortium) (2012)
- ESDD for a coal mine (Kangra Mine) in South Africa; this was an acquisition due diligence that had to address all liabilities including those for closure (2012)
- ESDD for Morila Mine, Ghana (2012)
- ESDD, including an IFI compliance review for the Medinandi Gold Mining Project for Papillon Resources in Mali (2012)
- ESDD for Sadiola Mine, Mali (2014)
- ESDD on a South African ferrochrome plant for Rukki Oyj, for acquisition purposes (2014)
- ESDD for ARABIAN PAPER PRODUCTS COMPANY-OLAYAN, Modon, KSA (2016)
- ESDD on several oil and gas installations in Saudi Arabia for acquisition or leasing purposes (2016 – 2018)
- ESDD on mixed-use development site in Split, Croatia (2018)
- ESDD and feasibility study for an Oil Refinery in Afghanistan on behalf of InFrontier (2019)
- ESDD for telecommunications portfolio investment with sites in nine countries across Africa (2019)
- ESDD for confidential mining project in Ethiopia (2020)
- ESDD for confidential mining project in Mpumalanga, South Africa (2020)
- ESDD for confidential industrial project in Lago, Nigeria (2020)

	Mining
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Glenover Phosphate mine, South Africa (1995)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Zwartkloof fluorspar mine, South Africa (1995)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for New Clydesdale Colliery, Exxaro (1995)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Greenside Colliery, Anglo American (1996)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Kloof underground gold mine, Goldfields S.A. (1996)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>

<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for limestone quarry, Ready Mix Materials (1996)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Sigma Colliery, Sasolburg (1996)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>Environmental and Social Impact Assessment and Environmental Management Programme Report for Greenside Colliery, Anglo American (1996)</p>	<p>Acted as Project Manager and lead author for the ESIA and EMP. Included the management of water, soils, air and ecology specialists and socio-economist. Led the stakeholder engagement programme.</p>
<p>EIA and contamination assessment for Sodimiza Copper Mine, Fluor Daniel Zaire/DRC (1996)</p>	<p>A Canadian based mining concern were interested in acquiring the Sodimiza Copper Mine in the Democratic Republic of Congo (at that stage Zaire). The EIA was conducted to review the environmental performance of the current operations and to evaluate the consequence of further expanding the mine. The EIA revealed significant environmental degradation on site including the sterilisation of vast tracts of land and significant water contamination. These impacts were manifest in a number of health concerns within the local community. The recommendations from the EIA led to the client implementing an integrated rehabilitation programme and putting in place community processes in response to the health concerns.</p>
<p>EIA for coal mining operation Riversdale Mozambique Lda (now Rio Tinto), Mozambique (2008-2009)</p>	<p>Technical advisor of two Environmental and Social Impact Assessments (ESIA) for Africa's largest open-cast coal mine and a coal-fired power plant near Tete, Mozambique on the confluence of two of the country's biggest rivers. Technical support for ESIA: procedural, enviro-legal, technical quality, socio-cultural and socio-economic risk and opportunities. Led and developed sustainability assessment for the proposed developments.</p>
<p>EIA for the Tulu Kapi Gold Mine, Ethiopia (2012-2015)</p>	<p>Project Leader. Nyota Minerals are proposing to establish a gold mine in rural Ethiopia. The ESIA was conducted to local regulatory and IFC standards and delivered well ahead of schedule. The project team integrated local technical experts with international specialists from more than 5 countries.</p>

<p>ESIA for Richards Bay Minerals expansion projects (2012-2015)</p>	<p>Project leader. The project involved assessing whether Richards Bay minerals had the appropriate approvals in place for all of their facilities and retrospective ESIA's for any unapproved facilities. This techno-legal project ultimately resulted in RBM regularising all of their permit conditions.</p>
<p>Various environmental assessment projects for Debswana (2012-2015)</p>	<p>Delivery of various environmental assessment and management projects as part of an overall Framework agreement for Debswana operations in Botswana.</p>
<p>ESIA & EMP update for Minas Moatize coal mine, Tete (2013-2014)</p>	<p>Technical advisor for the update of the ESIA and EMP for a coal mine in Tete, Mozambique. The project entailed a full review and update of all technical studies and the subsequent ESIA/EMP documents for submission to IFI's and the local regulators.</p>
<p>ESIA for Jindal iron ore mine, Kwazulu-Natal, South Africa (2013-2015)</p>	<p>Project leader for the ESIA Conducted an Environmental Impact Assessment for the establishment of an iron ore mine in South Africa to IFC standards on behalf of Jindal Africa. The proposed mine will be established within a moderately populated rural area of and may involve the resettlement of considerable numbers of people. The ESIA included a team of more than 100 specialists operating in diverse fields of expertise.</p>
<p>Strategic Environmental Advisory for Jindal coal, Botswana (2014)</p>	<p>Project leader advising Jindal on the regulatory and international financing requirements to establish a coal mine and associated power facility in Botswana.</p>
<p>ESIA for Manganese Mine in Northern Cape, South Africa (2019)</p>	<p>Project leader for the ESIA to regularise South 32's MMT mine's legal status.</p>
<p>ESG Closure advisory (2020 – current)</p>	<p>Advising several clients in South Africa on ESG considerations in mine closure in South Africa in alignment with the upcoming financial provision regulations.</p>
<p></p>	<p>Oil and Gas</p>
<p>EIA's for service station sites on the N3 near to Pietermaritzburg, Shell Petroleum, Durban, South Africa (1997)</p>	<p>Acted as Project Manager. The EIA compared two sites for the establishment of a service station adjacent to a National road. The EIA found neither site to be suitable due to high water tables and sensitive ecological conditions.</p>
<p>EIA for a gas pipeline in the Bazaruto archipelago, Sasol, Mozambique (2001-2002)</p>	<p>Project Manager. Sasol, as a project partner, were planning to implement a natural gas pipeline throughout the Bazaruto archipelago. The EIA involved detailed sea and land-based fieldwork and a comprehensive public engagement programme.</p>

<p>ESIA for Durban-Johannesburg pipeline for Transnet Ltd, South African fuels transportation company South Africa (2007-2009)</p>	<p>Co-Project Manager for Environmental and Social Impact Assessment (ESIA) for the New National Multi-Products Project (NMPP) for Transnet Ltd. Transnet Ltd is the South African State company with the mandate to ensure security of fuel supply to the country. The NMPP Project was one of the largest infrastructure projects ever in South Africa (US\$ 2 billion). The project consists of a coastal and inland fuel accumulation terminal capable of storing up to 180 000 m3 of different fuels joined by a 555-km 24' multi-products pipeline across mainly private land, with eight pump stations along the route.</p>
<p>ESIA's for Vopak Terminals petroleum storage facilities in Durban (x2), Richards Bay and Heidelberg, South Africa (2008-2014)</p>	<p>Project leader for several EIA's in Durban, Richards Bay and Heidelberg for greenfield (3 facilities) and brownfield (2 facilities) for petroleum storage on behalf of Vopak terminals in South Africa. The ESIA's were delivered in sensitive receiving locations from a risk management and/or environmental perspective and as such received significant scrutiny from the authorities and the public. In each case the projects were approved with no protest and/or conditionality.</p>
<p>ESIA for offshore and onshore facilities for Kosmos in Ghana (2011)</p>	<p>Project advisor. The ESIA focused on offshore and onshore facilities in Ghana with a focus on the impact on fisheries and fishermen.</p>
<p>Various ESIA's for fuel station decommissioning projects on behalf of Chevron in southern Africa (8 distinct projects) (2012-2015)</p>	<p>Project leader. Chevron have been decommissioning a number of their service stations in South Africa and are required to completed ESIA's in order to do so. A cost and time efficient ESIA process was negotiated with the authority to enable Chevron to successfully implement their project plans ahead of schedule and at a cost well below what they had expected.</p>
<p>EIA for GTL plant in Uzbekistan, Uzbekistan GTL (2012-2014)</p>	<p>Uzbekistan GTL is a joint venture between Uzbekneftegaz, Petronas and Sasol and are proposing to establish a GTL plant in Shurtan gas and chemical complex in Uzbekistan. Acted and Project Leader for the ESIA involving successful submission to meet local regulatory requirements and approval from IFI's including Export Credit Agencies. The ESIA was conducted in a combination of English and Uzbek and involved, at its peak, a team of >60 specialists. The role included negotiation with various international lending stakeholders.</p>
<p>ESIA for Shell Petroleum's Karoo basin unconventional gas exploration project (2012-2013)</p>	<p>Acted as Project Director, Technical reviewer and public consultation facilitator on the ESIA for Shell's Karoo project. The project entails unconventional gas exploration in the Karoo Basin in South Africa. The project received unprecedented public attention in South Africa and globally and resulted in one of the most comprehensive public consultation programmes ever undertaken for an ESIA project.</p>

