

CURRICULUM VITAE OF JO-ANNE THOMAS

Profession:	Environmental Management and Compliance Consultant; Environmental Assessment Practitioner
Specialisation:	Environmental Management; Strategic environmental advice; Environmental compliance advice & monitoring; Environmental Impact Assessments; Policy, strategy & guideline formulation; Project Management; General Ecology
Work experience:	Twenty one (21) years in the environmental field

VOCATIONAL EXPERIENCE

Provide technical input for projects in the environmental management field, specialising in Strategic Environmental Advice, Environmental Impact Assessment studies, environmental auditing and monitoring, environmental permitting, public participation, Environmental Management Plans and Programmes, environmental policy, strategy and guideline formulation, and integrated environmental management. Key focus on integration of the specialist environmental studies and findings into larger engineering-based projects, strategic assessment, and providing practical and achievable environmental management solutions and mitigation measures. Responsibilities for environmental studies include project management (including client and authority liaison and management of specialist teams); review and manipulation of data; identification and assessment of potential negative environmental impacts and benefits; review of specialist studies; and the identification of mitigation measures. Compilation of the reports for environmental studies is in accordance with all relevant environmental legislation.

Undertaking of numerous environmental management studies has resulted in a good working knowledge of environmental legislation and policy requirements. Recent projects have been undertaken for both the public- and private-sector, including compliance advice and monitoring, electricity generation and transmission projects, various types of linear developments (such as National Road, local roads and power lines), waste management projects (landfills), mining rights and permits, policy, strategy and guideline development, as well as general environmental planning, development and management.

SKILLS BASE AND CORE COMPETENCIES

- Project management for a range of projects
- Identification and assessment of potential negative environmental impacts and benefits through the review and manipulation of data and specialist studies
- Identification of practical and achievable mitigation and management measures and the development of appropriate management plans
- Compilation of environmental reports in accordance with relevant environmental legislative requirements
- External and peer review of environmental reports & compliance advice and monitoring
- Formulation of environmental policies, strategies and guidelines
- Strategic and regional assessments; pre-feasibility & site selection
- Public participation processes for a variety of projects
- Strategic environmental advice to a wide variety of clients both in the public and private sectors
- Working knowledge of environmental planning processes, policies, regulatory frameworks and legislation

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- B.Sc Earth Sciences, University of the Witwatersrand, Johannesburg (1993)
- B.Sc Honours in Botany, University of the Witwatersrand, Johannesburg (1994)
- M.Sc in Botany, University of the Witwatersrand, Johannesburg (1996)

Short Courses:

- Environmental Impact Assessment, Potchefstroom University (1998)
- Environmental Law, Morgan University (2001)
- Environmental Legislation, IMBEWU (2017)
- Mining Legislation, Cameron Cross & Associates (2013)
- Environmental and Social Risk Management (ESRM), International Finance Corporation (2018)

Professional Society Affiliations:

- Registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist: Environmental Scientist (400024/00)
- Registered with the International Association for Impact Assessment South Africa (IAIASa): 5601
- Member of the South African Wind Energy Association (SAWEA)

EMPLOYMENT

Date	Company	Roles and Responsibilities
January 2006 - Current	Savannah Environmental (Pty) Ltd	Director Project manager Independent specialist environmental consultant, Environmental Assessment Practitioner (EAP) and advisor.
1997 – 2005	Bohlweki Environmental (Pty) Ltd	Senior Environmental Scientist at. Environmental Management and Project Management
January – July 1997	Sutherland High School, Pretoria	Junior Science Teacher

PROJECT EXPERIENCE

Project experience includes large infrastructure projects, including electricity generation and transmission, wastewater treatment facilities, mining and prospecting activities, property development, and national roads, as well as strategy and guidelines development.

RENEWABLE POWER GENERATION PROJECTS: PHOTOVOLTAIC SOLAR ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Christiana PV 2 SEF, North West	Solar Reserve South Africa	Project Manager & EAP
De Aar PV facility, Northern Cape	iNca Energy	Project Manager & EAP
Everest SEF near Hennenman, Free State	FRV Energy South Africa	Project Manager & EAP
Graafwater PV SEF, Western Cape	iNca Energy	Project Manager & EAP
Grootkop SEF near Allanridge, Free State	FRV Energy South Africa	Project Manager & EAP
Hertzogville PV 2 SEF with 2 phases, Free State	SunCorp / Solar Reserve	Project Manager & EAP
Karoshhoek CPV facility on site 2 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP

Project Name & Location	Client Name	Role
Kgabalatsane SEF North-East for Brits, North West	Built Environment African Energy Services	Project Manager & EAP
Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy Global	Project Manager & EAP
Lethabo Power Station PV Installation, Free State	Eskom Holdings SoC Limited	Project Manager & EAP
Majuba Power Station PV Installation, Mpumalanga	Eskom Holdings SoC Limited	Project Manager & EAP
Merapi PV SEF Phase 1 – 4 South-East of Excelsior, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Sannaspos Solar Park, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Ofir-Zx PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Oryx SEF near Virginia, Free State	FRV Energy South Africa	Project Manager & EAP
Project Blue SEF North of Kleinsee, Northern Cape	WWK Development	Project Manager & EAP
S-Kol PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Sonnenberg PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Tutuka Power Station PV Installation, Mpumalanga	Eskom Transmission	Project Manager & EAP
Two PV sites within the Northern Cape	MedEnergy Global	Project Manager & EAP
Two PV sites within the Western & Northern Cape	iNca Energy	Project Manager & EAP
Upington PV SEF, Northern Cape	MedEnergy Global	Project Manager & EAP
Vredendal PV facility, Western Cape	iNca Energy	Project Manager & EAP
Waterberg PV plant, Limpopo	Thupela Energy	Project Manager & EAP
Watershed Phase I & II SEF near Litchtenburg, North West	FRV Energy South Africa	Project Manager & EAP
Alldays PV & CPV SEF Phase 1, Limpopo	BioTherm Energy	Project Manager & EAP
Hyperion PV Solar Development 1, 2, 3, 4, 5 & 6	Building Energy	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Aberdeen PV SEF, Eastern Cape	BioTherm Energy	Project Manager & EAP
Christiana PV 1 SEF on Hartebeestpan Farm, North-West	Solar Reserve South Africa	Project Manager & EAP
Heuningspruit PV1 & PV 2 facilities near Koppies, Free State	Sun Mechanics	Project Manager & EAP
Kakamas PV Facility, Northern Cape	iNca Energy	Project Manager & EAP
Kakamas II PV Facility, Northern Cape	iNca Energy	Project Manager & EAP
Machadodorp 1 PV SEF, Mpumalanga	Solar To Benefit Africa	Project Manager & EAP
PV site within the Northern Cape	iNca Energy	Project Manager & EAP
PV sites within 4 ACSA airports within South Africa, National	Airports Company South Africa (ACSA)	Project Manager & EAP
RustMo1 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo2 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo3 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo4 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
Sannaspos PV SEF Phase 2 near Bloemfontein, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Solar Park Expansion within the Rooiwal Power Station, Gauteng	AFRKO Energy	Project Manager & EAP
Steynsrus SEF, Free State	SunCorp	Project Manager & EAP

Project Name & Location	Client Name	Role
Sirius Solar PV Project Three and Sirius Solar PV Project Four (BA in terms of REDZ regulations), Northern Cape	SOLA Future Energy	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Allemans Fontein SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Amandel SEF near Thabazimbi, Limpopo	iNca Energy	Project Manager & EAP
Arola/Doornplaat SEF near Ventersdorp, North West	FRV & iNca Energy	Project Manager & EAP
Bloemfontein Airport PV Installation, Free State	The Power Company	Project Manager & EAP
Brakspruit SEF near Klerksorp, North West	FRV & iNca Energy	Project Manager & EAP
Carolus Poort SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Damfontein SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Everest SEF near Welkom, Free State	FRV & iNca Energy	Project Manager & EAP
Gillmer SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Grootkop SEF near Allansridge, Free State	FRV & iNca Energy	Project Manager & EAP
Heuningspruit PV1 & PV 2 near Koppies, Free State	Cronimat	Project Manager & EAP
Kimberley Airport PV Installation, Northern Cape	The Power Company	Project Manager & EAP
Kolonnade Mall Rooftop PV Installation in Tshwane, Gauteng	Momentous Energy	Project Manager & EAP
Loskop SEF near Groblersdal, Limpopo	S&P Power Unit	Project Manager & EAP
Marble SEF near Marble Hall, Limpopo	S&P Power Unit	Project Manager & EAP
Morgenson PV1 SEF South-West of Windsorton, Northern Cape	Solar Reserve South Africa	Project Manager & EAP
OR Tambo Airport PV Installation, Gauteng	The Power Company	Project Manager & EAP
Oryx SEF near Virginia, Free State	FRV & iNca Energy	Project Manager & EAP
Rhino SEF near Vaalwater, Limpopo	S&P Power Unit	Project Manager & EAP
Rustmo2 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
Spitskop SEF near Northam, Limpopo	FRV & iNca Energy	Project Manager & EAP
Steynsrus PV, Free State	Suncorp	Project Manager & EAP
Tabor SEF near Polokwane, Limpopo	FRV & iNca Energy	Project Manager & EAP
Upington Airport PV Installation, Northern Cape	The Power Company	Project Manager & EAP
Valeria SEF near Hartebeestpoort Dam, North West	Solar to Benefit Africa	Project Manager & EAP
Watershed SEF near Lichtenburg, North West	FRV & iNca Energy	Project Manager & EAP
Witkop SEF near Polokwane, Limpopo	FRV & iNca Energy	Project Manager & EAP
Woodmead Retail Park Rooftop PV Installation, Gauteng	Momentous Energy	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO and bi-monthly auditing for the construction of the Adams Solar PV Project Two South of Hotazel, Northern Cape	Enel Green Power	Project Manager
ECO for the construction of the Kathu PV Facility, Northern Cape	REISA	Project Manager
ECO and bi-monthly auditing for the construction of the Pulida PV Facility, Free State	Enel Green Power	Project Manager
ECO for the construction of the RustMo1 SEF, North West	Momentous Energy	Project Manager
ECO for the construction of the Sishen SEF, Northern	Windfall 59 Properties	Project Manager

Project Name & Location	Client Name	Role
Cape		
ECO for the construction of the Upington Airport PV Facility, Northern Cape	Sublinary Trading	Project Manager
Quarterly compliance monitoring of compliance with all environmental licenses for the operation activities at the Kathu PV facility, Northern Cape	REISA	Project Manager
ECO for the construction of the Konkoonies II PV SEF and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager
ECO for the construction of the Aggeneys PV SEF and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager

Compliance Advice and ESAP Reporting

Project Name & Location	Client Name	Role
Aggeneys Solar Farm, Northern Cape	BioTherm Energy	Environmental Advisor
Airies II PV Facility SW of Kenhardt, Northern Cape	BioTherm Energy	Environmental Advisor
Kalahari SEF Phase II in Kathu, Northern Cape	Engie	Environmental Advisor
Kathu PV Facility, Northern Cape	Building Energy	Environmental Advisor
Kenhardt PV Facility, Northern Cape	BioTherm Energy	Environmental Advisor
Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy	Environmental Advisor
Konkoonies II SEF near Pofadder, Northern Cape	BioTherm Energy	Environmental Advisor
Konkoonies Solar Farm, Northern Cape	BioTherm Energy	Environmental Advisor
Lephalale SEF, Limpopo	Exxaro	Environmental Advisor
Pixley ka Seme PV Park, South-East of De Aar, Northern Cape	African Clean Energy Developments (ACED)	Environmental Advisor
RustMo1 PV Plant near Buffelspoort, North West	Momentous Energy	Environmental Advisor
Scuitdrift 1 SEF & Scuitdrift 2 SEF, Limpopo	Building Energy	Environmental Advisor
Sirius PV Plants, Northern Cape	Aurora Power Solutions	Environmental Advisor
Upington Airport PV Power Project, Northern Cape	Sublinary Trading	Environmental Advisor
Upington SEF, Northern Cape	Abengoa Solar	Environmental Advisor
Ofir-ZX PV SEF near Keimoes, Northern Cape	Networx S28 Energy	Environmental Advisor
Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Environmental Advisor
Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Environmental Advisor

Due Diligence Reporting

Project Name & Location	Client Name	Role
5 PV SEF projects in Lephalale, Limpopo	iNca Energy	Environmental Advisor
Prieska PV Plant, Northern Cape	SunEdison Energy India	Environmental Advisor
Sirius Phase One PV Facility near Upington, Northern Cape	Aurora Power Solutions	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Biodiversity Permit & WULA for the Aggeneys SEF near Aggeneys, Northern Cape	BioTherm Energy	Project Manager & EAP
Biodiversity Permit for the Konkoonies II SEF near Pofadder, Northern Cape	BioTherm Energy	Project Manager & EAP
Biodiversity Permitting for the Lephalale SEF, Limpopo	Exxaro Resources	Project Manager & EAP

Project Name & Location	Client Name	Role
Environmental Permitting for the Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy	Project Manager & EAP
Environmental Permitting for the Upington SEF, Northern Cape	Abengoa Solar	Project Manager & EAP
Environmental Permitting for the Kathu PV Facility, Northern Cape	Building Energy	Project Manager & EAP
Environmental Permitting for the Konkoonsies Solar Farm, Northern Cape	BioTherm Energy	Project Manager & EAP
Environmental Permitting for the Lephalale SEF, Limpopo	Exxaro Resources	Project Manager & EAP
Environmental Permitting for the Scuitdrift 1 SEF & Scuitdrift 2 SEF, Limpopo	Building Energy	Project Manager & EAP
Environmental Permitting for the Sirius PV Plant, Northern Cape	Aurora Power Solutions	Project Manager & EAP
Environmental Permitting for the Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Environmental Permitting for the Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Permits for the Kleinbegin and UAP PV Plants, Northern Cape	MedEnergy Global	Project Manager & EAP
S53 Application for Arriesfontein Solar Park Phase 1 – 3 near Danielskuil, Northern Cape	Solar Reserve / SunCorp	Project Manager & EAP
S53 Application for Hertzogville PV1 & PV 2 SEFs, Free State	Solar Reserve / SunCorp	Project Manager & EAP
S53 Application for the Bloemfontein Airport PV Facility, Free State	Sublunary Trading	Project Manager & EAP
S53 Application for the Kimberley Airport PV Facility, Northern Cape	Sublunary Trading	Project Manager & EAP
S53 Application for the Project Blue SEF, Northern Cape	WWK Developments	Project Manager & EAP
S53 Application for the Upington Airport PV Facility, Free State	Sublunary Trading	Project Manager & EAP
WULA for the Kalahari SEF Phase II in Kathu, Northern Cape	Engie	Project Manager & EAP
Environmental Permitting for the Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Environmental Permitting for the Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Project Manager & EAP

RENEWABLE POWER GENERATION PROJECTS: CONCENTRATED SOLAR FACILITIES (CSP)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Ilanga CSP 2, 3, 4, 5, 7 & 9 Facilities near Upington, Northern Cape	Emvelo Holdings	Project Manager & EAP
Ilanga CSP near Upington, Northern Cape	Ilangethu Energy	Project Manager & EAP
Ilanga Tower 1 Facility near Upington, Northern Cape	Emvelo Holdings	Project Manager & EAP

Project Name & Location	Client Name	Role
Karoshhoek CPVPD 1-4 facilities on site 2 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Karoshhoek CSP facilities on sites 1.4; 4 & 5 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Karoshhoek Linear Fresnel 1 Facility on site 1.1 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the !Khi CSP Facility, Northern Cape	Abengoa Solar	Project Manager
ECO for the construction of the Ilanga CSP 1 Facility near Upington, Northern Cape	Karoshhoek Solar One	Project Manager
ECO for the construction of the Solar Park, Northern Cape	Kathu Solar	Project Manager
ECO for the construction of the KaXu! CSP Facility, Northern Cape	Abengoa Solar	Project Manager
Internal audit of compliance with the conditions of the IWUL issued to the Karoshhoek Solar One CSP Facility, Northern Cape	Karoshhoek Solar One	Project Manager

Screening Studies

Project Name & Location	Client Name	Role
Upington CSP (Tower) Plant near Kanoneiland, Northern Cape	iNca Energy and FRV	Project Manager & EAP

Compliance Advice and ESAP reporting

Project Name & Location	Client Name	Role
Ilanga CSP Facility near Upington, Northern Cape	Ilangethu Energy	Environmental Advisor
Ilangaletu CSP 2, Northern Cape	FG Emvelo	Environmental Advisor
Kathu CSP Facility, Northern Cape	GDF Suez	Environmental Advisor
Lephalale SEF, Limpopo	Cennergi	Environmental Advisor
Solis I CSP Facility, Northern Cape	Brightsource	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Environmental Permitting for the Ilanga CSP Facility near Upington, Northern Cape	Ilangethu Energy	Project Manager & EAP
Environmental Permitting for the Kathu CSP, Northern Cape	GDF Suez	Project Manager & EAP
WULA for the Solis I CSP Facility, Northern Cape	Brightsource	Project Manager & EAP