<p>Establishment of Environmental and Social Management Plans for CNOOC (2012-2013)</p>	<p>Project Leader. In advance of CNOOC establishing their operations in Uganda, a comprehensive suite of ESMP documents were prepared. The ESMP's followed the requirements of the Ugandan regulations and the requirements of IFI's and positioned CNOOC for a successful project in-country.</p>
<p>ESIA for CNOOC oil and gas development in Uganda (2013-2015)</p>	<p>Acted as Project Director and overall ESIA lead for the ESIA to local and international standards for fullfield development, refinery and associated pipelines of a field in Uganda on behalf of the Chinese National Offshore Oil Company (CNOOC). The project included significant liaison and negotiation with the Ugandan government, project partners and IFI's. The project is a greenfields development in the oil and gas sector on the shores of Lake Albert in western Uganda, and represents the first production license issued in Uganda. CNOOC is the operator, with equal shareholding between CNOOC, Total and Tullow. A gas pipeline through rural terrain is part of the project scope.</p>
<p>ESIA baseline Physical and Biological monitoring for offshore Lake Tanganyika on behalf of Beach Petroleum (2013-2014)</p>	<p>Project Manager. Beach Petroleum were looking to establish an offshore exploration programme in Lake Tanganyika. As a precursor to the ESIA, a two year physical and biological monitoring programme in the offshore environment. The project team from originated from the US, Canada, South Africa and Tanzania.</p>
<p>ESIA for Sasol's Refinery, Central Processing Facility and Associated Pipelines on behalf of Sasol Mozambique via Genesis (2014)</p>	<p>Acted as Project Advisor for an Environmental Impact Assessment to IFC Performance Standards for a proposed expansion of the current Sasol Natural Gas Project in the Inhambane Province of Mozambique near Inhassoro, with the addition of a refinery, liquids plant and 19 new wells, half of which represent 'first oil' (light oil) in Mozambique, and an oil as well as gas pipeline.</p>
<p>Environmental Performance Review for Sohar Refinery, Oman (2014)</p>	<p>Undertook a strategic environmental review of the environmental performance of the Sohar Refinery for submission to the Ministry of Environment and Climate Affairs in Oman. The review provided a benchmark of environmental performance compared with similar refineries worldwide to guide the setting of regulatory standards.</p>
<p>ESIA for Puma Energy, Botswana (2014)</p>	<p>EIA to local regulatory standards for Puma Energy to establish various terminal projects in Botswana.</p>

<p>ESIA to IFI and local regulatory standards for 2D seismic survey on behalf of Delonex, Ethiopia (2014-2015)</p>	<p>Project Leader. Delonex has been awarded an exploration license in Ethiopia, covering Blocks 18, 19 and 21, located in the Warder-Galadi area with a total acreage of 29,865 sq km. An ESIA was undertaken to IFC and local regulatory standards for the 2D seismic survey phase of the exploration programme. The ESIA was successfully delivered in an aggressive (4 month) timeframe through careful planning, close liaison with the client and the authorities and by ensuring that the technical work was delivered to a very high standard.</p>
<p>ESIA to local standards for two Oil and Gas support facility sites in Dammam, KSA on behalf of NOV (2017-2018)</p>	<p>Project Leader. NOV is looking to establish two industrial sites to provide support to the Saudi Arabian oil and gas sector. Two ESIA's were undertaken to meet local standards.</p>
<p>Manufacturing and Power</p>	
<p>EIA for a chromic acid plant at Hlobane, Anglo American, Kwazulu-Natal, S.A. (1996)</p>	<p>Anglo American were proposing to develop a Chromic Acid Plant near one of their mining activities at Hlobane near to Vryheid (Kwazulu-Natal, South Africa). The EIA evaluated the environmental significance of the proposed development to the local atmospheric, aquatic, terrestrial and socio-economic conditions. As a consequence of the EIA and the significant issues identified, Anglo American decided not to proceed with the development.</p>
<p>EIA and environmental management plan for Hullett Aluminium's expansion project, Hullett Aluminium, Pietermaritzburg, South Africa (1996)</p>	<p>Hullett Aluminium process aluminium products including foil etc. from their plant in Pietermaritzburg. The EIA evaluated the environmental implications of expanding their operations. The EIA identified a number of impacts related to atmospheric pollution and water contamination and recommended mitigation measures to limit the significance of the impacts.</p>
<p>EIA and environmental management plan for Indian Ocean Fertiliser's expansion in Richards Bay, Indian Ocean Fertiliser, Richards Bay, South Africa (1999)</p>	<p>Fulfilled the role as Project Manager Indian Ocean Fertiliser make phosphorus-based fertilizers from their plant in Richards Bay (Kwazulu-Natal). The EIA evaluated the environmental implications of expanding their operations. The EIA identified a number of impacts related to atmospheric pollution, water contamination, marine pollution, waste management and socio-economics and recommended mitigation measures to limit the significance of the impacts. This project was particularly well received by the regional decision-makers.</p>

<p>EIA for the expansion of the Hillside aluminium smelter, Richard Bay, South Africa (1999-2000)</p>	<p>Hillside Aluminium was proposing to expand their operation into being the largest aluminium smelter in the western world. The EIA represented one of the most complex processes undertaken in South Africa to-date. The EIA process eventually reached over 100,000 stakeholders across diverse cultural backgrounds, age groups, language etc. This was supported with technical expertise focused on understanding the key environmental and socio-economic impacts. The project was awarded the 2001 BHP Billiton International Health Safety and Environment Award and the IAAsa National Premium Award. This project has expanded to include the preparation of waste water management guidelines and the development of an EIA follow-up process in support of the EIA.</p>
<p>Ongoing Strategic Environmental Management guidance to Hillside Aluminium (multiple projects) (1999- ongoing)</p>	<p>Providing specialist environmental management support to Hillside Aluminium for a variety of issues/initiatives, including:</p> <ul style="list-style-type: none"> Quantification of Groundwater and Receptor Impacts at Hillside Aluminium Development of an Integrated Water and Waste Management Plan (IWWMP) and a Rehabilitation Strategy and Implementation Plan (RSIP) Advising Hillside Aluminium on water management planning including the requirements for their stormwater retention facility Guidance on regulatory and ISO compliance Hillside Aluminium on their air quality requirements including an international benchmarking exercise on SO₂ and fluoride emissions from anode baking process and reduction sources. Ongoing support for liaison with communities.
<p>EIA for the development of an aluminium smelter in Coega Eastern Cape, South Africa (2000-2001)</p>	<p>Acted in the role as Technical Advisor for the EIA of the proposed Aluminium Pechiney smelter in the Coega Industrial Development Zone in the Eastern Cape Province of South Africa. The EIA involved complex air quality issues associated with cumulative emissions and nearby communities.</p>
<p>Ongoing Strategic Environmental Management guidance to Bayside Aluminium (multiple projects) (2000- ongoing)</p>	<p>Providing specialist environmental management support to Bayside Aluminium for a variety of issues/initiatives, including:</p> <ul style="list-style-type: none"> Quantification of Contamination Sources, Groundwater Pathway and Receptor Impacts Advising Bayside Aluminium on closure issues specifically in terms of water pollution and waste management Ad hoc support in liaison with regulators on water and waste issues PIN for Bayside Aluminium’s proposal to conduct a greenhouse gas reduction project/programme.

<p>Ongoing Strategic Environmental Management guidance to Mozal Aluminium (multiple projects) (2003- ongoing)</p>	<p>Providing specialist environmental management support to Mozal Aluminium for a variety of issues/initiatives, including:</p> <p>Environmental inputs on design, supply, manufacture, installation, construction and commissioning of treated waste water recovery water treatment plant</p> <p>Assisting MOZAL with waste management issues associated with dross</p> <p>Environmental and social monitoring plan</p>
<p>Ongoing Environmental Management support for Sohar Aluminium in Oman (2004- ongoing)</p>	<p>Ongoing advisory services to Sohar Aluminium (including the berth facilities, power plant, and the aluminium smelter) delivered formally on a bi-annual basis to support compliance with regulatory requirements and those of the Lenders through all Phases of Design, Construction, commissioning and Operations. Specialist services have included:</p> <p>Preparation of the Operations Environmental Management Framework</p> <p>Guidance on the management of SO₂ and fluoride emissions to meet international lender requirements</p> <p>Undertaking an Environmental review for the Omani government of the operating performance of the aluminium smelter and captured power plant.</p> <p>Training of Sohar Aluminium staff on the environmental issues associated with aluminium smelting in the Gulf.</p>
<p>EIA for the Rainbow Millenium Power Company, Richards Bay, South Africa (2004-2006)</p>	<p>Project Manager. The Rainbow Millenium Power Company is proposing to establish the first private enterprise coal fired power station in South Africa (at a location in Richards Bay). The project includes initially providing strategic support for the client to understand their environmental process requirements followed by a comprehensive EIA process. The EIA involved a specialist team of in excess of 50 scientists, engineers and sociologists due to the complex nature of the development and the proposed location.</p>
<p>EIA for a Ferrochrome Smelter on behalf of Tata Steel (India), Richards Bay, South Africa (2005-2006)</p>	<p>Project leader. Tata Steel proposed to establish a ferrochrome smelter in the heart of an industrial zone near to a residential area. The investment represents the first by this company outside of India. Due to the complexity of the receiving environment and the issues associated with public health and safety, the project received significant scrutiny from the public and the authorities. Through high quality technical work and a considered public engagement programme, the project was successful and Tata Steel are operating an environmentally acceptable facility.</p>
<p>EIA for an integrated aluminium complex in the Russian Federation, International Finance Corporation and European Bank for Reconstruction and Development, Russia (2005-2006)</p>	<p>Project Leader. SUAL Aluminium are proposing to establish an integrated aluminium complex, including a bauxite mine, an aluminium refinery and an aluminium smelter in the Russian Federation. The EIA is in the process of being conducted in terms of the IFC and EBRD's requirements and in line with the Russian 'OVOS' legislation. Included in the EIA process was the requirement to conduct a detailed audit of current activities at the bauxite mine and at another of SUAL's operations.</p>

<p>ESIA for BHP Billiton's proposed titanium ore smelter in Beluluane Industrial Park, Maputo (Mozambique) (2007)</p>	<p>Project Leader. An ESIA was undertaken for BHP Billiton's proposed titanium ore smelter in Maputo Mozambique. The project focused on significant issues associated with air and water quality and waste management. Due to market conditions, the project did not proceed.</p>
<p>Environmental Management support for Emirates Aluminium in Abu Dhabi, UAE (2007- ongoing)</p>	<p>Ongoing advisory services to Emirates Aluminium (including the berth facilities, power plant, and the world's largest single site aluminium smelter) delivered formally on a bi-annual basis to support compliance with regulatory requirements and those of the Lenders through all Phases of Design, Construction, commissioning and Operations.</p>
<p>ESIA for Kempe Dross' processing facility in Beluluane Industrial Park, Maputo (2008)</p>	<p>Project Leader. The ESIA was undertaken to determine the environmental suitability of Kempe Dross' facility to process waste from the Mozal smelter.</p>
<p>Environmental Management support for Kempe Dross (2008)</p>	<p>Advising Kempe on their approach to the management of dross and SPL on various smelters globally including in South Africa, Mozambique, the Middle East and Russia</p>
<p>EIA for the Moatize Power Project, Tete, Mozambique (2008-2009)</p>	<p>Project Leader. Vale were looking to establish a coal-fired power station adjacent to their mine in Mozambique. The power station would draw water from the Zambezi river and release immediately downstream into the same source. A technical team of more than 120 local and international specialists were assembled for the project. The ESIA was scrutinised by local regulators and IFI's and found to be one of the most comprehensive ever undertaken in the region. It has subsequently been used as a case study example for other companies looking to undertake ESIA's in the region.</p>
<p>Government of India (2009)</p>	<p>Guidance to the Government of India on environmental and social issues relating to investments into the aluminium smelting sector.</p>
<p>ESIA & EMP for Lafarge quarry and cement kiln in Syria (2011)</p>	<p>Project Leader. Lafarge sought international finance for their cement plant near to Aleppo in Syria. The ESIA was conducted in association with a Jordanian and Syrian partner and covered issues relating to air, water, waste, traffic, nomadic people and ecology. The project received finance from IFI's.</p>
<p>ESIA & EMP for Cimpor's proposed aggregate mine and processing facility in Gorongosa National Park (2011)</p>	<p>Project Leader. Cimpor sought finance from the IFC to establish a limestone quarry and aggregate processing facility inside the borders of the Gorongosa National Park. Due to the sensitivity of the receiving environment, the project attracted considerable international scrutiny and required a comprehensive ESIA and EMP with a particular focus on biodiversity impacts.</p>

<p>Development of EMP for Ma'Aden Aluminium smelter (2012)</p>	<p>Project Leader for the development of a comprehensive OESMP to meet lender requirements for the Ma'Aden Aluminium smelter in Saudi Arabia.</p>
<p>ESIA for sulphuric acid plant on Dundee Precious Metals site in Tsumeb, Namibia (2013-2014)</p>	<p>Project Leader. The ESIA was conducted on a brownfield site and included a number of technical studies focused on land, air and groundwater contamination. Due to historical issues with the site, careful delineation was required between existing issues and those likely to be caused by the newly proposed project.</p>
<p>Environmental Assessment of Hillside Aluminium's operations in Richards Bay (2014-2015)</p>	<p>Project Leader. A retrospective Environmental Assessment was conducted at the Hillside Aluminium smelter to determine the impacts of the facility so as to meet the requirements of the BHP Billiton Group.</p>
<p>Other</p>	
<p>EIA and contamination assessment of the New England Road Landfill site Pietermaritzburg Municipality, Pietermaritzburg, South Africa (1996)</p>	<p>The EIA involved determining the significance of expanding the operations of the New England Road Landfill site to accept hazardous waste materials. The EIA focused on issues of water contamination and odour. The resultant management plan ensured that the impacts were mitigated.</p>
<p>ESIA for the siting of hazardous landfill sites (1995-1996)</p>	<p>Project leader. Using GIS tools and through public interaction this project determined suitable sites for the establishment of hazardous landfill sites.</p>
<p>Environmental management strategy for Ekuseni, Nelson Mandela Children's Foundation (1996)</p>	<p>The Nelson Mandela Children's Foundation established a youth detention centre in Ekuseni. The project prepared a waste management strategy that aimed at receiving maximum return on waste products (i.e. waste reuse and recycling were key). In addition, a composting facility was established. Of the total waste produced only 10% was eventually landfilled. This project was conducted pro bono.</p>
<p>EIA for a bulk water supply in Ubombo, Mhlathuze Water, Zululand, South Africa (1997)</p>	<p>Mhlathuze Water was proposing to provide water to rural communities in Northern Kwazulu-Natal. The EIA evaluated two aspects of the proposal; firstly, whether the water source would be adequate and secondly, whether the pipeline to transport the water would have significant environmental consequences. In both cases, the environmental implications were mitigated and the bulk water scheme went ahead.</p>

<p>Environmental assessment and management plan for the Lubombo SDI, Department of Trade and Industry; South Africa, Swaziland and Mozambique (1998)</p>	<p>The Lubombo Spatial Development Initiative (SDI) were looking to promote a number of tourism initiatives in Swaziland and KwaZulu-Natal. The EIA evaluated the environmental effects of these developments and put in place a screening mechanism to evaluate tourism proposals.</p>
<p>ESIA for a five star tourism facility on the banks of the Zambezi River in Zambia (1998)</p>	<p>Acted as Project Leader for the ESIA of a 5-star resort located on the banks of the Zambezi River. Due to the project location critical issues were identified with respect to the migration of elephant to the river along with the potential loss of culturally sensitive areas. Mitigation plans were developed in conjunction with the local communities to reduce the significance of this impact.</p>
<p>ESIA guidelines and approach for Kalpasar project, India (2006)</p>	<p>Review of Environmental Assessment approach for the proposed Kalpasar project comprising the development of a 64km dam across the Gulf of Kalambhat, thereby impounding the flows of 12 rivers which discharge into the gulf, to form a freshwater lake of approximately 2,000 km². Provided recommendations to the Government of Gujarat on utilising alternative approaches to ESIA to establish environmental and social risks and impacts.)</p>
<p>ESIA for road upgrade project for Transnet (2009)</p>	<p>Project Leader. Transnet Limited undertook a large capital projects expansion programme of all the facilities in the Port of Durban. One important aspect that is crucial to the effective functioning of the port is the road and transportation system, which has become strained due to high traffic volumes using the port's road system. To solve this growing problem, Transnet Limited intends to upgrade and expand the roads in the Port of Durban. This will help facilitate the effective transportation of goods and cargo into and out of the harbour. The ESIA focused on the road upgrade programme across the port.</p>
<p>Feasibility study and ESIA for water re-use plant (2010-2014)</p>	<p>Project Leader. As a result of a water reconciliation process it became evident that there were insufficient water resources in the Durban Municipality. This project focused on understanding the technological, financial, environmental and social feasibility of re-using water for potable purposes in the Municipality. The project culminated in the preparation of an ESIA and associated permitting programme.</p>
<p>Advisor to Waste Management service provider (Interwaste) on the development of facilities in Tete and Pemba (2012-2014)</p>	<p>Acted as Project Advisor for a waste management service provider on the Environmental and Social implications of establishing a landfill site in Mozambique to support the mining and/or oil and gas industries.</p>
<p>ESIA for road development project in rural Uganda for CNOOC (2013)</p>	<p>Project Leader. A road is required to be constructed through a national park and community area in rural Uganda to access the Lake Albert oil fields. A rapid ESIA was conducted to meet the requirements of the local regulators and the IFC.</p>