RENEWABLE POWER GENERATION PROJECTS: WIND ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Sere WEF, Western Cape	Eskom Holdings SoC Limited	EAP

Project Name & Location	Client Name	Role
Aberdeen WEF, Eastern Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Amakhala Emoyeni WEF, Eastern Cape	Windlab Developments	Project Manager & EAP
EXXARO West Coast WEF, Western Cape	EXXARO Resources	Project Manager & EAP
Goereesoe Wind Farm near Swellendam, Western Cape	iNca Energy	Project Manager & EAP
Hartneest WEF, Western Cape	Juwi Renewable Energies	Project Manager & EAP
Hopefield WEF, Western Cape	Umoya Energy	EAP
Kleinsee WEF, Northern Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Klipheuwel/Dassiesfontein WEF within the Overberg area, Western Cape	BioTherm Energy	Project Manager & EAP
Moorreesburg WEF, Western Cape	iNca Energy	Project Manager & EAP
Oyster Bay WEF, Eastern Cape	Renewable Energy Resources Southern Africa	Project Manager & EAP
Project Blue WEF, Northern Cape	Windy World	Project Manager & EAP
Rheboksfontein WEF, Western Cape	Moyeng Energy	Project Manager & EAP
Spitskop East WEF near Riebeeck East, Eastern Cape	Renewable Energy Resources Southern Africa	Project Manager & EAP
Suurplaat WEF, Western Cape	Moyeng Energy	Project Manager & EAP
Swellendam WEF, Western Cape	IE Swellendam	Project Manager & EAP
Tsitsikamma WEF, Eastern Cape	Exxarro	Project Manager & EAP
West Coast One WEF, Western Cape	Moyeng Energy	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Amakhala Emoyeni Wind Monitoring Masts, Eastern Cape	Windlab Developments	Project Manager & EAP
Beaufort West Wind Monitoring Masts, Western Cape	Umoya Energy	Project Manager & EAP
Hopefield Community Wind Farm near Hopefield, Western Cape	Umoya Energy	Project Manager & EAP
Koekenaap Wind Monitoring Masts, Western Cape	EXXARO Resources	Project Manager & EAP
Koingnaas WEF, Northern Cape	Just Palm Tree Power	Project Manager & EAP
Laingsburg Area Wind Monitoring Masts, Western Cape	Umoya Energy	Project Manager & EAP
Overberg Area Wind Monitoring Masts, Western Cape	BioTherm Energy	Project Manager & EAP
Oyster Bay Wind Monitoring Masts, Eastern Cape	Renewable Energy Systems Southern Africa (RES)	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Albertinia WEF, Western Cape	BioTherm Energy	Project Manager & EAP
Koingnaas WEF, Northern Cape	Just Pal Tree Power	Project Manager & EAP
Napier Region WEF Developments, Western Cape	BioTherm Energy	Project Manager & EAP
Tsitsikamma WEF, Eastern Cape	Exxarro Resources	Project Manager & EAP
Various WEFs within an identified area in the Overberg area, Western Cape	BioTherm Energy	Project Manager & EAP
Various WEFs within an identified area on the West Coast, Western Cape	Investec Bank Limited	Project Manager & EAP
Various WEFs within an identified area on the West Coast, Western Cape	Eskom Holdings Limited	Project Manager & EAP

Project Name & Location	Client Name	Role
Various WEFs within the Western Cape	Western Cape Department of Environmental Affairs and Development Planning	Project Manager & EAP
Velddrift WEF, Western Cape	VentuSA Energy	Project Manager & EAP
Wind 1000 Project	Thabo Consulting on behalf of Eskom Holdings	Project Manager & EAP
Wittekleibosch, Snylip & Doriskraal WEFs, Eastern Cape	Exxarro Resources	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the West Coast One WEF, Western Cape	Aurora Wind Power	Project Manager
ECO for the construction of the Gouda WEF, Western Cape	Blue Falcon	Project Manager
EO for the Dassiesklip Wind Energy Facility, Western Cape	Group 5	Project Manager
Quarterly compliance monitoring of compliance with all environmental licenses for the operation activities at the Gouda Wind Energy facility near Gouda, Western Cape	Blue Falcon	Project Manager
Annual auditing of compliance with all environmental licenses for the operation activities at the West Coast One Wind Energy facility near Vredenburg, Western Cape	Aurora Wind Power	Project Manager
External environmental and social audit for the Amakhala Wind Farm, Eastern Cape	Cennergi	Project Manager
External environmental and social audit for the Tsitsikamma Wind Farm, Eastern Cape	Cennergi	Project Manager
ECO for the construction of the Excelsior Wind Farm and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager
External compliance audit of the Dassiesklip Wind Energy Facility, Western Cape	BioTherm Energy	Project Manager

Compliance Advice

Project Name & Location	Client Name	Role
Amakhala Phase 1 WEF, Eastern Cape	Cennergi	Environmental Advisor
Dassiesfontein WEF within the Overberg area, Western Cape	BioTherm Energy	Environmental Advisor
Excelsior Wind Farm, Western Cape	BioTherm Energy	Environmental Advisor
Great Karoo Wind Farm, Northern Cape	African Clean Energy Developments (ACED)	Environmental Advisor
Hopefield Community WEF, Western Cape	African Clean Energy Developments (ACED)	Environmental Advisor
Rheboksfontein WEF, Western Cape	Moyeng Energy	Environmental Advisor
Tiqua WEF, Western Cape	Cennergi	Environmental Advisor
Tsitsikamma WEF, Eastern Cape	Cennergi	Environmental Advisor
West Coast One WEF, Western Cape	Moyeng Energy	Environmental Advisor

Due Diligence Reporting

Project Name & Location	Client Name	Role
Witteberg WEF, Western Cape	EDPR Renewables	Environmental Advisor
IPD Vredenburg WEF within the Saldanha Bay area, Western Cape	IL&FS Energy Development Company	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Biodiversity Permitting for the Power Line between the Tsitikamma Community WEF & the Diep River Substation, Eastern Cape	Cennergi	Project Manager & EAP
Biodiversity Permitting for the West Coast One WEF, Western Cape	Aurora Wind Power	Project Manager & EAP
Environmental Permitting for the Excelsior WEF, Western Cape	BioTherm Energy	Project Manager & EAP
Plant Permits & WULA for the Tsitikamma Community WEF, Eastern Cape	Cennergi	Project Manager & EAP
S24G and WULA for the Rectification for the commencement of unlawful activities on Ruimsig AH in Honeydew, Gauteng	Hossam Soror	Project Manager & EAP
S24G Application for the Rhebokfontein WEF, Western Cape	Ormonde - Theo Basson	Project Manager & EAP
S53 Application & WULA for Suurplaat and Gemini WEFs, Northern Cape	Engie	Project Manager & EAP
S53 Application for the Hopefield Community Wind Farm near Hopefield, Western Cape	Umoya Energy	Project Manager & EAP
S53 Application for the Project Blue WEF, Northern Cape	WWK Developments	Project Manager & EAP
S53 for the Oyster Bay WEF, Eastern Cape	RES	Project Manager & EAP
WULA for the Great Karoo Wind Farm, Northern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP

CONVENTIONAL POWER GENERATION PROJECTS (COAL)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Mutsho Power Station near Makhado, Limpopo	Mutsho Consortium	Project Manager & EAP
Coal-fired Power Station near Ogies, Mpumalanga	Ruukki SA	Project Manager & EAP
Thabametsi IPP Coal-fired Power Station, near Lephallale, Limpopo	Axia	Project Manager & EAP
Transalloys Coal-fired Power Station, Mpumalanga	Transalloys	Project Manager & EAP
Tshivasho IPP Coal-fired Power Station (with WML), near Lephallale, Limpopo	Cennergi	Project Manager & EAP
Umbani Coal-fired Power Station, near Kriel, Mpumalanga	ISS Global Mining	Project Manager & EAP
Waterberg IPP Coal-Fired Power Station near Lephallale, Limpopo	Exxaro Resources	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Coal Stockyard on Medupi Ash Dump Site, Limpopo	Eskom Holdings	Project Manager & EAP

Project Name & Location	Client Name	Role
Biomass Co-Firing Demonstration Facility at Arnot Power Station East of Middleburg, Mpumlanaga	Eskom Holdings	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Baseload Power Station near Lephhalale, Limpopo	Cennergi	Project Manager & EAP
Coal-Fired Power Plant near Delmas, Mpumalanga	Exxaro Resources	Project Manager & EAP
Makhado Power Station, Limpopo	Mutsho Consortium, Limpopo	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the Camden Power Station, Mpumalanga	Eskom Holdings	Project Manager

Compliance Advice

Project Name & Location	Client Name	Role
Thabametsi IPP Coal-fired Power Station, near Lephhalale, Limpopo	Axia	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Permit application for the Thabametsi Bulk Water Pipeline, near Lephhalale, Limpopo	Axia	Project Manager & EAP
S53 & WULA for the Waterberg IPP Coal-Fired Power Station near Lephhalale, Limpopo	Exxaro Resources	Project Manager & EAP
S53 Application for the Tshivasho Coal-fired Power Station near Lephhalale, Limpopo	Cennergi	Project Manager & EAP

CONVENTIONAL POWER GENERATION PROJECTS (GAS)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Ankerlig OCGT to CCGT Conversion project & 400 kV transmission power line between Ankerlig and the Omega Substation, Western Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Gourikwa OCGT to CCGT Conversion project & 400 kV transmission power line between Gourikwa & Proteus Substation, Western Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Richards Bay Gas to Power Combined Cycle Power Station, KwaZulu-Natal	Eskom Holdings SoC Limited	Project Manager & EAP
Richards Bay Gas to Power Plant, KwaZulu-Natal	Richards Bay Gas	Project Manager & EAP
Decommissioning & Recommissioning of 3 Gas Turbine Units at Acacia Power Station & 1 Gas Turbine Unit at Port Rex Power Station to the existing Ankerlig Power Station in Atlantis Industria, Western Cape	Eskom Holdings	Project Manager & EAP
Two 132kV Chickadee Lines to the new Zonnebloem Switching Station, Mpumalanga	Eskom Holdings	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Fatal Flaw Analysis for 3 area identified for the establishment of a 500MW CCGT Power Station	Globeleq Advisors Limited	Project Manager & EAP
Richards Bay Gas to Power Combined Cycle Power Station, KwaZulu-Natal	Eskom Holdings SoC Limited	Project Manager & EAP

GRID INFRASTRUCTURE PROJECTS

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Aggeneis-Oranjemond Transmission Line & Substation Upgrade, Northern Cape	Eskom Transmission	Project Manager & EAP
Ankerlig-Omega Transmission Power Lines, Western Cape	Eskom Transmission	Project Manager & EAP
Karoshhoek Grid Integration project as part of the Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Koeberg-Omega Transmission Power Lines,, Western Cape	Eskom Transmission	Project Manager & EAP
Koeberg-Stikland Transmission Power Lines, Western Cape	Eskom Transmission	Project Manager & EAP
Kyalami Strengthening Project, Gauteng	Eskom Transmission	Project Manager & EAP
Mokopane Integration Project, Limpopo	Eskom Transmission	Project Manager & EAP
Saldanha Bay Strengthening Project, Western Cape	Eskom Transmission	Project Manager & EAP
Steelpoort Integration Project, Limpopo	Eskom Transmission	Project Manager & EAP
Transmission Lines from the Koeberg-2 Nuclear Power Station site, Western Cape	Eskom Transmission	Project Manager & EAP
Tshwane Strengthening Project, Phase 1, Gauteng	Eskom Transmission	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Dassenberg-Koeberg Power Line Deviation from the Koeberg to the Ankerlig Power Station, Western Cape	Eskom Holdings	Project Manager & EAP
Golden Valley II WEF Power Line & Substation near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Golden Valley WEF Power Line near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Karoshhoek Grid Integration project as part of the Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Konkoonsies II PV SEF Power Line to the Paulputs Substation near Pofadder, Northern Cape	BioTherm Energy	Project Manager & EAP
Perdekraal West WEF Powerline to the Eskom Kappa Substation, Western Cape	BioTherm Energy	Project Manager & EAP
Rheboksfontein WEF Powerline to the Aurora Substation, Western Cape	Moyeng Energy	Project Manager & EAP
Soetwater Switching Station near Sutherland, Northern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP

Solis Power I Power Line & Switchyard Station near Upington, Northern Cape	Brightsource	Project Manager & EAP
Stormwater Canal System for the Ilanga CSP near Upington, Northern Cape	Karoshhoek Solar One	Project Manager & EAP
Tsitsikamma Community WEF Powerline to the Diep River Substation, Eastern Cape	Eskom Holdings	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the Ferrum-Mookodi Transmission Line, Northern Cape and North West	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Gamma-Kappa Section A Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Gamma-Kappa Section B Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Hydra IPP Integration project, Northern Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Kappa-Sterrekus Section C Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Namaqualand Strengthening project in Port Nolloth, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
ECO for the construction of the Neptune Substation Soil Erosion Mitigation Project, Eastern Cape	Eskom	Project Manager
ECO for the construction of the Ilanga-Gordonia 132kV power line, Northern Cape	Karoshhoek Solar One	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Environmental Permitting and WULA for the Rockdale B Substation & Loop in Power Lines,	Eskom Holdings	Project Manager & EAP
Environmental Permitting and WULA for the Steelpoort Integration project, Limpopo	Eskom Holdings	Project Manager & EAP
Environmental Permitting for Solis CSP near Upington, Northern Cape	Brightsource	Project Manager & EAP

MINING SECTOR PROJECTS

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Elitheni Coal Mine near Indwe, Eastern Cape	Elitheni Coal	Project Manager & EAP
Groot Letaba River Development Project Borrow Pits	liso	Project Manager & EAP
Grootegeluk Coal Mine for coal transportation infrastructure between the mine and Medupi Power Station (EMPr amendment) , Limpopo	Eskom Holdings	Project Manager & EAP
Waterberg Coal Mine (EMPr amendment), Limpopo	Sesoko Resources	Project Manager & EAP
Aluminium Plant WML & AEL, Gauteng	GfE-MIR Alloys & Minerals	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Rare Earth Separation Plant in Vredendal, Western Cape	Rareco	Project Manager & EAP

Decommissioning and Demolition of Kilns 5 & 6 at the Slurry Plant, Kwa-Zulu Natal	PPC	Project Manager & EAP
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Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the Duhva Mine Water Recovery Project, Mpumalanga	Eskom Holdings SoC Limited	Project Manager
External compliance audit of Palesa Coal Mine's Integrated Water Use License (IWUL), near KwaMhlanga, Mpumalanga	HCI Coal	Project Manager
External compliance audit of Palesa Coal Mine's Waste Management License (WML) and EMP, near KwaMhlanga, Mpumalanga	HCI Coal	Project Manager
External compliance audit of Mbali Coal Mine's Integrated Water Use License (IWUL), near Ogies, Mpumalanga	HCI Coal	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Mining Operations (Brand se Baai), Western Cape	Tronox Namakwa Sands	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Mineral Separation Plant (MSP), Western Cape	Tronox Namakwa Sands	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Smelter Operations (Saldanha), Western Cape	Tronox Namakwa Sands	Project Manager
Compliance Auditing of the Waste Management Licence for the PetroSA Landfill Site at the GTL Refinery, Western Cape	PetroSA	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Waste Licence Application for the Rare Earth Separation Plant in Vredendal, Western Cape	Rareco	Project Manager & EAP
WULA for the Expansion of the Landfill site at Exxaro's Namakwa Sands Mineral Separation Plant, Western Cape	Exxaro Resources	Project Manager & EAP
S24G & WML for an Aluminium Plant, Gauteng	GfE-MIR Alloys & Minerals	Project Manager & EAP

INFRASTRUCTURE DEVELOPMENT PROJECTS (BRIDGES, PIPELINES, ROADS, WATER RESOURCES, STORAGE, ETC)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Bridge across the Ngotwane River, on the border of South Africa and Botswana	Eskom Holdings	Project Manager & EAP
Chemical Storage Tanks, Metallurgical Plant Upgrade & Backfill Plant upgrade at South Deep Gold Mine, near Westonaria, Gauteng	Goldfields	Project Manager & EAP
Expansion of the existing Welgedacht Water Care Works, Gauteng	ERWAT	Project Manager & EAP