<p>ESIA for the establishment of a hazardous waste landfill site on behalf of Interwaste (2013-2015)</p>	<p>Acted as Project Director for the ESIA of a hazardous waste landfill site with the incumbent issues of groundwater contamination and the potential loss of a wetland area.</p>
<p>ESIA for a five star tourism facility in Bilene, Mozambique (2015)</p>	<p>Project Director for the ESIA of a 5-star tourism resort in an ecologically sensitive part of rural Mozambique.</p>
<p>Environmental and Social Review of water supply offtake point for power plant (2015)</p>	<p>Review of environmental and social implications for the ACWA Power offtake from the Zambezi river for their power plant in Moatize, Mozambique. Determined the technical feasibility of and the potential environmental and social implications associated with a proposed change in the position of the water supply intake point on the Zambezi River and also the first 3.5 km of the rising main to the Vale Moatize Coal Mine running parallel to the Zambezi River.</p>
<p>ESIA for land development project in Aqaba, Jordon (2016)</p>	<p>The Saudi Arabian sovereign wealth fund (PIF) are looking to establish three large-scale development facilities in Aqaba, Jordan. The ESIA involved the assessment of three individual sites in Aqaba for residential, commercial and mix-use activities.</p>
<p>ESIA for land development in Umm al Qwaim, UAE (2018)</p>	<p>The ESIA focused on infrastructure development for a large island development offshore of the Emirate of Umm al Qwaim in the UAE.</p>
	<p>Development of Environmental Regulations, Guidelines and Best Practice Documents</p>
<p>Land and soil quality monitoring guidelines, Gold Fields (1996)</p>	<p>Land and soil quality monitoring guidelines were devised for the environmental branch of Gold Fields SA as part their day-to-day monitoring activities. The monitoring guidelines were then taught to the client through a number of training programmes and through the development of a video. The monitoring guidelines were tested at Greenside coal and Kloof gold mines to determine their suitability which was confirmed.</p>
<p>Environmental management guidelines in Paulpietersberg, Anglocoal (1996)</p>	<p>Anglocoal were in the process of closing a coal mine in Paulpietersberg. This project evaluated the environmental conditions of the mine (which was found to be producing significant environmental degradation specifically in terms of acid leachate) and prepared environmental management and rehabilitation guidelines to remediate the issues.</p>
<p>Waste Management Guidelines for the Mozambique Ports and Rail Company, Mozambique (1998)</p>	<p>The Mozambique Ports and Rail Company were proposing to privatize their ports throughout Mozambique. This project involved an environmental evaluation of the ports from a waste management perspective to identify significant environmental impacts and then went on to recommend management measures that needed to be implemented prior to privatization going ahead.</p>

<p>Development of Environmental Management for the Federal Government of Ethiopia, World Bank (1999-2001)</p>	<p>The objectives of this project were improve the capacity of experts and professionals engaged in Environmental Management activities, build competence and capacity in Environmental Management methods, upgrade and compile the already prepared procedural and sectoral EM guidelines, and prepare and develop project level EM guidelines in Ethiopia. The project was conducted in two phases, the first focused on institution building at the Federal level and the second focusing on regional training.</p>
<p>Environmental monitoring strategies for the Federal Government of Ethiopia and Djibouti, United Nations Industrial Development Organisation (2000)</p>	<p>As part of UNIDO's integrated programme for Ecologically Sustainable Industrial Development in Ethiopia and Djibouti, this project has focused on implementing integrated monitoring strategies to support sustainable industrial development in the country. Working closely with the Ethiopian EPA, the project has both implemented practices and ensured that adequate capacity has been built to ensure the sustainability of those practices in Ethiopia and Djibouti.</p>
<p>Development of South Africa's Integrated Environmental Management (IEM) Information Series (2004-2006)</p>	<p>Project Director for the development of South Africa's Integrated Environmental Management (IEM) Information Series comprising 16 guidance documents, as follows: Overview of Integrated Environmental Management; Screening; Scoping; Stakeholder Engagement; Specialist Studies; Impact Significance; Ecological Risk Assessment; Cumulative Effects Assessment; Cost Benefit Analysis; Life Cycle Assessment; Strategic Environmental Assessment; Criteria for determining Alternatives in EIA; Environmental Management Plans; Review in Environmental Impact Assessment; Environmental Auditing; Environmental Impact Reporting; and Environmental Economics (2005 – 2006)</p>
<p>Development of guidelines for SEA of mining activities (2004)</p>	<p>As one of their environmental management guideline series, SEACAM commissioned the preparation of a guideline document to guide mining activity EIA's in the coastal zone. A comprehensive booklet was developed for distribution to a number of stakeholders.</p>
<p>Development of guidelines for the incorporation of HIV/AIDS into EIA, World Bank (2004)</p>	<p>In recognition of the relationship between development and HIV/AIDS, this project provided detailed guidelines to link HIV/AIDS issues into the EIA process and then further into the project implementation cycle. The project drew on development experiences in Ethiopia, Uganda and South Africa.</p>
<p>Development of EIA guidelines and institutional arrangements for the Mpumalanga Government (2006-2008)</p>	<p>The objectives of this assignment were to develop regional guidelines for Environmental Management and the associated institutional arrangements for their implementation in the province of Mpumalanga.</p>
<p>Development of Environmental Enforcement legislation and Implementation Guidelines for the Government of Sudan, World Bank (2010-2011)</p>	<p>The objectives of this project were improve the capacity of experts and professionals engaged in environmental enforcement activities, build competence and capacity in enforcement methods, upgrade and compile the already prepared procedural and sectoral guidelines. The project included a full review of the institutional capacity of Sudan's environmental enforcement team and resulted in a revised institutional framework and plan for the implementation thereof.</p>

<p>Development of EIA guidelines for renewable energy projects in southern Africa (2013-2014)</p>	<p>The project involved the preparation of guidelines on what to include for a variety of renewable energy projects in Southern Africa taking account of key environmental or social concerns and regulatory requirements.</p>
<p>Development of Environmental mitigation options for the Port of Richards Bay Coal Terminal (2015)</p>	<p>This project involved the assessment of environmental impacts from coal storage at the Richards Bay Terminal and the development of mitigation options to concept level for presentation to the Department of Water Affairs. The study included a comprehensive evaluation of water and dust impacts along with an assessment of the relative opportunities and constraints associated with mitigation options. The project concluded with the presentation of the options to RBCT management and onto DWA for implementation purposes.</p>
<p>Strategic Transformation Office Leader for Greater Authority of Meteorology and Environmental Protection (GAMEP), Saudi Arabia (2017-2018)</p>	<p>The Saudi Arabian government is looking to modernise its environmental function and are implementing an ambitious programme of 22 major initiatives with a total value of USD 1B over 10 years. Leading a team of 22 specialists to guide the implementation of the initiatives. As part of the exercise, Ramboll has been advising on key standards and parameters for the oil and gas sector in KSA including for the refineries.</p>
<p>Transformation of the Municipal Waste sector in the Kingdom of Saudi Arabia for Ministry of Municipal and Rural Affairs (2017-2018)</p>	<p>The Saudi Arabian government is seeking to upgrade all Municipal Waste Management Facilities. Leading a team of 15 specialists ranging from Waste classification experts through to experts in Landfill Engineering and waste processing, the project resulted in PPP's for the 5 major municipalities and a further 15 municipalities undergoing review.</p>
	<p>Strategic Environmental Assessment and Sustainability Appraisal</p>
<p>Sustainable development report for Richards Bay minerals (1999-2001)</p>	<p>This project involved the development of sustainable development strategies for Richards Bay Minerals. The purpose of the project was to understand how sustainable current operations were/are and to put in place a strategic direction for sustainable development at the mine and smelting operations into closure.</p>
<p>Strategy for sustainable development for the Mining and Minerals sector in southern Africa, Mining Minerals and Sustainable Development (1999)</p>	<p>This project involved the preparation of a paper to assist the Mining and Minerals sector in Southern Africa understand the meaning of sustainable development as it applies to their operations. The paper formed a cornerstone for detailed evaluations regarding sustainability and the mining sector in the sub-region.</p>
<p>Preparation of guidelines for sustainability in poor urban communities in South Africa Department of Arts, Culture, Science and Technology Country Study (1999-2001)</p>	<p>This project entailed a large research project funded by the South African government aimed at developing a toolkit for ensuring that appropriate technologies are implemented for sustainable development in communities living in poverty in South Africa. The project involved the management of researchers from 5 countries and with different technical expertise. A number of papers and research outputs have resulted from the project.</p>

<p>Sustainability Management Plan for the South Durban Industrial Area (1997-2000)</p>	<p>This comprehensive SEA resulted in the development of a detailed sustainability plan for the largest industrial zone in Kwazulu-Natal. The plan integrated economic development needs with environmental constraints. The zone includes two significant petroleum refineries which were an integral part of the assessment process.</p>
<p>Sustainability Management Plan of the Cato Manor Structure Plan for Durban Metro, Cato Manor Development Association, Durban, South Africa (1997)</p>	<p>The project evaluated the environmental consequences of the development plan for the area. The project then went onto develop a detailed Sustainability Management Plan for the area.</p>
<p>Plan for the Maputo Corridor SDI, Department of Transport and the Department of Trade and Industry, Mpumalanga, South Africa (1998-1999)</p>	<p>The Maputo Corridor has been identified as a strategic development zone that links Johannesburg with Maputo. This project considered the opportunities and constraints that the environment will place on development opportunities, including those within the mining sector. On the basis of these social and environmental issues, a Sustainability Management Plan was devised to inform the ongoing planning process and to inform the decision-makers of appropriate developmental actions.</p>
<p>Sustainability Management Framework for industrial development in Richards Bay and Empangeni, Richards Bay and Empangeni TLC, South Africa (1999)</p>	<p>This project considered the opportunities and constraints that the environment will place on industrial development opportunities in Richards Bay and Empangeni. On the basis of these environmental issues, a Strategic Environmental Management Plan was devised to inform the ongoing planning process and to inform the decision-makers of appropriate environmental actions. Ongoing environmental management in the region is currently guided by the Management Plan.</p>
<p>Strategic Environmental Assessment for Stream Flow Reduction Activities in Mpumalanga, Department of Water Affairs and Forestry (2000)</p>	<p>Forestry represents a significant risk to water resources in the Mpumalanga Province in South Africa. This project considered the nature of those risks and through a decision-making framework identified suitable areas for further development.</p>
<p>Environmental sustainable industrial development strategy for Ethiopia, United Nations Industrial Development Organisation, Ethiopia (2000)</p>	<p>Ethiopia is in the process of implementing a Sustainable Industrial Development Policy. This project developed a project strategy for determining the activities that need to be undertaken when implementing an ESID approach.</p>

<p>Environmental sustainable industrial development strategy for Tanzania, United Nations Industrial Development Organisation, Tanzania (2000)</p>	<p>Tanzania is in the process of implementing a Sustainable Industrial Development Policy. This project developed a project strategy for determining the activities that need to be undertaken when implementing an ESID approach.</p>
<p>Development and implementation of sustainability management plans for Durban, Richards Bay, Sasolberg, the National Ports Authority, Coastal and Marine Management, and the CAPE project Municipalities of Durban and Richards Bay, Sasol, the NPA and MCM (various projects) (2000-2006)</p>	<p>These projects although distinct dealt with the development of sustainability management plans and indicators to guide ongoing environmental reporting. The projects engaged stakeholders in determining their key sustainability concerns and vision and devised indicators on that basis.</p>
<p>Development of a National core set of Sustainability Indicators for South Africa’s State of the Environment Report, Department of Environmental Affairs and Tourism, South Africa (2002-2004)</p>	<p>This project has involved the preparation of a core set of environmental indicators for national State of the Environment Reporting in South Africa. The project has looked to integrate the needs of specialists with technical indicators. Ongoing activities in this project include the development and implementation of training modules for similar activities in the regional authorities in South Africa.</p>
<p>Mining and Sustainable Development Country Study in South Africa, Department of Minerals & Energy, South Africa (2003-2006)</p>	<p>This project aims to provide guidelines for various aspects of sustainable development to the mining industry in South Africa, including the development of closure plans (at the mine and regional levels), environmental and social management guidelines and rehabilitation guidelines.</p>
<p>Development of SEA guidelines in the coastal zone, SEACAM, Southern Africa (2003)</p>	<p>This project involved the preparation of detailed guidelines for undertaking SEA in the Coastal Zones of east Africa.</p>
<p>Environmental Management Framework, Department of Water Affairs and Forestry (2004-2006)</p>	<p>As a legislated commitment, DWAF are required to prepare a detailed environmental management framework to inform the implementation of their ongoing plans. The EMF is a detailed strategic environmental management document that deals with all activities within the department and includes modalities for their implementation.</p>

<p>Point Nepean Sustainable Development Management Plan, Australia (2007)</p>	<p>Project advisor for the preparation of a Sustainable Development Management Plan for the tourism facilities in Point Nepean located near Melbourne, Australia.</p>
<p>Preparation of South Africa’s submission to the United Nations Commission for Sustainable Development (CSD-16) (2007)</p>	<p>Led the team responsible for preparing and presenting South Africa’s submission to the UNCSO. This involved the management of a multi-stakeholder team from the public and private sector along with various non-governmental bodies.</p>
<p>Environmental and Social Strategic Assessment for the Development of the Mineral Sector in the Mano River Union, Guinea, Liberia, Sierra Leone (2008-2010)</p>	<p>The West African Mineral Sector Strategic Analysis (WAMSSA) is a strategic environmental and social assessment intended to identify policy, institutional and regulatory adjustments required for integrating environmental and social considerations into mineral sector development in Africa.</p>
	<p>Environmental Capacity Building</p>
<p>Environmental Impact Assessment short courses (Multiple) National Department of Health South Africa, the Universities of Orange Free State, Zululand and Durban-Westville, and Lund University, Sweden. As part of an initiative of the World Bank EIA courses were presented in Zambia, Ethiopia, Sudan, Tanzania, Namibia and Mozambique, (ongoing)</p>	<p>Environmental Assessment courses are typically in the region of one week in length and have focused on providing the attendees with skills that will enable them to conduct an EIA. The courses focus on EIA in the developing world.</p>
<p>Environmental Assessment and Management course for the Ethiopian Environmental Protection Authority and Regional Authorities (2001-2002)</p>	<p>The World Bank funded an EIA course at the Federal level in Ethiopia in support of the EIA Guideline revision process. That course was well received and repeated through a number of regional courses held in Addis Ababa, Gambella, Asossa, Oromiya, Dire Dawa, Harar, Jijiga, Bahir Dar, Mekelle, Awassa and Aysaita</p>

<p>EIA courses for post graduate students, University of Natal, South Africa (2001-2009)</p>	<p>A comprehensive EA course is delivered annually for University of Natal students. The course includes 26 lectures, 6 tutorials and 6 practicals. The typical number of students is 45 to 60.</p>
<p>Environmental Assessment for Mining in the Coastal Zone, SEACAM (2005)</p>	<p>A one week course detailing the environmental implications of coastal zone mining was delivered to government officials, academics and consultants from countries on the east coast of Africa.</p>
<p>Strategic Environmental Assessment, IAIA and SEACAM (2005)</p>	<p>Presented several week long courses in the content, process and intent of SEA to government officials, consultants and academics.</p>
<p>Review of EIA practitioners, Shell, Nigeria (2005)</p>	<p>Shell (Nigeria) were looking to improve the quality of their internal environmental assessment staff and in their consultants. The project involved interviewing EA practitioners to evaluate competency and to rate them according to the international IEMSA accreditation system.</p>
<p>The incorporation of HIV/AIDS into EIA – short course, World Bank (2005)</p>	<p>A week long course on how to incorporate HIV/AIDS issues into development programmes was delivered to government officials, academics and consultants from southern African countries</p>

INDUSTRY LEADERSHIP

- Development of National Environmental Impact Assessment regulations and processes in various countries in Africa including South Africa, Ethiopia, Tanzania, Sudan, Guinea, Liberia and Sierra Leone for as a consultant for the World Bank.
- Participation and leadership in a number of international policy processes:
 - United Nations Industrial Development Organisation regarding Cleaner Production Strategies, and Sustainability in East Africa (most notably Ethiopia and Tanzania)
 - United Nations Environment Programme National Communication on Climate Change, Technology Needs Assessment for Climate Change in Southern Africa.
 - Organisation for Economic Cooperation and Development (OECD) for the incorporation of Strategic Environmental Issues into International Lending.
 - The World Bank regarding the incorporation of strategic issues such as HIV/AIDS and climate change into ESIA.
 - The Global Reporting Initiative (GRI) on the incorporation of sustainability indicators into company reporting.
 - ICLEI – Local governments for Sustainability panel on climate change at the local level including having been invited to lead a delegation to three global climate change conferences (COP14, 15 & 16).
 - The World Bank on considerations for Sustainability-led mining development in the Manu River Union Counties of Guinea, Sierra Leone and Liberia.
- University lecturer at the post-graduate level in Environmental Assessment and Management at the University of Kwazulu-Natal, South Africa, Lund University, Sweden and the University of Manchester, UK.
- Supervisor of 12 MSc theses with the University of Kwazulu-Natal and Lund University, Sweden.
- Presented keynote addresses to a number of international conferences on diverse subjects such as Environmental Assessment, Climate Change, Sustainability and Waste.
- Board Memberships for the School of Environmental Sciences at the University of Kwazulu-Natal and with private sector companies in Africa.
- Expert witness for several confidential arbitration hearings.