Project Name & Location	Client Name	Role
Golden Valley WEF Access Road near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Great Fish River Wind Farm Access Roads and Watercourse Crossings near Cookhouse, Eastern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP
Ilanga CSP Facility Watercourse Crossings near Upington, Northern Cape	Karoshok Solar one	Project Manager & EAP
Modification of the existing Hartebeestfontein Water Care Works, Gauteng	ERWAT	Project Manager & EAP
N10 Road Realignment for the Ilanga CSP Facility, East of Upington, Northern Cape	SANRAL	Project Manager & EAP
Nxuba (Bedford) Wind Farm Watercourse Crossings near Cookhouse, Eastern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP
Pollution Control Dams at the Medupi Power Station Ash Dump & Coal Stockyard, Limpopo	Eskom	Project Manager & EAP
Qoboshane borrow pits (EMPr only), Eastern Cape	Emalahleni Local Municipality	Project Manager & EAP
Tsitsikamma Community WEF Watercourse Crossings, Eastern Cape	Cennergi	Project Manager & EAP
Clayville Central Steam Plant, Gauteng	Bellmall Energy	Project Manager & EAP
Msenge Emoyeni Wind Farm Watercourse Crossings and Roads, Eastern Cape	Windlab	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Harmony Gold WWTW at Doornkop Mine, Gauteng	Harmony Doornkop Plant	Project Manager & EAP
Ofir-ZX Watercourse Crossing for the Solar PV Facility, near Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Qoboshane bridge & access roads, Eastern Cape	Emalahleni Local Municipality	Project Manager & EAP
Relocation of the Assay Laboratory near Carletonville, Gauteng	Sibanye Gold	Project Manager & EAP
Richards Bay Harbour Staging Area, KwaZulu-Natal	Eskom Holdings	Project Manager & EAP
S-Kol Watercourse Crossing for the Solar PV Facility, East of Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Sonnenberg Watercourse Crossing for the Solar PV Facility, West Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Kruisvallei Hydroelectric Power Generation Scheme, Free State	Building Energy	Project Manager & EAP
Masetjaba Water Reservoir, Pump Station and Bulk Supply Pipeline near Nigel, Gauteng	Naidu Consulting Engineers	Project Manager & EAP
Access Road for the Dwarsug Wind Farm, Northern Cape Province	South Africa Mainsteam Renewable Power	Project Manager & EAP
Upgrade of the Cooling Water Treatment Facility at the Kriel Power Station, Mpumalanga	Eskom	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Roodepoort Open Space Optimisation Programme (OSOP) Precinct, Gauteng	TIMAC Engineering Projects	Project Manager & EAP
Vegetable Oil Plant and Associated Pipeline, Kwa-Zulu Natal	Wilmar Oils and Fats Africa	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO and bi-monthly auditing for the construction of the Olifants River Water Resources Development Project (ORWRDP) Phase 2A: De Hoop Dam, R555 realignment and housing infrastructure	Department of Water and Sanitation	Project Manager Auditor
ECO for the Rehabilitation of the Blaaupan & Storm Water Channel, Gauteng	Airports Company of South Africa (ACSA)	Project Manager
Due Diligence reporting for the Better Fuel Pyrolysis Facility, Gauteng	Better Fuels	Project Manager
ECO for the Construction of the Water Pipeline from Kendal Power Station to Kendal Pump Station, Mpumalanga	Transnet	Project Manager
ECO for the Replacement of Low-Level Bridge, Demolition and Removal of Artificial Pong, and Reinforcement the Banks of the Crocodile River at the Construction at Walter Sisulu National Botanical Gardens, Gauteng Province	South African National Biodiversity Institute (SANBI)	Project Manager
External Compliance Audit of the Air Emission Licence (AEL) for a depot in Bloemfontein, Free State Province and in Tzaneen, Mpumalanga Province	PetroSA	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
WULA for the Izubulo Private Nature Reserve, Limpopo	Kjell Bismeyer, Jann Bader, Laurence Saad	Project Manager & EAP
WULA for the Masodini Private Game Lode, Limpopo	Masodini Private Game Lodge	Environmental Advisor
WULA for the Ezulwini Private Nature Reserve, Limpopo	Ezulwini Investments	Project Manager & EAP
WULA for the Masodini Private Game Lode, Limpopo	Masodini Private Game Lodge	Project Manager & EAP
WULA for the N10 Realignment at the Ilanga SEF, Northern Cape	Karoshhoek Solar One	Project Manager & EAP
WULA for the Kruisvallei Hydroelectric Power Generation Scheme, Free State	Building Energy	Project Manager & EAP
S24G and WULA for the illegal construction of structures within a watercourse on EFF 24 Ruimsig Agricultural Holdings, Gauteng	Sorrow Language Services	Project Manager & EAP

HOUSING AND URBAN PROJECTS

Basic Assessments

Project Name & Location	Client Name	Role
Postmasburg Housing Development, Northern Cape	Transnet	Project Manager & EAP

Compliance Advice and reporting

Project Name & Location	Client Name	Role
Kampi ya Thude at the Olifants West Game Reserve, Limpopo	Nick Elliot	Environmental Advisor

Project Name & Location	Client Name	Role
External Compliance Audit of WUL for the Johannesburg Country Club, Gauteng	Johannesburg Country Club	Project Manager

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
Due Diligence Audit for the Due Diligence Audit Report, Gauteng	Delta BEC (on behalf of Johannesburg Development Agency (JDA))	Project Manager

ENVIRONMENTAL MANAGEMENT TOOLS

Project Name & Location	Client Name	Role
Development of the 3rd Edition Environmental Implementation Plan (EIP)	Gauteng Department of Agriculture and Rural Development (GDARD)	Project Manager & EAP
Development of Provincial Guidelines on 4x4 routes, Western Cape	Western Cape Department of Environmental Affairs and Development Planning	EAP
Compilation of Construction and Operation EMP for the Braamhoek Transmission Integration Project, Kwazulu-Natal	Eskom Holdings	Project Manager & EAP
Compilation of EMP for the Wholesale Trade of Petroleum Products, Gauteng	Munaca Technologies	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for Medupi Power Station, Limpopo	Eskom Holdings	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for the Dube TradePort Site Wide Precinct	Dube TradePort Corporation	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for the Kusile Power Station, Mpumalanga	Eskom Holdings	Project Manager & EAP
Review of Basic Assessment Process for the Wittekleibosch Wind Monitoring Mast, Eastern Cape	Exxaro Resources	Project Manager & EAP
Revision of the EMPr for the Sirius Solar PV	Aurora Power Solutions	Project Manager & EAP
State of the Environment (SoE) for Emalahleni Local Municipality, Mpumalanga	Simo Consulting on behalf of Emalahleni Local Municipality	Project Manager & EAP
Aspects and Impacts Register for Salberg Concrete Products operations	Salberg Concrete Products	EAP
First State of Waste Report for South Africa	Golder on behalf of the Department of Environmental Affairs	Project Manager & EAP
Responsibilities Matrix and Gap Analysis for the Kruisvallei Hydroelectric Power Generation Scheme, Free State Province	Building Energy	Project Manager
Responsibilities Matrix and Gap Analysis for the Roggeveld Wind Farm, Northern & Western Cape Provinces	Building Energy	Project Manager

PROJECTS OUTSIDE OF SOUTH AFRICA

Project Name & Location	Client Name	Role
Advisory Services for the Zizabona Transmission Project, Zambia, Zimbabwe, Botswana & Namibia	PHD Capital	Advisor
EIA for the Semonkong WEF, Lesotho	MOSCET	Project Manager & EAP
EMP for the Kuvaninga Energia Gas Fired Power Project, Mozambique	ADC (Pty) Ltd	Project Manager & EAP
Environmental Screening Report for the SEF near Thabana Morena, Lesotho	Building Energy	EAP
EPBs for the Kawambwa, Mansa, Mwense and Nchelenge SEFs in Luapula Province, Zambia	Building Energy	Project Manager & EAP
ESG Due Diligence for the Hilton Garden Inn Development in Windhoek, Namibia	Vatange Capital	Project Manager
Mandahill Mall Rooftop PV SEF EPB, Lusaka, Zambia	Building Energy	Project Manager & EAP
Monthly ECO for the PV Power Plant for the Mocuba Power Station	Scatec	Project Manager



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

EAP Company Name:	Savannah Environmental (Pty) Ltd		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	2	Percentage Procurement recognition
			125%
EAP name:	Jo-Anne Thomas		
EAP Qualifications:	M.Sc. Botany		
Professional affiliation/registration:	South African Council for Natural Scientific Professions		
Physical address:	First floor, Block 2 5 Woodlands Drive Office Park C/o Woodlands Drive & Western Service Road Woodmead Johannesburg 2191		
Postal address:	PO Box 148 Sunninghill		
Postal code:	2157	Cell:	082-775-5628
Telephone:	011-656-3237	Fax:	086-684-0547
E-mail:	joanne@savannahsa.com		

The appointed EAP must meet the requirements of Regulation 13 of GN R982 of 04 December 2014, as amended.

2. DECLARATION BY THE EAP

I, Jo-Anne Thomas, declare that –

- I act as the independent environmental assessment practitioner in this application;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I will take into account, to the extent possible, the matters listed in Regulation 13 of the Regulations when preparing the application and any report relating to the application;
- I undertake to disclose to the applicant and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of Regulation 48 and that a person convicted of an offence in terms of Regulation 48(1) is liable to the penalties as contemplated in Section 49B of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;
- I have a vested interest in the proposed activity proceeding, such vested interest being:

J Thomas

Signature of the Environmental Assessment Practitioner

Savannah Environmental (Pty) Ltd

Name of Company:

20/03/19

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, *Jo-Anne Thomas*, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

J Thomas

Signature of the Environmental Assessment Practitioner

Savannah Environmental (Pty) Ltd

Name of Company

20/03/19

Date

Signature of the Commissioner of Oaths

Date

I herewith certify that I have scrutinised the original document of which this is a copy and that: The original document shows no signs of erasure or alterations. The copy is a complete and true copy of the original document.	
Sign	<i>N Reddy</i> 9095919
Commissioner of Oaths Ex Officio	
Nathan Reddy	
Capacity	Hosting Manager
Address	3 Edison Crescent, Sunninghill Village, Sandton, 2001
Date	<i>20/03/2019</i>
Sunninghill 5249 Absa Bank Ltd	

CURRICULUM VITAE OF LISA OPPERMAN

Profession :	Environmental Assessment Practitioner and GIS Consultant
Specialisation:	Environmental Impact Assessments, Basic Assessments, Site Screening and Site Selection reporting, compilation of maps through the use of ArcGIS
Work Experience:	4 years of experience in the environmental management and GIS field

VOCATIONAL EXPERIENCE

Lisa Opperman has four years of experience in the environmental field. She has worked on a variety of EIA processes including renewable energy projects, as well as industrial developments. She has also been involved in the undertaking of public participation for projects located in South Africa which has included the undertaking of public meetings, focus group meetings and key stakeholder meetings in both Afrikaans and English. She also has experience in working with ArcGIS 10 for the compilation of maps, the manipulation of data and screening for environmental sensitivities within areas with the potential for development.

SKILLS BASE AND CORE COMPETENCIES

- GIS Mapping
- EIA Report Writing
- Conducting of public involvement processes
- Administrative tasks
- Analysis and manipulation of geographical information and technical experience with the use of ArcGIS

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- B.Sc. (Hons) Environmental Management (2014), North-West University, Potchefstroom
- B.A Psychology, Geography and Environmental Studies (2013), North-West University, Potchefstroom

Courses:

- Environmental Legal Compliance and Auditing (2017), Janice Tooley at the Protea Hotel OR Thambo, Johannesburg

EMPLOYMENT

Date	Company	Roles and Responsibilities
February 2015 – current	Savannah Environmental (Pty) Ltd	Environmental Assessment Practitioner and GIS Consultant <i>Tasks include: Compilation of Environmental Scoping Reports, Plan of Study, Environmental Impact Assessment Reports, Basic Assessments and Environmental management programmes; Environmental Screening Reports; Specialist management; project proposals and tenders; Client liaison and Marketing; Process EIA Applications, GIS Mapping and data analysis and manipulation</i>

PROJECT EXPERIENCE**Renewable Power Generation Projects: Solar Energy Facilities****Screening Studies**

Project Name & Location	Client Name	Role
<i>Pre-feasibility Desktop Screening and Fatal Flaw Scan for a Solar PV Project near Lichtenburg, North West Province</i>	ABO Wind AG	<i>EAP and GIS Consultant</i>
<i>Pre-feasibility Desktop Screening and Fatal Flaw Scan for a Solar PV Project neat Aggeneys, Northern Cape Province</i>	ABO Wind AG	<i>EAP and GIS Consultant</i>

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
<i>Buffels PV 1 & Buffels PV 2 Solar Energy Facilities near Orkney, North West</i>	<i>Kabi Solar</i>	<i>EAP and GIS Consultant</i>
<i>Woodhouse Solar 1 & Woodhouse Solar 2 PV Facilities near Vryburg, North West</i>	<i>Genesis Eco-Energy Developments</i>	<i>EAP and GIS Consultant</i>
<i>Orkney Solar Farm, North West</i>	<i>Genesis Eco-Energy Developments</i>	<i>EAP and GIS Consultant</i>
<i>Tewa Isitha Solar 1 & Tewa Isitha Solar 2 PV facilities near Upington, Northern Cape</i>	<i>AfriCoast Energy</i>	<i>EAP and GIS Consultant</i>
<i>Lichtenburg 1, Lichtenburg 2 and Lichtenburg 3 PV Facilities, near Lichtenburg, North West Province (EIA Phase)</i>	ABO Wind AG	<i>EAP and GIS Consultant</i>

Basic Assessments

Project Name & Location	Client Name	Role
<i>Harmony Gold 3x PV Facilities, Welkom, Free State</i>	BBEntropie	<i>EAP and GIS Consultant</i>

Renewable power generation projects: Wind Energy Facilities

Screening Studies

Project Name & Location	Client Name	Role
<i>Juno Wind Farm Screening Assessment Report near Lamberts Bay, Western Cape Province</i>	<i>AMDA Developments</i>	<i>EAP and GIS Consultant</i>
<i>Lamberts Bay Wind Farm Screening Assessment Report near Lamberts Bay, Western Cape Province</i>	<i>Windy World</i>	<i>EAP and GIS Consultant</i>
<i>Pre-feasibility Desktop Screening and Fatal Flaw Scan for the Kudusberg and Rondekop Wind Energy Facilities, Northern Cape and Western Cape Provinces</i>	<i>ABO Wind AG</i>	<i>EAP and GIS Consultant</i>
<i>Pre-feasibility Desktop Screening and Fatal Flaw Scan for Wind Projects near Touws River, Western Cape Province</i>	<i>ABO Wind AG</i>	<i>EAP and GIS Consultant</i>

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
<i>Boulders Wind Farm, Western Cape Province</i>	<i>Vredenburg Windfarm</i>	<i>EAP and GIS Consultant</i>
<i>Namas Wind Farm, Northern Cape Province</i>	<i>Genesis Namas Wind (Pty) Ltd</i>	<i>EAP and GIS Consultant</i>
<i>Zonnequa Wind Farm, Northern Cape Province</i>	<i>Genesis Zonnequa Wind (Pty) Ltd</i>	<i>EAP and GIS Consultant</i>

Grid Infrastructure Projects

Basic Assessments

Project Name & Location	Client Name	Role
<i>132/11kV Olifantshoek Substation and Power Line, Northern Cape</i>	<i>Eskom</i>	<i>EAP and GIS Consultant</i>
<i>Grid connection infrastructure for the Namas Wind Farm, Northern Cape Province</i>	<i>Genesis Namas Wind (Pty) Ltd</i>	<i>EAP and GIS Consultant</i>
<i>Grid connection infrastructure for the Zonnequa Wind Farm, Northern Cape Province</i>	<i>Genesis Zonnequa Wind (Pty) Ltd</i>	<i>EAP and GIS Consultant</i>

Gas Projects

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
<i>Richards Bay Combined Cycle Power Plant (CCPP) power plant, KwaZulu-Natal (Scoping Phase)</i>	<i>Eskom</i>	<i>EAP (assistance) and GIS Consultant</i>

Basic Assessments

Project Name & Location	Client Name	Role
<i>Neopak Combined Heat and Power (CHP) Plant, Rosslyn, Gauteng</i>	<i>Neopak</i>	<i>EAP, Public Participation and GIS Consultant</i>

Screening Studies

Project Name & Location	Client Name	Role
<i>Richards Bay Combined Cycle Power Plant (CCPP) power plant, near Richards Bay, KwaZulu-Natal</i>	<i>Eskom</i>	<i>EAP and GIS Consultant</i>

Infrastructure Development Projects (bridges, pipelines, roads, etc)

Basic Assessments

Project Name & Location	Client Name	Role
Water Treatment Plant at the Neopak Facility, Rosslyn, Gauteng	Neopak	EAP, Public Participation and GIS Consultant

Housing and Urban Projects

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Metals Industrial Cluster near Kuruman, Northern Cape	Northern Cape Department of Economic Development and Tourism	EAP and GIS Consultant

Environmental Management Tools

Environmental Management Programmes

Project Name & Location	Client Name	Role
Environmental Management Programme (EMPr) for the Nxuba Wind Farm, Eastern Cape	ACED	EAP
Operation Environmental Management Programme (EMPr) for Phase 1 of the Amakhala Emoyeni Wind Energy Facility, Eastern Cape	Cennergi	EAP
Operation Environmental Management Programme (EMPr) for the Tsitsikamma Community Wind Energy Facility, Eastern Cape Province	Cennergi	EAP
Environmental Management Programme (EMPr) for the Skuitdrift 1 Solar PV Energy Facility near Augrabies, Northern Cape Province	Building Energy South Africa	EAP and GIS Consultant
Environmental Management Programme (EMPr) for the Skuitdrift 2 Solar PV Energy Facility near Augrabies, Northern Cape Province	Building Energy South Africa	EAP and GIS Consultant

Environmental and Social Management System (ESMS)

Project Name & Location	Client Name	Role
Preparation of Policies and Plans for the Roggeveld Wind Farm, Western Cape Province	Building Energy South Africa	EAP assistance
Preparation of Policies and Plans for the Kruisvallei Hydro Scheme, Free State Province	Building Energy South Africa	EAP assistance

CURRICULUM VITAE OF NICOLENE VENTER

Profession :	Public Participation and Social Consultant
Specialisation:	Public participation process; stakeholder engagement; facilitation (workshops, focus group and public meetings; public open days; steering committees); monitoring and evaluation of public participation and stakeholder engagement processes
Work Experience:	21 years' experience as a Public Participation Practitioner and Stakeholder Consultant

VOCATIONAL EXPERIENCE

Over the past 21 years Nicolene established herself as an experienced and well recognised public participation practitioner, facilitator and strategic reviewer of public participation processes. She has experience in managing public participation projects and awareness creation programmes. Her experience includes designing and managing countrywide public participation and awareness creation projects, managing multi-project schedules, budgets and achieving project goals. She has successfully undertaken several public participation processes for EIA, BA and WULA projects. The EIA and BA process include linear projects such as the NMPP, Eskom Transmission and Distribution power lines as well as site specific developments such as renewable energy projects i.e. solar, photo voltaic and wind farms. She also successfully managed stakeholder engagement projects which were required to be in line with the Equator Principles.

SKILLS BASE AND CORE COMPETENCIES

- Project Management
- Public Participation, Stakeholder Engagement and Awareness Creation
- Public Speaking and Presentation Skills
- Facilitation (workshops, focus group meetings, public meetings, public open days, working groups and committees)
- Social Assessments (Stakeholder Analysis / Stakeholder Mapping)
- Monitoring and Evaluation of Public Participation and Stakeholder Engagement Processes
- Community Liaison
- IFC Performance Standards
- Equator Principles
- Minute taking, issues mapping, report writing and quality control

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- Higher Secretarial Certificate, Pretoria Technicon (1970)

Short Courses:

- Techniques for Effective Public Participation, International Association for Public Participation, IAP2 (2008)
- Foundations of Public Participation (Planning and Communication for Effective Public Participation, IAP2 (2009)
- Certificate in Public Relations, Public Relation Institute of South Africa, Damelin Management School (1989)

Professional Society Affiliations:

- Board Member of International Association for Public Participation (IAP2): Southern Africa

EMPLOYMENT

Date	Company	Roles and Responsibilities
<p>November 2018 – current</p>	<p>Savannah Environmental (Pty) Ltd</p>	<p>Public Participation and Social Consultant</p> <p><u>Tasks include:</u></p> <p><i>Tasks include: Drafting of a Public Participation Plan with key deliverable dates and methodology to be followed, Background Information Document, Letters to Stakeholders and Interested and/or Affected Parties (I&APs) inclusive of key project deliverables and responses to questions / concerns raised; Stakeholder identification; facilitating stakeholder workshops, focus group and public meetings; conduct one-on-one consultation with Community Leaders, Tribal Chiefs, affected landowners, etc.</i></p> <p><i>Managing interaction between Stakeholders and Team Members, liaising with National, Provincial and Local Authorities, managing community consultation and communications in project affected areas, attend to the level of technical information communicated to and consultation with all level of stakeholders involved.</i></p>
<p>2016 – October 2018</p>	<p>Imaginative Africa (Pty) Ltd (company owned by Nicolene Venter)</p>	<p>Independent Consultant</p> <p>Consulting to various Environmental Assessment Practitioners for Public Participation and Stakeholder Engagements:</p> <p><u>Tasks include:</u></p> <p><i>Tasks include: Drafting of a Public Participation Plan with key deliverable dates and methodology to be followed, Background Information Document, Letters to Stakeholders and Interested and/or Affected Parties (I&APs) inclusive of key project deliverables and responses to questions / concerns raised; Stakeholder identification; facilitating stakeholder workshops, focus group and public meetings; conduct one-on-one consultation with Community Leaders, Tribal Chiefs, affected landowners, etc.</i></p> <p><i>Managing interaction between Stakeholders and Team Members, liaising with National, Provincial and Local Authorities, managing community consultation and communications in project</i></p>

		<p>affected areas, attend to the level of technical information communicated to and consultation with all level of stakeholders involved</p> <p><u>Clients:</u> SiVEST Environmental, Savannah Environmental, Baagi Environmental; Royal Haskoning DHV (previously SSI)</p>
2013 - 2016	<p>Zitholele Consulting</p> <p>Contact person: Dr Mathys Vosloo Contact number: 011 207 2060</p>	<p>Senior Public Participation Practitioner and Project Manager</p> <p><u>Tasks included:</u> Project managed public participation process for EIA/BA/WULA/EAL projects. Manages two Public Participation Administrators. Public Participation tasks as outlined as above and including financial management of public participation processes.</p>
2011 - 2013	<p>Imaginative Africa (Pty) Ltd (company owned by Nicolene Venter)</p>	<p>Independent Consultant Consulting to various Environmental Assessment Practitioners for Public Participation and Stakeholder Engagements</p> <p><u>Tasks included:</u> Drafting of a Public Participation Plan with key deliverable dates and methodology to be followed, Background Information Document, Letters to Stakeholders and Interested and/or Affected Parties (I&APs) inclusive of key project deliverables and responses to questions / concerns raised; Stakeholder identification; facilitating stakeholder workshops, focus group and public meetings; conduct one-on-one consultation with Community Leaders, Tribal Chiefs, affected landowners, etc.</p> <p>Managing interaction between Stakeholders and Team Members, liaising with National, Provincial and Local Authorities, managing community consultation and communications in project affected areas, attend to the level of technical information communicated to and consultation with all level of stakeholders involved</p> <p><u>Clients:</u> Bohlweki Environmental, Bemani Sustainability (Pty) Ltd; Naledzi Environmental</p>
2007 – 2011	<p>SiVEST SA (Pty) Ltd</p> <p>Contact person: Andrea Gibb Contact number: 011 798 0600</p>	<p>Unit Manager: Public Participation Practitioner</p> <p><u>Tasks included:</u> Project managed public participation process for EIA/BA projects. Manages two Junior Public Participation Practitioners. Public Participation</p>

		tasks as outlined as above and including financial management of public participation processes.
2005 – 2006	Imaginative Africa (Pty) Ltd (company owned by Nicolene Venter)	<p>Independent Consultant Public Participation and Stakeholder Engagement Practitioner</p> <p><u>Tasks included:</u> Drafting of a Public Participation Plan with key deliverable dates and methodology to be followed, Background Information Document, Letters to Stakeholders and Interested and/or Affected Parties (I&APs) inclusive of key project deliverables and responses to questions / concerns raised; Stakeholder identification; facilitating stakeholder workshops, focus group and public meetings; conduct one-on-one consultation with Community Leaders, Tribal Chiefs, affected landowners, etc.</p> <p>Managing interaction between Stakeholders and Team Members, liaising with National, Provincial and Local Authorities, managing community consultation and communications in project affected areas, attend to the level of technical information communicated to and consultation with all level of stakeholders involved.</p> <p><u>Clients:</u> Manyaka-Greyling-Meiring (previously Greyling Liaison and currently Golder Associates)</p>
1997 - 2004	Imaginative Africa (Pty) Ltd (company owned by Nicolene Venter)	<p>Independent Consultant: Public Participation Practitioner.</p> <p><u>Tasks included:</u> Drafting of a Public Participation Plan with key deliverable dates and methodology to be followed, Background Information Document, Letters to Stakeholders and Interested and/or Affected Parties (I&APs) inclusive of key project deliverables and responses to questions / concerns raised; Stakeholder identification; facilitating stakeholder workshops, focus group and public meetings; conduct one-on-one consultation with Community Leaders, affected landowners, etc.</p> <p>Managing interaction between Stakeholders and Team Members, liaising with National, Provincial Local Authorities, managing community consultation and communications in project affected areas, attend to the level of technical</p>

		<p>information communicated to and consultation with all level of stakeholders involved.</p> <p><u>Clients:</u> Greyling Liaison (currently Golder Associates); Bembani Sustainability (Pty) Ltd; Lidwala Environmental; Naledzi Environmental</p>
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PROJECT EXPERIENCE

RENEWABLE POWER GENERATION PROJECTS: PHOTOVOLTAIC SOLAR ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Lichtenburg PVs (3 PVs) & Power Lines (grid connection), Lichtenburg, North West Province	Atlantic Energy Partners EAP: Savannah Environmental	Project Manage the Public Participation Process Facilitate all meetings Consultation with Government Officials, Key Stakeholders, Landowners & Community Leaders
Allepad PVs 4 PVs) & Power Lines (grid connection), Upington, Northern Cape Province	IL Energy EAP: Savannah Environmental	
Hyperion Solar PV Developments (4 PVs) and Associated Infrastructures, Kathu, Northern Cape Province	Building Energy EAP: Savannah Environmental	
Aggeneys Solar PV Developments (2 PVs) and Associated Infrastructures, Aggeneys, Northern Cape Province	Atlantic Energy Partners and ABO Wind EAP: Savannah Environmental	

Project Name & Location	Client Name	Role	
<p>Tlitseng PV, including Substations & Power Lines, Lichtenburg, North West Province</p> <p>Sendawo PVs, including Substations & Power Lines, Vryburg, North West Province</p> <p>Helena Solar 1, 2 and 3 PVs, Copperton, Northern Cape Province</p>	<p>BioTherm Energy EAP: SiVEST</p>	Public Participation, Landowner and Community Consultation	
Farm Spes Bona 23552 Solar PV Plants, Bloemfontein, Free State Province	Surya Power EAP: SiVEST		Public Participation, Landowner and Community Consultation
<p>De Aar Solar Energy Facility, De Aar, Northern Cape Province</p> <p>Droogfontein Solar Energy Facility, Kimberley, Northern Cape Province</p> <p>Kaalspruit Solar Energy Facility, Loeriesfontein, Northern Cape Province</p> <p>Platsjambok East PV, Prieska, Northern Cape Province</p>	<p>South Africa Mainstream Renewable Power Developments EAP: SiVEST</p>		Public Participation, Landowner and Community Consultation
Renosterburg PV, De Aar, Northern Cape Province	Renosterberg Wind Energy Company EAP: SiVEST	Public Participation, Landowner and Community Consultation	

19MW Solar Power Plant on Farm 198 (Slypklip), Danielskuil, Northern Cape Province	Solar Reserve South Africa EAP: SiVEST	Public Participation, Landowner and Community Consultation
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Basic Assessments and Environmental Management Programmes – Located within the Renewable Energy Development Zones (REDZ)

Project Name & Location	Client Name	Role
Moeding Solar PV Solar Energy Facility, Vryburg, North West Province	Kabi Solar EAP: Savannah Environmental	Project Manage the Public Participation Process Facilitate all meetings Consultation with Government Officials, Key Stakeholders, Landowners & Community Leaders
Sirius Solar PV Solar Energy Facility, Upington, Northern Cape Province	SOLA Future Energy EAP: Savannah Environmental	

RENEWABLE POWER GENERATION PROJECTS: WIND ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Aletta Wind Farm, Copperton, Northern Cape Province	BioTherm Energy EAP: SiVEST	Public Participation
Eureka Wind Farm, Copperton, Northern Cape Province		
Loeriesfontein Wind Farm, Loeriesfontein, Northern Cape Province	South Africa Mainstream Renewable Power Developments EAP: SiVEST	Public Participation
Droogfontein Wind Farm, Loeriesfontein, Northern Cape Province		
Four Leeuwberg Wind Farms, Loeriesfontein, Northern Cape Province		
Noupoort Wind Farm, Noupoort, Northern Cape Province		
Mierdam PV & Wind Farm, Prieska, Northern Cape Province		
Platsjambok West Wind Farm & PV, Prieska, Northern Cape Province		

Basic Assessments and Environmental Management Programmes – Located within the Renewable Energy Development Zones (REDZ)

Project Name & Location	Client Name	Role
Nama Wind Energy Facility, Northern Cape Province	Genesis ECO EAP: Savannah Environmental	Project Manage the Public Participation Process Facilitate all meetings Consultation with Government Officials, Key Stakeholders, Landowners & Community Leaders
Zonnequa Wind Energy Facility, Northern Cape Province		

Environmental Authorisation Amendments

Project Name & Location	Client Name	Role
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Beaufort West 280MW Wind Farm into two 140MW Trakas and Beaufort West Wind Farms, Western Cape	South Africa Mainstream Renewable Power Developments EAP: SiVEST	Public Participation
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RENEWABLE POWER GENERATION PROJECTS: CONCENTRATED SOLAR FACILITIES (CSP)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Upington Concentrating Solar Plant and associated Infrastructures, Northern Cape Province	Eskom Holdings EAP: Bohlweki Environmental	Public Participation

GRID INFRASTRUCTURE PROJECTS

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Pluto-Mahikeng Main Transmission Substation and 400kV Power Line (Carletonville to Mahikeng), Gauteng and North West Provinces	Eskom Holdings EAP: Baagi Environmental	
Thyspunt Transmission Lines Integration Project, Eastern Cape Province	Eskom Holdings EAP: SiVEST	Public Participation, Landowner and Community Consultation
Westrand Strengthening Project, Gauteng Province		
Mookodi Integration Project, North-West Province		Public Participation,
Transnet Coallink, Mpumalanga and KwaZulu-Natal Provinces		
Delarey-Kopela-Phahameng Distribution power line and newly proposed Substations, North-West Province		Public Participation, Landowner and Community Consultation
Invubu-Theta 400kV Eskom Transmission Power Line, KwaZulu-Natal Province	Eskom Holding EAP: Bembani Environmental	

Facilitation

Project Name & Location	Client Name	Meeting Type
Bloemfontein Strengthening Project, Free State Province	Eskom Holdings EAP: Baagi Environmental	Public Meetings
Moidraai-Smitkloof 132kV Power Line and Substation, Northern Cape Province	Eskom Holdings EAP: SSI	Focus Group Meetings
Aggeneis-Oranjemond 400kV Eskom Transmission Power Line, Northern Cape Province	Eskom Holdings EAP: Savannah Environmental	Focus Group Meetings & Public Meetings
Ariadne-Eros 400kV/132kV Multi-Circuit Transmission Power Line (Public Meetings)	Eskom Holdings EAP: ACER Africa	Public Meetings
Majuba-Venus 765kV Transmission Power Lines, Mpumlanaga Province		Public Meetings

Basic Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
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Melkhout-Kudu-Grassridge 132kV Power Line Project (project not submitted to DEA), Eastern Cape Province	Eskom Holdings EAP: SiVEST	Public Participation, Landowner and Community Consultation
Tweespruit-Welroux-Driedorp-Wepener 132Kv Power Line, Free State Province		Public Participation, Landowner and Community Consultation
Kuruman 132Kv Power Line Upgrade, Northern Cape Province	Eskom Holdings EAP: Zitholele	Public Participation, Landowner and Community Consultation
Vaalbank 132Kv Power Line, Free State Province		Public Participation, Landowner and Community Consultation
Pongola-Candover-Golela 132kV Power Line (Impact Phase), KwaZulu-Natal Province		Public Participation, Landowner and Community Consultation
Ndumo-Geziza 132kV Power Line, KwaZulu-Natal Province		Public Participation, Landowner and Community Consultation
		Public Participation, Landowner and Community Consultation

Screening Studies

Project Name & Location	Client Name	Role
Potential Power Line Alternatives from Humansdorp to Port Elizabeth, Eastern Cape Province	Nelson Mandela Bay Municipality EAP: SiVEST	Social Assessment