AWARDS

Industry Awards

- BHP Billiton International Health Safety and Environment Award (2001)
- Global Premium Award for Excellence in Environmental Assessment (International Association of Impact Assessment) (2002)
- Consulting Engineers South Africa (CESA) Award for International Business Developer of the Year (2011)
- Climate Change Business Journal Business Achievement Award – Project Merit in Climate Change Adaptation (GIZ Vulnerability and Impact of Climate Change on Major Tourism Attractions and Activities) (2012)

Personal/Company Awards

- CSIR:
 - Most Improved Scientist (1997)
 - Achiever of the Year (1999)
 - Leadership Award (1999)
 - Technologies for Environmental Assessment and Management Mentorship Awards (2000 & 2001)
 - Leadership Award (2002)
- Golder Associates:
 - Special Initiatives Award for leading the growth of several offices in Africa (2007)
 - Global Innovation Award for the development and implementation of new services in Climate Change vulnerability assessment and adaptation into Golder's global business (2008)
 - Global Business Development Award (2014)

CURRICULUM VITAE



NATASHA SMYTH

ENVIRONMENTAL ASSESSMENT PRACTITIONER

QUALIFICATIONS

BSc Hons	2008	Geography and Environmental Management
BSc	2007	Environmental and Biological Sciences

EXPERTISE

- Environmental Impact Assessments
- Environmental Compliance and Monitoring
- Environmental Due Diligence
- Management and facilitation of permitting and licensing processes
- Management and facilitation of stakeholder engagement processes
- Financial Provision, Closure and Rehabilitation Planning

Natasha is an environmental practitioner with SLR's South Africa office and is responsible for various environmental assessment projects. Natasha has 12 years of experience within the Minerals sector, both as a project manager and assistant to various projects in South Africa and Africa.

Natasha has managed and assisted in a wide range of Environmental Impact Assessment projects for major and small scale minerals developments throughout South Africa as well as in Namibia for many of the major operators within the minerals industry.

Since 2009 Natasha has been involved in over 50 projects of which she has project managed 36 projects varying in complexity with primary focus within the mining industry.

PROJECTS

Key aspects of Natasha's recent project experience are summarised below.

Environmental Compliance Assessment of the Lily and Barbrook Gold Mines (Limpopo Province) 2020

Project Manager. Legal environmental compliance assessment for the Lily and Barbrook Gold Mines and development of an Environmental and Social Action Plan.

Integrated Environmental Assessment Process for the Mamatwan Mine (Northern Cape Province) 2019 to 2020 - Manganese

Project Manager. Compilation of a Section 24G report, compilation of a scoping and environmental management programme reports, and an amendment of a Water Use Licence. The management of the stakeholder engagement process and a full set of specialists.

Environmental Assessment process for prospecting rights for Khwara Manganese (Pty) Ltd (Northern Cape Province) 2019 to 2020 - Manganese

Project Manager. Compilation of Basic Assessment Report and the management of the stakeholder engagement process and specialists in support two separate prospecting right applications.

<p>Environmental Assessment Process for the proposed alternative closure and rehabilitation strategy for the Tshipi Borwa Mine (Northern Cape Province) 2018 to 2019 - Manganese</p>	<p>Project Manager. Compilation of Basic Assessment Report and environmental management programme reports. The management of the stakeholder engagement process, multi-disciplinary specialist team both within South Africa and the UK. Assistant with the compilation of the Financial Provision Specialist Report.</p>
<p>Environmental Assessment Process for the merging of the Mamatwan Mine Sinterfontein Waste Rock dump and the Tshipi Eastern Waste Rock dump for the South32 Mamatwan mine (Northern Cape Province) 2019 - Manganese</p>	<p>Project Manager. Compilation of Basic Assessment Report and environmental management programme reports and the Water Use Licence Application. The management of the stakeholder engagement process specialist team including the compilation of the Financial Provision Specialist Report.</p>
<p>Minimum Air Quality Emissions Standard Postponement Application for Anglo American Platinum's Polokwane (Limpopo Province), Waterval (North West Province) and Mortimer Smelter (Limpopo Province) operations (2018 to 2019) - Platinum</p>	<p>Project Manager. Management of Stakeholder Engagement Process as part of an Air Quality Minimum Emissions Standards Postponement Application Process for the Waterval, Polokwane and Mortimer Smelter Complexes.</p>
<p>Minimum Air Quality Emissions Standard Postponement Application for the Zondereinde Northam Platinum Mine in the Limpopo Province in the Limpopo Province (2018 to 2019) - Platinum</p>	<p>Project Manager. Management of Stakeholder Engagement Process as part of an Air Quality Minimum Emissions Standards Postponement Application Process for the Zondereinde Smelter Complex.</p>
<p>Integrated Water Use Licence Application for the Lehating mine in the Northern Cape Province (2018 - 2019) - Manganese</p>	<p>Project Manager. Compilation of the Integrated Water and Waste Management Plan, Water Use Licence Application forms and the management of specialists in support of the Lehating Integrated Water Use Licence Application.</p>
<p>Integrated Water Use Licence Application for the new Khwara manganese mine in the Northern Cape Province (2018 - 2019) - Manganese</p>	<p>Project Manager. Compilation of the Integrated Water and Waste Management Plan, Water Use Licence Application forms, the management of specialists and authority liaison in support of the Khwara Integrated Water Use Licence Application.</p>
<p>Monthly environmental support for the Tshipi Borwa Mine (2018 – 2019) - Manganese</p>	<p>Project Manager. Off-site environmental support work.</p>
<p>Financial Provision for Infrastructure Changes at the Zondereinde Northam Platinum Mine in the Limpopo Province (2018) - Platinum</p>	<p>Project Manager. Compilation of the financial provision report for infrastructure changes at the Zondereinde Smelter Complex as part of a basic assessment process for changes to infrastructure at the smelter.</p>

<p>EMP commitments consolidation of the Tshipi and Mamatwan Mine for the mining of the barrier pillar in the Northern Cape Province (2018) - Manganese</p>	<p>Project Manager. Compilation of a barrier pillar mining commitments report to outline the collective environmental management programme, integrated water use licence and environmental authorisation commitments for both Tshipi and South32 specifically for the mining of the barrier pillar.</p>
<p>ESIA for the retreatment of copper tailings dams in the town of Kitwe in Zambia (2017 - 2018) - Copper</p>	<p>Project Manager. Compilation of scoping report and terms of reference. Compilation of the environmental and social impact assessment report to meet IFC requirements. Management of multi-disciplinary specialist studies. Co-ordination of specialist teams within Zambia and South Africa. Management of stakeholder engagement process.</p>
<p>Environmental compliance audit for the Sishen Dingelton resettlement site in the Northern Cape Province (2017)</p>	<p>Project Manager. Assess compliance with the conditions outlined in the environmental authorisation and the approved environmental management programme.</p>
<p>Environmental compliance audit for the Sishen Dingelton decommissioning site in the Northern Cape Province (2017)</p>	<p>Project Manager. Assess compliance with the conditions outlined in the environmental authorisation and the approved environmental management programme.</p>
<p>Atmospheric Emissions Compliance Audit for the Zondereinde Northam Platinum Mine in the Limpopo Province (2017) - Platinum</p>	<p>Project Manager. Assess compliance with the conditions of the atmospheric emissions licence for the Zondereinde Mine and report compilation.</p>
<p>Environmental compliance audit for the Northam Platinum Mine in the Limpopo Province (2017) - Platinum</p>	<p>Project Manager. Undertake an environmental compliance audit of the Zondereinde Mine in terms of applicable legislation and report compilation.</p>
<p>Independent Peer Review of the Vaal Gamagara Water Supply Scheme in the Northern Cape Province (2017)</p>	<p>Project co-ordinate. Management of specialists and review of environmental permitting aspects and assistance with report compilation.</p>
<p>Due diligence for a smelter complex and associated mine located in the North West Province (2016- 2017) - Ferrochrome</p>	<p>Project Manager. Team co-ordination and compilation of due diligence report</p>
<p>EIA and EMP for the development of the new Khwara underground mine in the Northern Cape Province (2016-2017) - Manganese</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme reports. Management of specialists and stakeholder engagement process and compilation of the financial provision report.</p>
<p>Environmental assessment process to cater for changes to the approved infrastructure layout at the Tshipi Borwa Mine in the Northern Cape Province (2012-2017) - Manganese</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme reports. The management of the stakeholder engagement process and specialists.</p>

<p>Preliminary close out audit for the Sishen Mine Dingleton Resettlement site near Kathu in the Northern Cape Province (2016)</p>	<p>Project Manager. Assess compliance with the conditions outlined in the environmental authorisation and the approved environmental management programme.</p>
<p>Update of the basic assessment report for the establishment of a diesel generator as part of dewatering infrastructure at the Evander No. 6 Shaft complex in the Mpumalanga Province (2016)</p>	<p>Project Manager. Update the basic assessment report to comply with the DMR report template</p>
<p>Environmental assessment process and air emissions license process for the establishment of the new Jeanette Mine in the Free State Province (2015-2016) - Gold</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme reports. Compilation of the technical supporting information required for a waste management license application and an air emissions license application. The management of the stakeholder engagement process and specialists.</p>
<p>Water Use License Compliance Audit for the UMK Mine in the Northern Cape Province (2015 - 2016) - Manganese</p>	<p>Project Manager. Assess compliance with the commitments included in the water use licenses issued and make recommendations for rectifying non-compliances and partial compliances identified during the audit.</p>
<p>Basic Assessment for undertaking prospecting related activities for Impala Platinum Mine in the North West Province (2015 -2016) - Platinum</p>	<p>Project Manager. Compilation of basic assessment report, management of specialists, management of stakeholder engagement process.</p>
<p>Environmental compliance audit for the UMK Mine in the Northern Cape Province (2015 -2016) - Manganese</p>	<p>Project Manager. Assess compliance with the conditions outlined in the environmental authorisation and the approved environmental management programme.</p>
<p>Environmental assessment process, waste management license process and water use license process for the establishment of a new Mokala Manganese Mine in the Northern Cape Province (2014-2016) - Manganese</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme reports. Compilation of the technical supporting information required for a water use license application process and submission of the waste management license application. The management of the stakeholder engagement process and specialists.</p>
<p>Environmental assessment process for the proposed construction of dewatering infrastructure and the development of a decant water pipeline in support of the proposed Evander Shaft 6 in the Mpumalanga Province (2014) - Gold</p>	<p>Project Manager. Compilation of a basic assessment report, the management of the stakeholder engagement process and the management of specialists.</p>