CONVENTIONAL POWER GENERATION PROJECTS (COAL, GAS AND ASSOCIATED INFRASTRUCTURE)

Stakeholder Engagement

Project Name & Location	Client Name	Role
Determination, Review and Implementation of the Reserve in the Olifants/Letaba System	Department of Water and Sanitation	Secretarial Services
Orange River Bulk Water Supply System	Golder Associates	
Levuvu-Letaba Resources Quality Objectives		

Facilitation

Project Name & Location	Client Name	Meeting Type
Thabametsi IPP Power Station, Limpopo Province	Thabametsi Power Company EAP: Savannah Environmental	Focus Group Meeting & Public Meeting

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Richards Bay Combined Cycle Power Plant, Richards Bay, Kwa-Zulu Natal Province (Impact Phase)	Eskom Holdings EAP: Savannah Environmental	Public Participation
Medupi Flue Gas Desulphurisation Project (up to completion of Scoping Phase), Limpopo Province	Eskom Holdings SOC Ltd EAP: Zitholele Consulting	Public Participation, Landowner and Community Consultation
Kendal 30-year Ash Disposal Facility, Mpumalanga Province		
Kusile 60-year Ash Disposal Facility, Mpumalanga Province		

Camden Power Station Ash Disposal Facility, Mpumalanga Province		
Tutuka Fabric Filter Retrofit and Dust Handling Plant Projects, Mpumalanga Province	Eskom Holdings SOC Ltd EAP: Lidwala Environmental	Public Participation, Landowner and Community Consultation
Eskom's Majuba and Tutuka Ash Dump Expansion, Mpumalanga Province		Public Participation, Landowner and Community Consultation
Hendrina Ash Dam Expansion, Mpumalanga Province		Public Participation, Landowner and Community Consultation

INFRASTRUCTURE DEVELOPMENT PROJECTS (BRIDGES, PIPELINES, RAILWAY LINES, ROADS, WATER RESOURCES, STORAGE FACILITIES, ETC)

Facilitation

Project Name & Location	Client Name	Meeting Type
Determination, Review and Implementation of the Reserve in the Olifants/Letaba System	Department of Water and Sanitation Golder Associates	Secretarial Services
Orange River Bulk Water Supply System	Department of Water and Sanitation Golder Associates	Secretarial Services
Levuvu-Letaba Resources Quality Objectives	Department of Water and Sanitation Golder Associates	Secretarial Services
SmancorCR Chemical Plant (Public Meeting), Gauteng Province	Samancor Chrome (Pty) Ltd EAP: Environmental Science Associates	Public Meeting
SANRAL N4 Toll Highway Project (2 nd Phase), Gauteng & North West Provinces	Department of Transport EAP:	Public Meetings

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Transnet's New Multi-Products Pipeline traversing Kwa-Zulu Natal, Free State and Gauteng Provinces	Transnet EAP: Bohlweki Environmental	Public Participation

Basic Assessments

Project Name & Location	Client Name	Role
Realignment of the Bulshoek Dam Weir near Klaver and the Doring River Weir near Clanwilliam, Western Cape Province	Dept of Water and Sanitation EAP: Zitholele	Public Participation

MINING SECTOR

Environmental Impact Assessment and Environmental Management Programme

Project Name & Location	Client Name	Role
Zero Waste Recovery Plant at highveld Steel, Mpumalanga Province	Anglo African Metals EAP: Savannah Environmental	Public Participation
Koffiefontein Slimes Dam, Free State Province	Petra Diamond Mines EAP: Zitholele	Public Participation

<i>Baobab Project: Ethenol Plant, Chimbanje, Middle Sabie, Zimbabwe</i>	<i>Applicant: Green Fuel EAP: SiVEST</i>	<i>Public Participation & Community Consultation</i>
<i>BHP Billiton Energy Coal SA's Middelburg Water Treatment Plant, Mpumalanga</i>	<i>BHP Billiton Group EAP: Jones & Wagener</i>	<i>Public Participation</i>





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number: NEAS Reference Number: Date Received:	(For official use only)
	DEA/EIA/

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

<p>Postal address: Department of Environmental Affairs Attention: Chief Director: Integrated Environmental Authorisations Private Bag X447 Pretoria 0001</p> <p>Physical address: Department of Environmental Affairs Attention: Chief Director: Integrated Environmental Authorisations Environment House 473 Steve Biko Road Arcadia</p> <p>Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at: Email: EIAAdmin@environment.gov.za</p>


1. SPECIALIST INFORMATION

Specialist Company Name:	Airshed Planning Professionals (Pty) Ltd		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
Specialist name:	Theresa Bird		
Specialist Qualifications:	PhD		
Professional affiliation/registration:	Pr.Sci.Nat NACA		
Physical address:	480 Smuts drive, Halfway Gardens, Midrand		
Postal address:	PO Box 5260, Halfway House, 1685		
Postal code:	1685	Cell:	
Telephone:	011-805-1940	Fax:	086-216-7771
E-mail:	terri@airshed.co.za		

2. DECLARATION BY THE SPECIALIST

I, Theresa Bird, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.


Signature of the Specialist

Airshed Planning Professionals (Pty) Ltd.

Name of Company:

18/02/2019

Date

Details of Specialist, Declaration and Undertaking Under Oath

1. SPECIALIST INFORMATION

Specialist Company Name:	Promethium Carbon (Pty) Ltd		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
Specialist name:	Robbie Louw		
Specialist Qualifications:	BSc Chemical Engineering ; BCom (Hons) Economics		
Professional affiliation/registration:			
Physical address:	eTravel House, 23 Eaton Avenue Bryanston		
Postal address:	PO Box 131253, Bryanston, 2021		
Postal code:	2021	Cell:	082 557 8646
Telephone:	011 706 8185	Fax:	086 589 3466
E-mail:	robbie@promethium.co.za		

2. DECLARATION BY THE SPECIALIST

I, Robbie Louw, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Promethium Carbon

Name of Company:

28 February 2019

Date



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.P

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

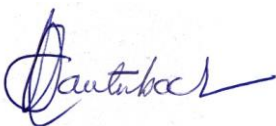
1. SPECIALIST INFORMATION

Specialist Company Name:	Rautenbach Biodiversity Consulting		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)		Percentage Procurement recognition
Specialist name:	Anita Rautenbach		
Specialist Qualifications:	MSc. Biological Science		
Professional affiliation/registration:	SACNASP (400725/15)		
Physical address:	13 Killarney Valley road, Cato Ridge, Durban, 3610		
Postal address:	As above		
Postal code:	Cell:	+27 83305 1516	
Telephone:	Fax:		
E-mail:	rabiodiversity@gmail.com		

2. DECLARATION BY THE SPECIALIST

I, Anita Rautenbach, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Rautenbach Biodiversity Consulting

Name of Company:

20/02/2019

Date

Details of Specialist, Declaration and Undertaking Under Oath



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number:	(For official use only)
NEAS Reference Number:	12/12/20/ or 12/9/11/L
Date Received:	DEA/EIA

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Richards Bay Combined Cycle Power Plant (CCPP) and associated infrastructure near Richards Bay, KwaZulu-Natal Province

Specialist:	Geo Hydraulic and Environmental Technology (Pty) Ltd		
Contact person:	John Kalala Ngeleka		
Postal address:	25 Trichy Road, Raisethorpe, Pietermaritzburg		
Postal code:	3102	Cell:	078 884 5263
Telephone:	033 391 0707	Fax:	086 241 1879
E-mail:	info@get-sa.co.za		
Professional affiliation(s) (if any)	South African Council for Natural Scientific Professions		

Project Consultant:	Savannah Environmental (Pty) Ltd		
Contact person:	Jo-Anne Thomas		
Postal address:	PO Box 148, Sunninghill		
Postal code:	2157	Cell:	082-775-5628
Telephone:	011-656-3237	Fax:	086-684-0547
E-mail:	joanne@savannahsa.com		

4.2 The specialist appointed in terms of the Regulations_
John Kalala Ngeleka
I, _____, declare

that -- General declaration:

I act as the independent specialist in this application;

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;

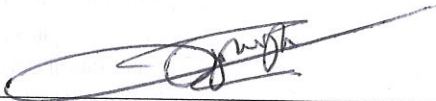
I will comply with the Act, Regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist: _____

Geo Hydraulic and Environmental Technology (Pty) Ltd

Name of company (if applicable): _____

26 January 2018

Date: _____



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.

Kindly note the following:

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Departmental Details

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Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

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Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	The Biodiversity Company		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)		Percentage Procurement recognition
Specialist name:	Wayne Jackson		
Specialist Qualifications:	BSc. Hydrology and Soil Science		
Professional affiliation/registration:	SACNASP Pending/ South African Wetland Society		
Physical address:	26 Morgan Road, Bellevue, Pietermaritzburg		
Postal address:	Same		
Postal code:	3201	Cell:	082 055 3815
Telephone:		Fax:	
E-mail:	wayne@thebiodiversitycompany.com		

2. DECLARATION BY THE SPECIALIST

I, Wayne Jackson, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

The Biodiversity Company

Name of Company:

25 February 2019

Date



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

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Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.P

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Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Techso (Pty) Ltd.		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	2	Percentage Procurement recognition
			125%
Specialist name:	Stephen Mark Fautley		
Specialist Qualifications:	PR Tech Eng.		
Professional affiliation/registration:	ECSA 200270171		
Physical address:	Unit 1B4, The Avenues, Cnr. Raats Drive and Village Walk, Parklands		
Postal address:	Unit 1B4, The Avenues, Cnr. Raats Drive and Village Walk, Parklands		
Postal code:	7441	Cell:	0843007722
Telephone:	0215577730	Fax:	
E-mail:	steve@techso.co.za		

2. DECLARATION BY THE SPECIALIST

I, Stephen Mark Fautley, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Techso (Pty) Ltd

Name of Company:

2019/02/15

Date



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

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NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.

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Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Afzelia Environmental Consultants (Pty) Ltd		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	1	Percentage Procurement recognition
Specialist name:	Jon Marshall		
Specialist Qualifications:	Dip LA.		
Professional affiliation/registration:	Chartered Member of the Landscape Institute (UK). Registered Professional Landscape Architect (South Africa). IAIA		
Physical address:	236 on 9 th Avenue, Windermere, Durban, 4001		
Postal address:	PO Box 37069, Overport, Durban.		
Postal code:	4067	Cell:	
Telephone:	031 303 2835	Fax:	
E-mail:	jon@enviroconsult.co.za		

2. DECLARATION BY THE SPECIALIST

I, Jon Marshall, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Afzelia Environmental Consultants (Pty) Ltd

Name of Company:

7th March 2019

Date

Details of Specialist, Declaration and Undertaking Under Oath



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

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Date Received:	

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PROJECT TITLE

Richards Bay 3 000MW Combined Cycle Power Plant (CCPP) in the Richards Bay Industrial Development Zone (IDZ) Phase 1D, Kwa-Zulu Natal Province.

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Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	The Biodiversity Company		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)		Percentage Procurement recognition
Specialist name:	Andrew Husted		
Specialist Qualifications:	MSc Aquatic Health		
Professional affiliation/registration:	SACNASP Pr Sci Nat		
Physical address:	777 Peridot Street, Jukskei Park		
Postal address:	Same		
Postal code:	2188	Cell:	0813191225
Telephone:		Fax:	
E-mail:	andrew@thebiodiversitycompany.com		

2. DECLARATION BY THE SPECIALIST

I, Andrew Husted, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
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- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

The Biodiversity Company

Name of Company:

25 February 2019

Date

Andrew Husted

M.Sc Aquatic Health (Pr Sci Nat)

Cell: +27 81 319 1225

Email: andrew@thebiodiversitycompany.com

Identity Number: 7904195054081

Date of birth: 19 April 1979

Profile Summary

Extensive experience with many mining projects in South Africa, parts of Africa and also Europe, providing specialist input into ESHIAs and EMPs.

Considerable experience with the project management of national and international multi-disciplinary projects.

Specialist guidance, support and facilitation for the compliance with legislative processes, in South Africa as well as with IFC and the Equator principles.

Expertise with Instream Flow and Ecological Water Requirements.

Provide specialist and technical input for faunal, aquatic ecology and wetland studies.

Areas of Interest

Mining, Renewable Energy & Infrastructure Development Projects, Sustainability and Conservation.

Publication of scientific journals and articles.

Key Experience

- Familiar with World Bank, Equator Principles and the International Finance Corporation requirements
- Environmental, Social and Health Impact Assessments (ESHIA)
- Environmental Management Programmes (EMP)
- Ecological Water Requirement determination experience
- Fish population structure assessments
- The use of macroinvertebrates to determine water quality
- Aquatic Ecological Assessments
- Aquaculture
- Monitoring Programmes

Countries worked in

Botswana
Cameroon
Democratic Republic of Congo
Ghana
Ivory Coast
Liberia
Mali
Mozambique
Republic of Armenia
Senegal
Sierra Leone
South Africa

Nationality

South African

Qualifications

- MSc (University of Johannesburg) – Aquatic Health.
- BSc Honours (Rand Afrikaans University) – Aquatic Health
- BSc Natural Science
- Pr Sci Nat (400213/11)
- Certificate of Competence: Mondri Wetland Assessments
- Certificate of Competence: Wetland WET-Management
- SASS 5 Accredited – Department of Water Affairs and Forestry for the River Health Programme
- EcoStatus application for rivers and streams

RELEVANT PROJECT EXPERIENCE

Project Name: An aquatic and wetland specialist baseline and impact assessment for the proposed Onshore 2D seismic Survey in Block P5-A, in Maputo and Gaza Provinces.

Client: Impacto.

Personal position / role on project: Wetland / Aquatic Specialist.

Location: Maputo & Gaza Provinces, Mozambique (2016).

Main project features: To conduct a dry season (Winter) ecological baseline and impact assessment of the watercourses for the proposed Delonex Energy project.

Project Name: The ecological constraints mapping and Critical Habitat re-evaluation for the Anadarko LNG project: Specialist Consultant to conduct Ecological Studies (Fauna and Habitat) and the delineation of wetland systems.

Client: Anadarko.

Personal position / role on project: Wetland Specialist.

Location: Afungi, Mozambique (2015).

Main project features: To identify and map the ecological constraints is to support contractor activities. To redefine the critical habitats within the project area

Project Name: A Joint Basin Survey of the Upper Orange, Lower Orange and Vaal catchments to determine the current status of the systems: Specialist Consultants to conduct Ecological Studies (Fish, Macroinvertebrate, Diatoms, Water Quality and Habitat) and report on the current status (defining system trends).

Client: ORASECOM.

Personal position / role on project: Specialist Ichthyologist.

Location: South Africa (including Namibia, Botswana & Lesotho) (2015).

Main project features: To determine the current status of the catchments and to discuss the temporal and spatial trends of the monitoring reaches.

Project Name: Ecological baseline assessment of local river systems for the Ntem Iron Ore Mine: Specialist Consultants to Undertake Baseline Studies (Fish, Macroinvertebrate, Water Quality and Habitat).

Client: IMIC.

Personal position / role on project: Senior Ichthyologist.

Location: Cameroon (2013).

Main project features: Establishment of the ecological baseline status and functioning assessment of the local river systems.

Project Name: Instream Flow Requirement determination study for the Kibali River hydropower project: Specialist Consultants to Undertake Baseline Studies (Flow, Water Quality and Geomorphology) and Instream Flow Requirement (IFR) Assessment.

Client: Randgold Resources.

Personal position / role on project: Ichthyologist and IFR.

Location: DRC (2012).

Main project features: Establishment of the ecological flow requirements of fishes within the Kibali River.

Project Name: Cost analysis, including the current and potential earning potential of an aquaculture facility: Specialist Consultants to determine the Cost (Current & Potential Earnings) and the Construction of an identical facility (Physical Costs).

Client: Goldtstone Resources.

Personal position / role on project: Ichthyologist.

Location: Ghana (2012).

Main project features: Conduct a detailed costs analysis of an aquaculture facility for the compensation for the

removal of the operation.

Project Name: Instream Flow Requirement determination study for the Nzoro River hydropower project: Specialist Consultants to Undertake Baseline Studies (Flow, Water Quality and Geomorphology) and Instream Flow Requirement (IFR) Assessment.

Client: Randgold Resources.

Personal position / role on project: Ichthyologist and IFR.

Location: DRC (2011).

Main project features: Establishment of the ecological flow requirements of fishes within the Nzoro River.

Project Name: Environmental study to establish the baseline biological and physical conditions of the Letsibogo Dam.

Client: European Union

Personal position / role on project: Ichthyologist.

Location: Selebi-Phikwe, Botswana (2007 - 2009).

Main project features: Evaluation of the existing fish communities within the Letsibogo Man-made lake with specific consideration of the threats of alien invasive fishes in the lake. The study resulted in the publication of two peer-reviewed papers titled: Comparative behavioural assessment of an established and a new Tigerfish *Hydrocynus vittatus* population in two man-made lakes in the Limpopo (O'Brien et al., 2013) and First observation of Africa Tigerfish (*Hydrocynus vittatus*) predating on Barn Swallows (*Hirundo rustica*) in flight (O'Brien et al., in press).

Project Name: Environmental and Social Impact Assessment of the Kazungula Bridge on the Zambezi River.

Client: Loci on behalf of the Government of Botswana.

Personal position / role on project: Ichthyologist.

Location: Botswana, Zambia, Namibia and Zimbabwe (2009-2010).

Main project features: Evaluation of the current ecological integrity status of various living and non-living components of the Zambezi River ecosystem and the potential ecological and social consequences of the construction and use of the Kazungula Bridge. The study showed that although water quality and habitat modification impacts will occur as a result of the construction and use of the bridge the long term impacts associated with the operation of the bridge should not result in any major impacts to the local aquatic ecosystem.

ACHIEVEMENTS

- Co-founded The Biodiversity Company in 2015 to provide scientific technical services and policy advice to various sectors.
- Successfully tasked by Digby Wells Environmental to establish and develop a company presence in the United Kingdom. This included the staffing and development of offices in London and Jersey.
- Designed and implemented numerous "specific" turnkey items for clients, these have included the design of plant nurseries, aquaculture projects, search and rescue of select flora, re-introduction of fish species into systems and tree marking and counting.
- Managed and developed the Biophysical Department at Digby Wells Environmental to consist of four specialist units, namely: Fauna & Flora, Pedology, Wetlands & Aquatics as well as Rehabilitation.
- The establishment and growth of the Rehabilitation Unit at Digby Wells Environmental which now offers specialist services for all levels of rehabilitation, from management plans, off-set strategies to implementation.

OVERVIEW

An overview of the specialist technical expertise include the following:

- Aquatic ecological state and functional assessments of rivers and dams.
 - Instream Flow Requirement or Ecological Water Requirement studies for river systems.
-

-
- Ecological wetland assessment studies, including the integrity (health) and functioning of the wetland systems.
 - Wetland offset strategy designs.
 - Wetland rehabilitation plans.
 - Monitoring plans for rivers and other wetland systems.
 - Toxicity and metal analysis of water, sediment and biota.
 - Bioaccumulation assessment of fish communities.
 - Fish telemetry assessment that included the translocation of fish as well as the monitoring of fish in order to determine the suitability of the hosting system.
 - Faunal surveys which includes mammals, birds, amphibians and reptiles.
 - The design, compilation and implementation of Biodiversity and Land Management Plans and strategies.

TRAINING

Some of the more pertinent training undergone include the following:

- Wetland and Riparian Delineation Course for Consultants (Certificate of Competence) – DWAF 2008
- The threats and impacts posed on wetlands by infrastructure and development: Mitigation and rehabilitation thereof – Gauteng Wetland Forum 2010
- Ecological State Assessment of Lentic Systems using Fish Population Dynamics – University of Johannesburg/Rivers of Life 2010
- Soil Classification and Wetland Delineation – Terra Soil Science 2010
- Wetland Rehabilitation Methods and Techniques - Gauteng Wetland Forum 2011
- Application of the Fish Response Assessment Index (FRAI) and Macroinvertebrate Response Assessment Index (MIRAI) for the River Health Programme 2011
- Tools for a Wetland Assessment (Certificate of Competence) – Rhodes University 2011

EMPLOYMENT EXPERIENCE

CURRENT EMPLOYMENT: The Biodiversity Company (December 2014 – Present)

I co-founded The Biodiversity Company in 2015, consisting of experienced ecologists who provide technical expertise and policy advice to numerous sectors, such as mining, agriculture, construction and natural resources. The team at The Biodiversity Company have conducted stand-alone specialist studies, and provided overall guidance of studies with a pragmatic approach for the management of biodiversity that takes into account all the relevant stakeholders, most importantly the environment that is potentially affected. We manage risks to the environment to reduce impacts with practical, relevant and measurable methods.

EMPLOYMENT: Digby Wells Environmental (October 2013 – December 2014)

Digby Wells assigned me to the role of Country Manager for the United Kingdom. This was a new endeavour for the company as the company's global footprint continues to increase. The primary responsibilities for the role included the following:

- **Client liaison** to be able to interact more efficiently and personally with current mining clients, mining industry service providers, legal firms and banking institutions in order to introduce Digby Wells as a services provider with the aim of securing work.
 - **Project management** for international projects which may require a presence in the United Kingdom, this was dependent on the location and needs of the client. These projects would mostly be based on the Equator Principles (EP) and International Finance Corporation (IFC) Performance Standards.
 - **Technical input** to provide specialist technical expertise for projects, this included fauna, aquatic ecology, wetlands and rehabilitation. Continued with the design and implementation of Biodiversity and Land Management Plans to assist clients with managing the natural resources. Responsibilities also included the mentorship and management (including reviewing and guiding) other expertise such
-

as flora, fauna and pedology.

EMPLOYMENT: Digby Wells Environmental (March 2012 – September 2013)

Manager of a multi-disciplinary department of scientists providing specialist services in support of national and international requirements as well as best practice guidelines, primarily focussing on the mining sector. In addition to managing the department, I was also expected to contribute specialist services, most notably focusing on water resources. Further responsibilities also included the management of numerous projects on a national or international scale. A general overview of the required responsibilities are as follows:

- **Project management** for single as well as multi-disciplinary studies on a national and international scale. This included legislation and commitments for the respective country being operated in, as well as included the World Bank (WB), EP and IFC requirements.
- **Individual and/or team management** in order to provide mentoring and supportive structures for development and growth in support of the company's strategic objectives.
- **Scientific report writing** to ensure that the relevant standards and requirements have been attained, namely local country legislation, as well as WB, EP and IFC requirements.
- **Report reviewing** in order to ensure compliance and consideration of relevant legislation and guidelines and also quality control.
- **Specialist management** to facilitate the collaboration and integration of specialist skills for the respective projects. This also included the development of Biodiversity and Land Management Plan for clients.
- **Client Resource Manager** for numerous clients in order to establish as well as maintain working relationships.

An overview of the tenure working with the company is provided below:

- **October 2013 – December 2014: London Operations Manager** – Deployed to establish a presence for the company (remote office) in the United Kingdom by means of generating project work to support the employment of staff and operation of a business structure.
- **March 2012 – September 2013: Biophysical Department Manager** – Responsible for the development and growth of the department to consist of four specialist units. This included the development of a new specialist unit, namely Rehabilitation.
- **January 2011 - February 2012: Ecological Unit Manager** – In addition to implementing aquatic and wetland specialist services, the role required the overall management of additional specialist services which included fauna & flora.
- **June 2010 - December 2010: Aquatic Services Manager** – This required the marketing and implementation of specialist programmes for the client base such as biomonitoring and wetland off-set strategies. In addition to this, this also included expanding on the existing skill set to include services such as toxicity, bioaccumulation and ecological flow assessments.
- **August 2008: Aquatic ecologist** – Employed as a specialist to establish the aquatic services within the company. In addition to this, wetland specialist services were added to the existing portfolio.

PREVIOUS EMPLOYMENT: Econ@UJ (University of Johannesburg)

- June 2007 – July 2008: Junior aquatic ecologist
 - Researcher
 - Technical assistant for fieldwork
 - Reporting writing
 - Project management

GENERAL SKILLS

Literacy

Read, write and speak English fluently. Read, write and speak Afrikaans.

	Basic German.
Generic	Advanced user of Microsoft Office applications.
Mapping	Introductory skill level for ArcGIS and Quantum GIS.
ADDITIONAL EXPERIENCE	
Compliance audits	Conducting site investigations in order to determine the level of compliance attained, ensuring that the client maintains an appropriate measure of compliance with environmental regulations by means of a legislative approach
Control officer	Acting as an independent Environmental Control Officer (ECO), acting as a quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts
Screening studies	Project investigations in order to determine the level of complexity for the environmental and social studies required for a project. This is a form of risk assessment to guide the advancement of the project.
Public consultation	The provision of specialist input in order to communicate project findings as well as assist with providing feedback if and when required.
Water use licenses	Consultation with the relevant authorities in order to establish the project requirements, as well as provide specialist (aquatics/wetland) input for the application in order to achieve authorisation.
Closure	Primarily the review of closure projects, with emphasis on the closure cost calculations. Support was also provided by assisting with the measurements of structures during fieldwork.
Visual	The review of visual studies as well as the collation of field data to be considered for the visual interpretation for the project.

ACADEMIC QUALIFICATIONS

University of Johannesburg, Johannesburg, South Africa (2009): MAGISTER SCIENTIAE (MSc) - Aquatic Health:

Title: *Aspects of the biology of the Bushveld Smallscale Yellowfish (Labeobarbus polylepis): Feeding biology and metal bioaccumulation in five populations.*

Rand Afrikaans University (RAU), Johannesburg, South Africa (2004): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Zoology

Rand Afrikaans University (RAU), Johannesburg, South Africa (2001 - 2004): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Zoology and Botany.

PUBLICATIONS

Tate RB and Husted, A. 2015. Aquatic Biomonitoring in the upper reaches of the Boesmanspruit, Carolina, Mpumalanga, South Africa. African Journal of Aquatic Science.

Tate RB and Husted A. 2013. Bioaccumulation of metals in *Tilapia zillii* (Gervai, 1848) from an impoundment on the Badeni River, Cote D'Ivoire. African Journal of Aquatic Science.

O'Brien GC, Bulfin JB, Husted A. and Smit NJ. 2012. Comparative behavioural assessment of an established and new Tigerfish (*Hydrocynus vittatus*) population in two manmade lakes in the Limpopo catchment, Southern Africa. African Journal of Aquatic Science.

Tomschi, H, Husted, A, O'Brien, GC, Cloete, Y, Van Dyk C, Pieterse GM, Wepener V, Nel A and Reisinger U.

2009. Environmental study to establish the baseline biological and physical conditions of the Letsibogo Dam near Selebi Phikwe, Botswana. EC Multiple Framework Contract Beneficiaries.8 ACP BT 13 – Mining Sector (EDMS). Specific Contract N° 2008/166788. Beneficiary Country: Botswana. By: HPC HARRESS PICKEL CONSULT AG

Husted A. 2009. Aspects of the biology of the Bushveld Smallscale Yellowfish (*Labeobarbus polylepis*): Feeding biology and metal bioaccumulation in five populations. The University of Johannesburg (Thesis).

Wayne Jackson

B.Sc Hydrology & Soil Science

Cell: +27 82 055 3815

Email: wayne@thebiodiversitycompany.com

Identity Number: 8401175127085

Date of birth: 17 January 1984

Profile Summary

Extensive experience with a wide range of projects in many sectors across South Africa, and parts of Africa, providing specialist input into ESHIAs, WULAs and EMPs.

Skilled and experienced in four (4) specialist fields including Soil Science, Wetlands, Hydropedology, and Hydrology.

Experience in large post-mining rehabilitation projects, providing specialist inputs on land capability and soil utilisation.

Knowledge and know how on how soils, wetlands and hydrology are linked in the landscape and how activities could impact all these aspects.

The ability to monitor (ECO) large sensitive projects with strict adherence to EMP and the guidance of contractors to solutions/outcomes that are practical and environmentally friendly.

Areas of Interest

Further understanding and developing the links between hydrology, soils, and wetlands.

The simplification of wetland rating systems.

Key Experience

- Wetland Assessments
- Wetland Offset Strategies
- Hydropedological Assessments
- Soil, Land Capability, and Land Use Assessments
- Soil Stripping Ratios
- Agricultural Potential Assessments
- Floodline Determination
- Irrigation Design
- Environmental Control Officer (ECO)
- Rehabilitation Plans

Countries worked in

Cameroon
Democratic Republic of Congo
Liberia
Tanzania
South Africa

Nationality

South African

Qualifications

- BSc (University of KwaZulu-Natal) – Hydrology & Soil Science.
- Certificate of Competence: Grass ID Course
- Certificate of Competence: Water Resource Yield Modelling (DWAf)
- Certificate of Competence: 2D Flow Modelling using HEC-RAS

SELECTED PROJECT EXPERIENCE

Project Name: Feasibility study for the establishment and design of an 8 000ha irrigation development project at Lavumisa in Swaziland.

Client: SWADE.

Personal position / role on project: Soil Scientist/ Irrigation Design/ Crop water demand/ Bulk water distribution.

Location: Lavumisa, Swaziland (2010).

Main project features: To conduct a feasibility study and pre-design of the sugarcane irrigation scheme.

Project Name: A Hydropedological Assessment for the Chelmsford Colliery near Newcastle in KwaZulu-Natal.

Client: Future Coal.

Personal position / role on project: Hydropedology Specialist.

Location: Newcastle, KwaZulu-Natal (2016).

Main project features: To determine the required buffers zones from a Hydropedological perspective for the opencast mining project.

Project Name: New Liberty Opencast Gold Mine and Related Infrastructure EIA in Libaria.

Client: Aureus.

Personal position / role on project: Soil Scientist.

Location: Liberia (2014).

Main project features: To determine the Soil, Land Capability, and Current Land Use Impacts of the proposed mining project.

Project Name: Sasol Sigma Underground Ash Backfilling EIA.

Client: Sasol.

Personal position / role on project: Wetland Specialist.

Location: Mpumalanga, South Africa (2015).

Main project features: To delineate the wetlands and identify any possible impacts.

Project Name: Mhlabatshane Dam Design and Construction Project for Ugu District Municipality

Client: Ugu District Municipality.

Personal position / role on project: Hydrologist.

Location: Mshlabatshane, KwaZulu-Natal

Main project features: water resource assessment, Yield analysis (for optimal dam size as well as modelling the best design for reliability of supply to local households) and flood hydrology.

Project Name: 1:50 and 1:100 Year Floodline Assessment for Droogvalley Colliery.

Client: Geo Soil & Water.

Personal position / role on project: Hydrologist.

Location: Mpumalanga (2015).

Main project features: Conduct a 1:50 and 1:100 year Floodline Assessment.

Project Name: Croc Farm Estates Development Design and Layout.

Client: Croc Farm Estates.

Personal position / role on project: Hydrologist.

Location: KwaZulu-Natal (2010).

Main project features: Storm water design of attenuation ponds as well as drainage from key areas of the estate.

Project Name: Ergo Relocation of Old Tailings EIA

Client: Ergo

Personal position / role on project: Soil Scientist.

Location: Gauteng (2015).

Main project features: Conducted the Soils, Land Capability, and Current Land Use Impact Assessment.

Project Name: Environmental Monitoring for the Eros-Oribi 132kV Double Circuit Powerline and Substations.

Client: Eskom.

Personal position / role on project: ECO.

Location: KwaZulu-Natal (2009).

Main project features: Fulfilled the ECO role for the sensitive Powerline crossing at Oribi Gorge.

ACHIEVEMENTS

- Assigned by The Biodiversity company to manage the Soils, Wetlands, and Hydrological services. The role includes business support in the form of marketing and managing the client base in KwaZulu-Natal.
- Co-founded The Earth Water Environmental Science Company in 2015 to provide Specialist environmental services to environmental consultancies, the services included: Soils, Hydrology, Wetlands, Geohydrology, Hydrogeology, and Rehabilitation.
- Successfully conducted and improved land capability assessments whilst at Digby Wells.
- Completed numerous Hydrogeological assessments for clients and have become one of a few specialists capable of conducting these studies, as a result of my background and experience in the fields of Soils, Wetlands, and Hydrology.
- Completed large portions of feasibility studies for crop production, where I was tasked with: Identifying suitable soils, Yield Estimates, Crop Water demand analysis, temporary storage identification, sizing and design, Bulk water distribution, Irrigation design and layout.
- Completed large international mining projects within Africa, from exploration projects to fully operational mining sites.

OVERVIEW

An overview of the specialist technical expertise include the following:

- Soil, Land Capability, and Current Land use Assessments for mining, energy and construction industry.
- Wetland Delineation, Wetland Health and Integrity Assessments as per the Department of Water and Sanitation requirements.
- Hydrogeological assessments to determine the linkages between the wetland systems and the hillslope Hydrology.
- Wetland offset strategy designs.
- Wetland rehabilitation plans.
- Monitoring plans for wetland systems.
- Hydrological assessments, including dam design, dam break analysis, and floodlines.
- Agricultural potential assessments for construction projects on agricultural lands.
- Crop yield estimation and fertiliser recommendations for agricultural projects.
- Environmental Control Officer (ECO) experience on large sensitive projects.