<p>Environmental legal gap analysis for Rappa Resources in the Gauteng Province (2014) - Gold</p>	<p>Project Manager. Compilation of an environmental legal gap analysis report to identify any inadequacies in existing approvals and to identify outstanding approvals in terms of the National Environmental Management Act 107 of 1998, the National Environmental Management: Waste Act 59 of 2008, the National Environmental Management: Air Quality Act 39 of 2004, and the National Water Act 36 of 1998 (NWA).</p>
<p>Environmental support work to meet the requirements of the approved environmental management programme and updating the water use license application for the UMK Mine in the Northern Cape Province (2009-2014) - Manganese</p>	<p>Project Manager. Environmental support with regards to assistance to the UMK Mine in implementing its environmental management programme commitments. This also includes quarterly stakeholder engagement processes, EMP performance assessments and quarterly audits. Updating the water use license and supporting documentation including a new integrated water and waste management plan and specialist management</p>
<p>Environmental Management Programme amendment for the Nooitgedacht Sand Quarry Mine in the Gauteng Province (2013) - Sand</p>	<p>Project Manager. Compilation environmental impact assessment and environmental management programme amendment report.</p>
<p>Proposed Kinsenda project amendment: underground mine and surface infrastructure for Meterox, Kinsenda Copper mine in the DRC (2013) - Copper</p>	<p>Project assistant. Assistance with the compilation of the environmental impact assessment and environmental management programme report.</p>
<p>The environmental assessment process to amend the existing environmental impact assessment report and environmental management programme report to cater for infrastructure changes as the Leeuwkop Platinum Mine in the North West Province (2012-2013) - Platinum</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme amendment reports. Submission of the waste management license application. The management of the stakeholder engagement process and specialists.</p>
<p>Environmental and social impact overview of the proposed development of a new training centre at the Impala Platinum Rustenburg Operation in the North West Province (2013) - Platinum</p>	<p>Project Manager. Compilation of a report to provide an overview of the potential environment and social impacts associated with the development of the proposed training centre.</p>
<p>Environmental Management Programme performance assessment of the Impala Rustenburg Operation in the North West Province (2012) - Platinum</p>	<p>Project assistant. Assistance with the on-site auditing and report writing required for the environmental management programme performance assessment</p>

<p>Prospecting environmental management plan renewal and amendment Afplats in the North West Province (2012) - Platinum</p>	<p>Project Manager. Compilation of the reports required for the renewal of a prospecting right, the amendment of an approved prospecting environmental management plan including the update of the financial provision and the management of the stakeholder engagement process.</p>
<p>Prospecting environmental management plan renewal and amendment (Impala Platinum Limited on behalf of Inkosi Platinum in the North West Province (2012) - Platinum</p>	<p>Project Manager. Compilation of the reports required for the renewal of a prospecting right, the amendment of an approved prospecting environmental management plan including the update of the financial provision and the management of the stakeholder engagement process.</p>
<p>Prospecting environmental management plan amendment Ntsimbintle Mining (Pty) Ltd) in the Northern Cape Province (2012) - Manganese</p>	<p>Project Manager. Compilation of the prospecting environmental management plan amendment report and specialist management.</p>
<p>The consolidation of Impala's fourteen existing approved environmental management programme reports into one consolidated report in the North West Province (2012) - Platinum</p>	<p>Project Manager. Compilation of a consolidated environmental impact assessment and environmental management programme report include the management of the stakeholder engagement process</p>
<p>Environmental evaluation of Pit8C at Impala Platinum in the North West Province (2012) - Platinum</p>	<p>Project Manager. Compilation of a report to evaluate if the approved EIA and EMP amendment report adequately caters for the proposed Pit8C conventional opencast mining area, in terms of the baseline environment, the impact assessment and the mitigation/management measures.</p>
<p>Environmental assessment process for the environmental impact assessment and environmental management programme amendment for a proposed new tailings dam, re-processing of an old tailings dam, rehabilitation of the old tailings and waste disposal site, and open pit expansion for Impala Platinum Limited (Rustenburg Operation) in the North West Province (2011-2012) - Platinum</p>	<p>Project Manager. Compilation of scoping and environmental impact assessment and environmental management programme reports. Compilation of the technical supporting information required for a water use license application process. The management of the stakeholder engagement process and specialists</p>
<p>EIA and EMP for the establishment of the Swakop Uranium Mine in Namibia (2011)</p>	<p>Project assistant. Project assistant with stakeholder engagement and managing specialists.</p>

EIA and EMP for the establishment of the new Husab Uranium Mine in Namibia (2011) - Uranium	Project assistant. Project assistant with stakeholder engagement and managing specialists.
EIA and EMP for the linear infrastructure associated with the Swakop Uranium Mine in Namibia (2010-2011) - Uranium	Project assistant. Project assistant with stakeholder engagement and managing specialists.
Environmental assessment process for the establishment of the new Turquoise iron ore mine in the Limpopo Province (2010-2011) – Iron Ore	Project assistant. Assistance with the stakeholder engagement process.
Environmental assessment process (2010)	Project assistant. Assistance with the compilation of the environmental impact assessment and environmental management programme report.
Environmental assessment process for the establishment of the new Kalkfontein Platinum Mine in the Limpopo Province (2010)	Project assistant. Assistance with the stakeholder engagement process.
Prospecting EMP for platinum group metals for Braggite Resources in the Mpumalanga Province (2010)	Project manager. Compilation of a prospecting EMP and stakeholder management process.
Compilation of the EIA and EMP reports for the Lonshi Copper Mine located in the DRC (2009-02010)	Project Assistant. Assistance with the compilation of the EIA and EMP reports for the Lonshi Copper Mine
Licensing of various water uses at the South Deep Mine in the North West Province (2009)	Project assistant. Assistant with water use licensing application.
Stakeholder engagement process for the Everest Platinum Mine as part of an EMP amendment to the extension of mining activities and changes to surface infrastructure in the Mpumalanga Province (2009)	Project assistant. Assistance with the stakeholder engagement process.
Stakeholder engagement process for the EIA and EMP amendment process for the new Northern Cape Manganese Company Mine (2009)	Project assistant. Assistance with the stakeholder engagement process.

EAPASA

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Environmental Assessment Practitioners Association of South Africa

Advancing environmental assessment practice in South Africa



Email: registrar@eapasa.org / Website: www.eapasa.org

Mrs Natasha Smyth
11B, Henry Road, Rivonia
Standalone house
Johannesburg
2129

Sent by email to: nsmyth@slrconsulting.com

Dear Mrs Smyth

Registered Environmental Assessment Practitioner: Number 2020/3035
Natasha Holly Smyth : South African ID 8610080193087

The Environmental Assessment Practitioners Association of South Africa (EAPASA) herewith certifies that Natasha Holly Smyth is a Registered Environmental Assessment Practitioner (EAP) in accordance with the prescribed criteria of Regulation 15.(1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Your registration is duly authorised by EAPASA as the single Registration Authority for EAPs in South Africa (appointed as per Regulation No. 104, Gazette No. 41434 of 8 February 2018, in terms of section 24H(3)(a) of the NEMA). Your status as a Registered EAP is displayed in the 'EAP Register' - please find your name and contact email address at

<https://registration.eapasa.org/registered-practitioners>

Your registration is effective for a period of five years from 19 February 2021, and expires on 19 February 2026. The renewal of your registration in 2026 will be contingent on you having met the requirements of EAPASA's Continuing Professional Development (CPD) policy during each year of registration.

As a Registered EAP you are required to uphold the EAPASA Code of Ethical Conduct and Practice in your professional endeavours, towards the goal of quality assurance in environmental assessment practice.

Please accept my congratulations on your registration.