TRAINING

Some of the more pertinent training undergone include the following:

- Water Resource Yield Modelling for dam supply assurance modelling (DWA 2009)
 - BASOS certification for fertiliser recommendation – (BASOS 2011)
 - Grass Identification course (Certificate of Competence) – (UKZN 2016)
-

- 2D – free Surface Flow Modelling (HEC-RAS) – (Enterprise University of Pretoria 2016)
- Basic Environmental Law Course – (Eskom 2011)
- Land Rehabilitation Society of South Africa (LARSA) conference attendance (2013 & 2015)
- Water Use Licence amendments workshop held by DWS – UKZN 2015

EMPLOYMENT EXPERIENCE

CURRENT EMPLOYMENT: The Biodiversity Company (December 2016 – Present)

The Biodiversity Company assigned me to the role of Senior Soil and Wetland Specialist. My roles include

- Management of Soils, Wetlands, Hydropedology, and Hydrology Services.
- Mentoring and management of staff in these fields.
- KwaZulu-Natal client management and marketing.
- Specialist inputs to the above mention services.
- Improvement of quality and efficiency of the above services.

PREVIOUS EMPLOYMENT: Earth Water Environmental Science Company (November 2015 – November 2016)

Co-founded The Earth Water Environmental Science Company in 2015 to provide Specialist environmental services to environmental consultancies, the services included: Soils, Hydrology, Wetlands, Geohydrology, Hydropedology, and Rehabilitation.

The Earth Water Environmental Science Company assigned me to the role of Senior Soil and Wetland Specialist. My roles include

- Management of Soils, Wetlands, Hydropedology, and Hydrology Services.
- Project management of various specialist studies.
- Client management and marketing.
- Day to day management of the business.
- Specialist inputs to the above mention services.
- Improvement of quality and efficiency of the above services.

PREVIOUS EMPLOYMENT: Digby Wells Environmental (October 2012 – October 2015)

Digby Wells assigned me to the role of Soil Scientist and my roles included:

- Management and conducting Soils and land capability assessments.

PREVIOUS EMPLOYMENT: Farm Secure (March 2012 – September 2012)

Farm Secure assigned me to the role of Soil Scientist and my roles included:

- Precision farming soil surveys and recommendations.

PREVIOUS EMPLOYMENT: Department of Hydrology (UKZN) (March 2011 – February 2012)

UKZN assigned me to the role of Hydrological Field Technician.

PREVIOUS EMPLOYMENT: Stemele Basch Africa (January 2009 – February 2011)

Stemele Bosch Africa assigned me to the role of Graduate Hydrologist, Natural Scientist, and Civil Engineering Technical Assistant.

GENERAL SKILLS

- Literacy*** Read, write and speak English fluently. Read, write and speak Afrikaans.
Basic Zulu
- Generic*** Advanced user of Microsoft Office applications.
- Mapping*** Introductory skill level for ArcGIS and Quantum GIS.

ACADEMIC QUALIFICATIONS

University of KwaZulu-Natal, Pietermaritzburg, South Africa (2008): Bachelor of Science (BSc) –
Hydrology & Soil Science

Curriculum Vitae

Name	Theresa (Terri) Leigh Bird
Date of Birth	8 November 1976
Nationality	South African
Employer	Airshed Planning Professionals (Pty) Ltd
Position	Senior Consultant
Years with Employer	4 years

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- National Association for Clean Air (NACA), 2012 to present
- South African Council for Natural Science Professions (Pr.Sci.Nat.), 2016

EXPERIENCE

At her current employer, Airshed Planning Professionals (Pty) Ltd, Terri has contributed to projects assessing the impact of various operations on air quality. Responsibilities include: compiling project information requests; summarising and interpreting ambient air quality data; collating technical information for emissions quantification; preparations, analysis and write-up of meteorology for dispersion modelling; setup, extraction and presentation of dispersion modelling results; report write-up; and presentation of findings at specialist workshops. The scope of project experience is detailed below.

Projects contributing to Environmental Impact Assessments	
Project type	Experience
Mining (including coal, platinum, tin and rare earth minerals)	<ul style="list-style-type: none"> ▪ At least five proposed open-cast coal mining projects, mostly on the Mpumalanga Highveld. ▪ Air quality assessment for the expansion of an underground platinum mine to include a concentrator facility and tailings facility. ▪ Assessment of underground mining of cassiterite (the mineral ore mined for tin) in the Democratic Republic of Congo. The project included the assessment of emissions along a long-distance haul road from the mine to Mombasa for export. ▪ Three rare earth mineral mining projects included dispersion model runs to assist the radiation specialist assessment of impact of radioactive compounds.
Power Stations	<ul style="list-style-type: none"> ▪ A project assessing the impact of Namibian coal-fired power station on urban air quality, in the context of many small industrial sources. ▪ The assessment of retrofitting improved particulate emission controls on an existing coal-fired power station on the Mpumalanga Highveld. ▪ The assessment of impact of a floating power plant, fuelled by various potential liquid fuels, docked in a port servicing an industrial development zone. ▪ Professional opinion on the impact of solar power facilities (one concentrated solar power (CSP) and one photovoltaic (PV)) on ambient air quality. ▪ The assessment of three coal-fired power stations in Botswana, including two projects where the assessment assessed the combined impact of an open-cast coal mine and the associated coal-fired power station.
Ash disposal	<ul style="list-style-type: none"> ▪ Conducted the assessment of impact of ash disposal facilities coal-fired power

Curriculum Vitae

Projects contributing to Environmental Impact Assessments	
Project type	Experience
facilities for coal-fired power stations	stations requiring additional disposal area. Assessment included the estimation of increased life-time cancer risk as a result of exposure to carcinogenic metals in the wind-blown dust from the disposal facilities.
Tyre pyrolysis plant	<ul style="list-style-type: none"> Assisted on an assessment of a plant that will use waste tyres as raw material to produce machine and vehicle oils.
Domestic waste landfill	<ul style="list-style-type: none"> Assessing the health and odour impacts of a domestic waste landfill to support residential development plans for the area.
Marine Repair Facility	<ul style="list-style-type: none"> The project quantified the impact on air quality of a marine vessel repair facility in the context of a busy port which includes an iron-ore transfer yard.

Air Quality Management Plans (AQMP)	
Project type	Experience
Provincial Level AQMP	<ul style="list-style-type: none"> Involvement included: <ul style="list-style-type: none"> baseline assessment of climatic conditions and ambient air quality across the Province; collation of questionnaires from point-source emission; point-source emissions inventory database management Assisted with quantification of vehicle emissions and with dispersion modelling of baseline emissions. Main contributor to management plan write-up. The management intervention strategies proposed in the AQMP were a collaborative effort of the technical project team, which included the client and consultants.
Metropolitan city level AQMP	<ul style="list-style-type: none"> Contributed to the emission inventory of industrial sources Collaborative project with the Council for Scientific Research (CSIR)
Platinum smelter complex	<ul style="list-style-type: none"> Fugitive dust emissions from ground-level sources and materials handling were a concern for a platinum smelter complex. The project scope included the identification of all sources; the quantification and ranking of emissions; and proposed management strategies. A risk assessment model was used to assess where the variability of emission sources would constitute a risk if improperly managed.
Diamond mine	<ul style="list-style-type: none"> The project scope for a Botswana-based diamond mine approaching end-of-life required the assessment of current and future impacts of operations on the ambient air quality; including the development of an air quality management plan and the proposal of an ambient air quality monitoring network, based on the findings of the impact assessment.

Atmospheric Impact Reports (AIR)	
Project type	Experience
Coal-to-liquid fuel refineries	<ul style="list-style-type: none"> Postponement application included four sites with multiple point-sources and modelling iterations for all sources emitting at four different levels for multiple pollutants. A collaborative project where my responsibilities included: model simulations, post-processing and extractions; management of model extractions and

Curriculum Vitae

Atmospheric Impact Reports (AIR)	
<u>Project type</u>	<u>Experience</u>
	<p>management of file transfer for peer review process; graphic summaries results; mapping of results; and, graphic presentation of measured ambient air quality. My contributions to the written report included: report template sections (as per Government Gazette No. 36904: 747); summary of meteorological data used in the assessment; measured ambient air quality; results analysis, interpretation and write-up; and, a literature review of potential impacts of the operations on the environment.</p> <ul style="list-style-type: none"> ▪ The assessment of impact of petroleum storage tanks storing products of the tar process on the ambient air quality, especially with respect to total volatile organic compounds (TVOCs).
Crude oil refinery	<ul style="list-style-type: none"> ▪ Postponement application included emissions from multiple point-sources, and fugitive emissions from storage tanks; modelling iterations for all sources emitting at two different levels for sulfur dioxide [from point sources] and total volatile organic compounds (TVOCs) [from tanks]. ▪ A collaborative project where I focused on the point-sources, including the model simulations; post-processing and extractions; graphic results summaries; and, graphic presentation of measured ambient air quality. Contributions to the written report included: report template sections; summary of meteorological data used in the assessment; measured ambient air quality; results analysis, interpretation and write-up.
Fertilizer production	<ul style="list-style-type: none"> ▪ Assessment report (prepared as AIR) included emissions from multiple point-sources; modelling iterations for all sources emitting at two different levels for particulate matter and ammonia emissions. ▪ A collaborative project where my responsibilities included: model simulation setup, post-processing and extractions; graphic summaries results; mapping of results; and, graphic presentation of measured ambient air quality. My contributions to the written report included: report template sections (as per Government Gazette No. 36904: 747); summary of meteorological data used in the assessment; measured ambient air quality; results analysis, interpretation and write-up.
Platinum smelter	<ul style="list-style-type: none"> ▪ Postponement application included emissions from the smelter furnace and converter; modelling iterations for the sources emitting at two different levels where the pollutant of concern was sulfur dioxide.
* all projects listed above supported the application for postponement of stricter Minimum Emissions Standards applicable to Listed Activities	
Veterinary waste incinerator	<ul style="list-style-type: none"> ▪ New Atmospheric Emissions License (AEL) application for a State Veterinary incinerator. The assessment included calculating emission rates from the incinerator; dispersion modelling; preparation of an AIR (as per Government Gazette No. 36904: 747); and completing the technical sections of the AEL application.
Galvanizing plant	<ul style="list-style-type: none"> ▪ The project assessed the impact of a steel galvanising plant on air quality in a developing industrial development zone. Pollutants of concern included hydrochloric acid (HCl).
Secondary Aluminium Smelter	<ul style="list-style-type: none"> ▪ A project involving the assessment of a secondary aluminium smelter in an already developed urban industrial area

Curriculum Vitae

Ambient air quality monitoring projects	
<u>Project type</u>	<u>Comments regarding project details and involvement</u>
Ferrochrome smelter complex	<ul style="list-style-type: none"> ▪ Compiled reports for the dustfall monitoring campaign for a period of 12 months. Results were compared with the relevant legislation and recommendations made for source management as required.
Platinum smelter complex	<ul style="list-style-type: none"> ▪ Project scope required monthly reports of the ambient sulfur dioxide concentrations downwind of a platinum smelter complex, for a 12 month reporting period. Report preparation included: data cleaning and filtering; data analysis, presentation; and report write-up.
Dustfall monitoring	<ul style="list-style-type: none"> ▪ Collate, summarise and report on dustfall rates, and metal content, after laboratory analysis. Project contract for 12 months for the proposed expansion of a coal mine in Botswana.

Air quality training	
<u>Training organisation</u>	<u>Details of involvement</u>
National Association for Clean Air (NACA)	<ul style="list-style-type: none"> ▪ Presenting the module regarding the Development of Air Quality Management Plans ▪ Module forms part of a 5-day course presented annually
Centre for Environmental Management (CEM), University of the North-West (Potchefstroom)	<ul style="list-style-type: none"> ▪ Presented two modules: <ol style="list-style-type: none"> 1. Development of Air Quality Management Plans 2. Air Pollution Meteorology ▪ Modules forms part of a 2-day course presented annually, or at special request

SOFTWARE PROFICIENCY

- Atmospheric Dispersion Models: AERMOD, CALPUFF, ADMS (United Kingdom), CALINE, GASSIM
- Graphical Processing: Surfer, ArcGIS (basic proficiency)
- R, especially with the package "openair"
- Other: MS Word, MS Excel, MS Outlook

Curriculum Vitae

EDUCATION

University of the Witwatersrand	
Ph.D. (School of Animal, Plant and Environmental Sciences) (2006 - 2011)	Thesis title: Some impacts of sulfur and nitrogen deposition on the soils and surface waters of the Highveld grasslands, South Africa.
M.Sc. (School of Animal, Plant and Environmental Sciences) (1999 – 2001).	Dissertation title: Some effects of prescribed understory burning on tree growth and nutrient cycling, in <i>Pinus patula</i> plantations.
B.Sc. (Hons) (Botany) (1998)	Project title: The rate of nitrogen mineralization in plantation soils, in the presence of <i>Eucalyptus grandis</i> wood chips. <i>Courses:</i> Wetland ecology, Ecophysiology and Environmental studies.
B.Sc. (1995 – 1997)	Botany III, Geography III, Zoology II.

COUNTRIES OF WORK EXPERIENCE

South Africa, Botswana, Mozambique, Democratic Republic of Congo, Namibia,

LANGUAGES

	Speak	Read	Write
English	Excellent	Excellent	Excellent
Afrikaans	Fair	Fair	Fair

REFERENCES

Name	Position	Contact Number
Dr. Hanlie Liebenberg Enslin	Managing Director at Airshed Planning Professionals	+27 (83) 416 1955 hanlie@airshed.co.za
Dr Lucian Burger	Director at Airshed Planning Professionals	+27 (11) 805 1940 lucian@airshed.co.za

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications and my experience.



23 November 2016



Geo Hydraulic and Environmental Technology (Pty) Ltd

Geohydrological and Environmental Consultants

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John Kalala Ngeleka Pr.Sci.Nat.

Bsc (Hons) Geology/ Msc Geohydrology

Senior Geohydrologist / Director

Citizenship

South African Permanent Resident

ID

6605256121187

Year of Experiences

19 years

Registration and Professional

SACNASP (Water Resources Science)
Registration Number: 114752

Specialisation

- * Groundwater development, supply and management;
- * Contaminated site management; environmental site assessment;
- * Site geological and hydrogeological characterization;
- * Geophysical and hydrogeochemical investigations; and
- * Geohydrological Specialist investigations for regulatory compliance.

EDUCATION

Msc. (hydrogeology)

Institute for groundwater studies (IGS). University of the Free State, South Africa, 2010;

Bsc. Hons. (Applied Geology)

University of Kinshasa, DRC Congo, 1999;

Bsc. (Geology)

University of Kinshasa, DRC Congo, 1993;

High School Diplomas (Mathematics/Physics)

John XXIII College/Lualaba, Kolwezi, D.R.Congo, 1986.

CERTIFICATION

Hydro-pedological characterisation of degraded soils	Institut de Recherche pour le developpement (IRD) at University of Kwazulu Natal, Pietermaritzburg; 2007
Consulting Skill Training	Environmental Resources Management (ERM) Southern Africa, 2013
Engen Petroleum Health and Safety Level 2 Permit Issuer.	TRAINRITE CC, Durban, South Africa

SUMMARY OF WORK EXPERIENCES

02/2015 - Present	Geo Hydraulic and Environmental Technology (PTY) Ltd, South Africa. Senior Geohydrologist
08/2014 - 02/2015	Groundwater Environmental Management - Gpt (Pty) Ltd. Short Term contract Independent Hydrogeologist.
01/2013 – 08/2014	Environmental Resources Management (ERM) Southern Africa. Contaminated Site Management (CSM) Project Manager
06/2010 - 12/2012	Groundwater Consulting Services (Pty) Ltd Field Hydrogeologist
02/2004 - 06/2010	School of Bioresources Engineering and Environmental Hydrology at University of Kwazulu Natal, Pietermaritzburg, South Africa. Field Technical researcher
02/2002- 08/2002	Diamond Company SMD, Kinshasa, DRC Consulting Geologist
04/1996 - 10/2002	Marble-Cutting of Congo, Kinshasa, DRC Engineering Geologist

SUMMARY OF WORK EXPERIENCES

Ngeleka has over 19 years of fieldwork experience in the research, mining, oil and gas sectors, firstly as a geologist in DRC Congo and following completion of his MSc in South Africa, as hydrogeologist.

He was a Field Technical Researcher at the School of Bioresources Engineering and Environmental Hydrology at University of KwaZulu-Natal and joined Groundwater Consulting Services (GCS) as a Field hydrogeologist and ERM Southern Africa as a Project Manager prior to recently join Geo hydraulic and Environmental Technology (GET) Pietermaritzburg office.