Best regards

Dr Richard Hill
Registrar

Date: 19 February 2021

CURRICULUM VITAE



MAVISHA NARIANSAMY

SENIOR ENVIRONMENTAL CONSULTANT

EMPA, South Africa

QUALIFICATIONS

GDE	2015	Graduate Diploma in Engineering – Environmental Engineering
BSc Hons	2011	Bachelor of Science (Hons) - Environmental Monitoring and Modelling
BSc	2009	Bachelor of Science- Biological Science

EXPERTISE

- Environmental and Social Impact Assessment
- Strategic Environmental Assessments
- Stakeholder Engagement
- Water quality
- Screening Studies
- Integrated Waste and Water Management Plan
- Compliance Auditing

Mavisha Nariansamy is a Senior Environmental Consultant with the EMPA division at SLR. Mavisha began her environmental career working at the Department of Environmental Affairs in Chief Directorate: Protected Areas Systems Management. There she gained experience drafting National Norms and Standard's for mining in protected areas, reviewing EIAs for proposed listed activities in protected areas and updating the NPAES database. She has more than 6 years of experience in the civil engineering and environmental consulting field gaining experience in the mining, power, linear infrastructure, and water sectors. The current role focuses on servicing clients in the mining sector undertaking the management and execution of Environmental authorisations (EIA and scoping, EMPr Amendments, Basic Assessment), compilation of management plans, risk assessments, compliance auditing, monitoring and permitting. In addition to being well versed with the South African legislative processes, she is also experienced in working on international ESIA's involving alignment with the Equator Principles and IFC Performance Standards. She has worked on projects at varying capacities in Swaziland, Democratic Republic of Congo, Guinea, Namibia and South Africa.

PROJECTS

Marula Platinum – Scoping and EIA and IWULA for a 10 MW Solar PV Plant (Present)	Project manager. Compilation of reports, co-ordination of Integrated Water Use License Process and Scoping and EIA Process.
Marula Platinum – Basic Assessment and EMPr Amendment for the Ventilation Shaft Project (2020 – present)	Project manager. Compilation of BAR and EMPr document. Management of authorisation process, specialist investigations and authorisation process.
NAMPARKS (Namibia) Scoping and EIA (2020)	Project assistance. Compilation of Scoping and EIA report for NAMPARKS V infrastructure upgrade.

South Africa Mainstream Renewable Power Developments – Screening Report (2020)	Assistance project manager. Compilation of screening report for off-shore wind farms.
West Wits IWWMP (2020)	Project assistance. Compilation of the IWWMP for the West Wits mining operation in Johannesburg.
Norplats Plant Substation Expansion (Present)	Project Manager. Amendment of Environmental Management Programme for the Upgrade of the Plant Substation - Zondereinde Mine. Co-ordination of specialists, public participation, and management of the authorisation process. Compilation of Amended EMP documents.
Tshipi Borwa Mine: Compilation of RSIP (2020)	Project Manager. Compilation of the Rehabilitation Strategy and Implementation Plan for the Tshipi Borwa Mine.
Projects undertaken during the employ of Knight Piesold South Africa	
EMPr Update for Bakubung Platinum Mine (2016 – 2019)	Project Manager. The project was concerned with the amendment process for Bakubung Platinum Mine for the establishment of a new Tailings Storage Facility. The process included specialist studies as well as Integrated Water Use License amendments.
Water Quality Monitoring: Transnet Freight Rail (TFR) (2018 – 2019)	Project Manager. Logistical co-ordination and management for water quality monitoring for TFR across South Africa for an 18-month period. Analysis of chemical results and compilation of monthly monitoring reports.
External EIA Audits: Middelburg Ferrochrome (2019)	Project Manager and auditor. Conducted an external audit in terms of Regulation 34 of the EIA Regulations. Assessed compliance and reporting of audit findings to relevant authority.
Legal compliance audits for Middelburg Ferrochrome (2018)	Project Manager. Auditing of compliance to GN 704 regulations and ECA Section 20, stipulations of site Water Use License (WUL) and compliance to Kloof Dump closure Permit. Reporting of audit conditions.
Management Plans for Redstone Water Use Licence – Solar Reserve LLC (2018)	Project Assistance. Compilation of a rehabilitation plan for watercourses around project area.
EMPr Update: Wessel Hotazel Manganese Mines (2016 - 2018)	Project Manager. Update of the existing EMPr for the Wessels Mine, where activities included liaison with client and government officials, co-ordination of specialist studies, assessment of impact; public participation process and compilation of Environmental Impact Assessment Report.
Water Use License – Middelburg Ferrochrome (2017)	External Auditor. Auditing of compliance to GN 704 regulations and stipulations of site Water Use License (WUL) and compilation of audit reports.

<p>ECO monitoring for Ezulwini Water Supply Project - Swaziland Water Services Corporation (Swaziland) (2018)</p>	<p>Project Manager and External ECO Auditor. Conducted monthly ECO monitoring and ensuring compliance to construction CMP. Compilation of monthly ECO reports.</p>
<p>Kinsevere Primary Copper ESIA – MMG Kinsevere Copper Mine (DRC) (2017)</p>	<p>Project Assistance. Co-ordination of specialist studies, compilation of impact assessment for ESIA report and review of specialist studies.</p>
<p>Water Use License (WUL) audits - Samancor Chrome Ferrometals (2016 – 2018)</p>	<p>External Auditor. Auditing of compliance to stipulations of Water Use License (WUL) and compilation of audit report.</p>
<p>Aquatic Biomonitoring at all Wastewater Treatment Works – Johannesburg Water (2014 – 2018)</p>	<p>Project Assistance. Undertook quarterly water quality monitoring including administrative, logistical duties and compilation of reports</p>
<p>Water Quality Site Support – MMG Kinsevere Copper Mine (DRC) (2014 – 2018)</p>	<p>Project Manager. Compilation of the mine’s water quality reports based on interpretation of laboratory results, providing water quality recommendations for the mine based on findings and trends, logistical support and procedures for water monitoring and sampling events.</p>
<p>Biodiversity Site Support – MMG Kinsevere Copper Mine (DRC) (2014 – 2018)</p>	<p>Project Manager. Project management and support for specialist studies undertaken at Kinsevere Copper Mine, to determine rehabilitation success of plant translocation programme</p>
<p>EIA for Oxidation Ponds - Ohangwena Regional Council (Namibia) (2016)</p>	<p>Project Assistance. Compilation of scoping report and impact assessment and preparation of BID documents and public participation material.</p>
<p>Initial Environmental Evaluation: Ezulwini Water Supply – Swaziland Water Services Corporation (Swaziland) (2016)</p>	<p>Project Assistance. Compilation of baseline and project description, stakeholder consultation and review of draft IEE report.</p>
<p>The City Deep Kazerne freight hub roads upgrade programme: ECO audit – SANRAL (2016)</p>	<p>ECO Auditor. Conduct monthly ECO monitoring and ensuring compliance to construction CMP and compilation of monthly ECO reports.</p>

<p>Ethemba Dam Environmental Impact Assessment - Ministry of Natural Resources and Energy (Swaziland) (2015 – 2016)</p>	<p>Project Assistance. Assistance with compilation some chapters for the ESIA Report.</p>
<p>Air Quality Site Support – MMG Kinsevere Copper Mine (DRC) (2014 – 2016)</p>	<p>Project Manager. Compilation of monthly feedback air quality reports, interpretation of laboratory data and management recommendations, logistical and administrative duties and management of sub consultants.</p>
<p>Environmental Impact Notice for plant modification and pit expansion for Siguiri Gold Mine – AngloGold Ashanti (Guinea) (2015)</p>	<p>Project Assistance. Updating EIN for Siguiri Gold Mine by compiling and reporting of baseline water quality data and other environmental baseline components for EIN update for the Combination Plant Project.</p>
<p>State of the Rivers – City of Johannesburg (2015)</p>	<p>Project Assistance. Conducted vegetation assessment (VEGRAI), including identification of riverine vegetation.</p>
<p>Lethabo Power Station: Waste Classification and Lining Type Assessment – ESKOM (2015)</p>	<p>Project Manager. Waste classification of ash and sewage sludge. Project management role and co-ordination/ liaison with specialists.</p>
<p>Update of Environmental Impact Study – MMG Kinsevere Copper Mine (DRC) (2014)</p>	<p>Project Assistance. Assisted with writing the baseline chapter for the update of the Environmental Impact Study and stakeholder material such as BID documents and information brochures.</p>
<p>Water Pollution Monitoring for Van Eck Power Station, Ruacana Power Station and Brakwater Depot – NamPower (2014 – 2015)</p>	<p>Project Assistance. Data analysis and report compilation, data capture, trend analysis and provide water quality recommendations.</p>
<p>MEMBERSHIPS</p>	
<p>Pr. Sci. Nat. SACNASP (Membership Number 115550)</p>	<p>Professional Natural Scientist (Environmental Science) of the South African Council for Natural Scientific Professions (SACNASP).</p>

IAIAsa
(Membership Number
6474)

Full member of the International Association of Impact Assessment (South Africa)



herewith certifies that

Mavisha Nariansamy

Registration Number: 115550

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Environmental Science (Professional Natural Scientist)

Effective 20 July 2016

Expires 31 March 2022



A handwritten signature in black ink, appearing to read 'Botha', is written over a horizontal line.

Chairperson

A handwritten signature in black ink, appearing to read 'M. Prasad', is written over a horizontal line.

Chief Executive Officer