Ngeleka gained extensive experience in groundwater development and supply, monitoring and management, geophysical surveys, drilling supervision and quality control, contaminated sites management, aquifer testing and data interpretation and in developing geological and hydrogeological conceptual models. He managed various hydrogeological investigations for contaminated site assessments, environmental impact assessments, wellfield development for water supply to Mines in South Africa, DRC Congo and Mauritania. Clients worked for include AngloGold Ashanti, Richards Bay Mineral (Rio Tinto), Tasiast Mauritania Mine (Kinross), Xstrata Coal Mine, Tenke Fungurume Mine (Freeport-McMoRan Copper & Gold), Shell South Africa, Engen South Africa, Sasol South Africa, Sapref, Mondi Ltd, Sappi Saiccor.

Ngeleka has experience in conducting geophysical surveys using Electrical Resistivity Tomography (Imaging), magnetic and Electromagnetic techniques (EM 31, 34, 38); Installation and maintenance of hydrometers, data collection and database management for monitoring Hydrological processes in the catchments.

Ngeleka is originally from DRC Congo and is fluent in both English and French.

Key Projects:

Desktop Geohydrological Specialist Assessment for the Proposed New Convenience development near Nagle Dam (off the MR566 Road), Ethekwini Municipality Northern Kwazulu-Natal. Project from the department of Economic Development, Tourism and Environmental Affairs done as Senior Geohydrologist at GET (Pty) Ltd.

The geohydrological specialist investigation aimed to review and to assess the baseline groundwater and surface water conditions and to identify potential impacts and assess risks that the proposed filling station poses to the receiving environment and to advise mitigation measures accordingly as part of the EIA process.

Groundwater resources assessment at Fountain Hill Farm, near Wartburg, Kwazulu Natal.

The project consisted of assessing the available capacity for use of groundwater within the farm area. Project received from SRK consultant (Pty) Ltd, done as Senior Geohydrologist at GET (Pty)Ltd.

Groundwater supply feasibility study and Drilling of a New Borehole at Nocomboshe Clinic in Msinga Local Municipality Northern Kwazulu-Natal. Project from Church of Scotland Hospital, Department of Health done as Senior Geohydrologist at GET (Pty) Ltd.

The borehole was site using magnetometer and the borehole drilled yielded 24 000l/hour which exceeded the clinic expectation.

Tenke Fungurume Mine (DRC) / Freeport-McMoRan Copper & Gold, Extension of mine groundwater monitoring network. Project done as Project Manager at ERM Southern Africa (Pty) Ltd.

The Project consisted of drilling, installation of monitoring wells. Sampling of groundwater monitoring wells using Hydrasleeves, near Kwatebala, Fungurume hills and Mwadinkomba.

Contaminated site investigation at Jeffrey's Bay Service Station, Eastern Cape South Africa. Shell Project done as Project Manager at ERM Southern Africa (Pty) Ltd.

The project consisted of soil and groundwater impact assessment, aiming to understand the source-pathway-receptor (S-P-R) connection.

Environmental Site Assessment at Total Service Station-Eshowe KZN. Total Project done as independent hydrogeologist consultant/ GEM-GPT (Pty) Ltd.

The project consisted of soil and groundwater impact assessment, aiming to understand the source-pathway-receptor (S-P-R) connection.

Ashanti_Public Hazardous Assessment: Investigation on the impacts of mine radioactive waste on groundwater and surface water quality. AngloGold Ashanti Project done as Field Hydrogeologist Consultant at GCS (Pty) Ltd.

The project consist of hydrochemistry analysis of groundwater and surface water samples. Data was interpreted and reported.

Kinross-Tasiast Well Field Expansion Project: Drilling supervision of groundwater supply Boreholes and quality control; aquifer testing and data analysis; Groundwater monitoring using Divers; Groundwater Management System. (Mauritania). Kinross Project done as Field Hydrogeologist Consultant at GCS (Pty) Ltd.

The project consisted of Wellfield design and development, groundwater monitoring and management. Hydrogeological and geological conceptual models and aquifer testing data were fed into wellfield groundwater numerical model and reported in both in French and in English to the Mine.

Field investigations to study the fate and transport of Light Non-Aqueous Phase Liquids (LNAPLs) in groundwater using geophysical methods. Case of East London fuel. Water Research Commission Project done as Msc Student (Geohydrology) (UFS).

In this investigation one of the geophysical methods, Electrical Resistivity Tomography (ERT) was tested to characterize the Joint Fuel Depot site geology units, aquifer setting and LNAPLs preferential flow pathways, as well as to establish its ability to identify LNAPLs contaminant plumes.

Paardekop and Amersfoort Basic Groundwater Assessment. Xstrata Coal Mines project done as Field Hydrogeologist Consultant at GCS (Pty) Ltd.

This project consisted of Hydrogeological investigations as component of EIA/EMP application for the proposed Xstrata's Paardekop and Amersfoort Coal Mines.

Geophysical Investigation for Agroforestry Activities at Fountainhill Estates, Wartburg in Pietermaritzburg. WRC Project done for the Institute of Natural Resources (INR) as Senior Geohydrologist at GET (Pty) Ltd.

Electrical Resistivity Tomography (ERT) technique was applied to agroforestry trial sites to set up a series of water distribution transects in time in order to learn about the seepage, uptake and lateral flow characteristics during the trial. To monitor bi-annual soil moisture in the field in order to reveal contrasting water depletion patterns under intercropping systems.

CURRICULUM VITAE

JONATHAN H. MARSHALL

Landscape Architect and Environmental Assessment Practitioner for Environmental Planning & Design cc

SKILLS BASE AND CORE COMPETENCIES

- Chartered Landscape Architect (UK).
- Certified Environmental Assessment Practitioner of South Africa.
- Visual Impact Assessment utilising the the Government of the Western Cape Guideline for Involving Visual and Aesthetic Specialists in EIA Processes and the Landscape Institute and Institute of Environmental Management and Assessment (UK) Guidelines for Landscape and Visual Impact Assessment.

EMPLOYMENT HISTORY

- Landscape Assistant, WS Atkins (UK) 1979 – 1981.
- Landscape Architect, Brian Clouston and Partners (Hong Kong) 1981 – 1989.
- Director, Brian Clouston and Partners (Australia) 1989 - 1990.
- Principal Landscape Architect, Gillespies (UK) 1990 – 1992.
- Principal, Opus Environment (UK) 1992 – 1995.
- Director, Environmental Design Partnership (SA) 1995 – 1998.
- Principal, Environmental Planning and Design (SA) 1998 – present.

TERTIARY EDUCATION

- Diploma in Landscape Architecture, Gloucestershire College of Art and Design, UK (1979).
- Environmental Law Short Course, University of KZN (1997)

SELECTED RELEVANT PROJECT EXPERIENCE

Visual impact assessments for developments in the Hong Kong, the UK, Ghana Guinea, Gauteng, Free State, KwaZulu-Natal, Mpumalanga. Examples of larger projects include:

- Solar plant projects including photovoltaic and concentrating solar power plants – Numerous projects for Eskom and private clients in the Northern Cape, Limpopo, Mpumalanga and the Free State.
- Proposed new mines and tailings facilities associated with existing mines in Ghana and Guinea.
- Four major shopping centre developments including projects in the UK and South Africa.
- A new international airport development to the north of Durban.
- Heavy industrial developments including a ferrochrome smelter in Richards Bay.
- Numerous new road and road upgrade proposals including projects in Hong Kong, the UK and South Africa.
- Long term landfill planning in the Durban area.
- Numerous power line proposals including projects for Eskom in the Free State and KwaZulu Natal.
- Aesthetic guideline documents including building massing in Hong Kong, development around estuaries in KwaZulu Natal.
- The provision of visual impact assessments as evidence for legal processes including parliamentary debate (UK), public enquiry (UK) and planning appeal (South Africa)
- Review of specialist reports prepared by other experts.

**CURRICULUM VITAE
JACO VAN DER WALT**

Profession : Archaeologist

Specialisation : Cultural Resource Management and Iron Age Archaeology

Work experience : 10 years

SKILLS BASE AND CORE COMPETENCIES

- Archaeological Impact Assessments
- Heritage Impact Assessments
- Heritage Management Plans
- Archaeological research projects
- Cultural resource management
- Phase II cultural resource management projects: archaeological excavations
- Grave relocation
- Project Management

TERTIARY EDUCATION

- 2001, BA Archaeology (Cultural Heritage Tourism), University of Pretoria (SA)
- 2002, BA Archaeology (Hons) , University of Witwatersrand (SA)
- Present, Masters Archaeology, University of Witwatersrand (SA)

EMPLOYMENT HISTORY

- 2011 – Present: Founder and owner of Heritage Contracts and Archaeological Consulting CC.
- 2007 – 2010: CRM Archaeologist, Managed the Heritage Contracts Unit at the University of the Witwatersrand
- 2005 - 2007: CRM Archaeologist, Director of Matakoma Heritage Consultants
- 2004: Technical Assistant, Department of Anatomy University of Pretoria
- 2003: Archaeologist, Mapungubwe World Heritage Site Archaeological Rehabilitation Project
- 2001 - 2002: CRM Archaeologists, For R & R Cultural Resource Consultants, Polokwane
- 2000: Museum Assistant, Fort Klapperkop, Pretoria

SELECTED RELEVANT PROJECT EXPERIENCE

- Archaeological Impact Assessment for the Chronimet Underground Mine, Opencast mine, process plant, Amandelbult, Limpopo Province.
- Archaeological And Palaeontological Impact Assessment For The Updated EMP for Trans Hex Mining Operations, Richtersveld, Northern Cape
- Archaeological Impact Assessment for Sasol's project Mafuta, Lephalale, Limpopo Province.
- Archaeological and Heritage Statement for the Proposed Lg5 Opencast Mining Area, North West Province
- Field supervisor at Mapungubwe (World Heritage Site) Archaeological Rehabilitation project
- Field Director for Iron Age mitigation for chrome Mining by Hernic Ferrochrome, North West Province.
- Field Director phase 2 documentation for The Heads Trust, Heritage Assessment, and monitoring for Lydenburg Ext 38 housing development, Lydenburg, Mpumalanga, principle investigator Prof. T. Huffman
- Field Director phase 2 documentation for Sterkspruit housing development, Lydenburg, Mpumalanga.

- Field Director Middle Iron Age Mitigation For Wesizwe Platinum mining, principle investigator.
- Field Director Phase 2 documentation of Khoni Iron Age Settlement Lydenburg.
- Field Director for the Archaeological Mitigation For Booyendal Platinum Mine, Steelpoort, Limpopo Province.
- Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline from Jhb to Durban
- Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province.

Elena Broughton

Date of Birth: 11 September 1980
 Designation: Unit Manager: Innovation & Sustainable Development
 Profession: Senior Development Economist
 Specialisation: Sustainable Development Specialist
 Years within Firm: 12 Years
 Nationality: Russian
 Years of Experience: 12 Years
 HDI Status: White Female



Education:

University of Pretoria - 2011	MSc (Technology Management)
University of Pretoria - 2007	BScHons (Technology Management)
Parkland College, USA - 2004	Computer Integrated Accounting
Parkland College, USA - 2004	Independent Business
Parkland College, USA - 2003	Intermediate Accounting
Parkland College, USA - 2003	Records Management
Parkland College, USA - 2003	Financial Accounting
Parkland College, USA - 2003	Managerial Accounting
Nizhny Novgorod University, Russia - 2002	BComHons (Economics)

Professional Membership:

SAPOA Urban-Econ Development Economists (Pty) Ltd

Language Proficiency:	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Russian	Excellent	Excellent	Excellent

Work Experience:

2004 - Current	Urban-Econ Development Economists
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Key Qualification:

Elena Broughton completed her BComHons in Economics in Russia, at Nizhny Novgorod State University in 2002 specialising in regional economics. At the same time, she completed an additional degree as Translator/Interpreter in Professional Orientated Communication. After completion of her Honours degree in Economics, Elena moved to the USA and stayed there for 1.5 years. During her stay in the USA, she completed a number of Accounting and Business courses at Parkland College, Illinois. In 2007, she obtained her BScHons in Technology Management (Cum Laude) at the University of Pretoria and later received her MSc in Technology Management (2011) from the same university.

Elena Broughton is a senior professional at Urban-Econ and has an extensive knowledge in various fields of economic development, including impact assessments, investment strategy formulation, strategic decision analysis, and monitoring and evaluation. She is experienced in developing input-output and SAM-based models, as well as development and application of other econometric techniques. Elena has a special interest in project evaluation and decision-making framework, with the latter being the focus of her Master's dissertation. Over the past few years, she was able to extend her experience in these fields working on projects for both government and the private sector. Elena is managing the Innovation & Sustainable Development Unit and has successfully completed various energy and innovation projects in this capacity.

Experience Record:

Project:	The Localisation Potential of Photovoltaics (PV) and a Strategy to support large scale roll-out in South Africa
Year:	June 2012 – March 2013
Location:	National
Client:	WWF S, South African Photovoltaic Industry Association (SAPVIA), and the Department of Trade and Industry, RSA
Project Features:	
Activities Performed:	<ul style="list-style-type: none"> ▪ Describing of the global PV industry and its trends ▪ Profiling of the local PV industry

	<ul style="list-style-type: none"> ▪ Analysing of the local PV value chain considering three market segments, i.e. rooftop, commercial and utilities ▪ Analysing of financial dynamics of the market and standardisation requirements ▪ Determining the potential for localisation in the country ▪ Developing a strategy for the future roll-out <p>Policy environment review, market segments analysis, demand analysis, value chain analysis, pricing of components, local content analysis, potential for localisation assessment, strategy formulation</p> <p>The goal of the study was to describe the global and local PV industry trends and dynamics, and to develop localisation scenarios for the purposes of providing recommendations with respect to the future roll-out of the industry.</p>
Project: Year: Location: Client: Project Features:	<p>Feasibility study into establishing CSP component manufacturing facilities in South Africa November 2012 – February 2013 National The Industrial Development Corporation, RSA</p> <ul style="list-style-type: none"> ▪ The identification of various CSP technologies and systems that are promoted internationally ▪ And various designs and configuration of each technology. ▪ An overview of the international and local CSP market, the major materials and components of CSP with a view of establishing a local manufacturing base of CSP systems and components ▪ The identification of key technical and technology partner in the development of the manufacturing facility ▪ Engagement with the potential technical partner to determine whether the IDC can capacitate the supplier to manufacture components and systems locally ▪ Identification of a suitable location for the new facility or expansion of existing local CSP component manufacturing facilities in South Africa ▪ The amount of potential jobs that will be created from expansion or creation of a new facility, preliminary financial model and CAPEX budget.
Activities Performed:	Global CSP industry analysis, value chain analysis, local industrial capabilities assessment, demand analysis, job creation potential analysis
Project: Year: Location: Client: Project Features:	<p>Northern Cape Renewable Energy Strategy November 2012 – June 2013 National The Northern Cape Department of Economic Development and Tourism, RSA</p> <ul style="list-style-type: none"> ▪ Description of the status and potential of the local renewable energy sector ▪ Investigation of the potential to establish clean and green sustainable development projects in the Province in line with the optimal mix identified. ▪ Identification of income generation opportunities for the purpose of revitalising rural communities ▪ Assessment of the institutional capacity and capability ▪ Strategy and implementation plan formulation
Activities Performed:	Policy environment analysis, renewable energy industry profiling, desired state of industry analysis, market segmentation and demand analysis, stakeholder analysis and institutional structures review, strategy formulation
Project: Year: Location: Client: Project Features:	<p>A study of the factors contributing to successful technology commercialization March 2015-September 2015 National The dti</p> <ul style="list-style-type: none"> • Current context and framework for technology commercialisation in South Africa • Identification of critical factors and resources required for successful commercialisation • On-line survey • Interviews with numerous stakeholders (universities, businesses, government organisations) • Case study analysis of policies and interventions in other countries • Profiling of the current policy environment, funding mechanisms and stakeholders • Identification of mechanisms and interventions to assist in commercialisation of technologies • Formulation of a guide for commercialisation
Activities Performed:	Project management and quality control, presentation of study findings
Project: Year:	<p>Assessment of policy to enable the implementation of energy efficiency in the building sector December 2014-April 2015</p>

Location: Client: Project Features:	National SANEDI/Department of Energy <ul style="list-style-type: none"> Assessment of existing national and local government policy frameworks (legislations, standards, policy, building codes etc.) with respect to constraints and opportunities created for implementation of energy efficiency in the building sector Interview various stakeholders Review of interventions and support mechanisms Undertake case studies Provide policy recommendations
Position held: Activities Performed:	Project manager Project management and quality control, presentation of study finding
Project: Year: Location: Client: Project Features:	A Study of the Economic Impact of load shedding on the City of Johannesburg with or without Kelvin Power Station January 2015 – June 2015 City of Johannesburg City of Johannesburg Metro <ul style="list-style-type: none"> Developing a model of electricity usage by various economic sectors based on information supplied by City Power Profiling economic structure of Coty of Joburg regions Modelling of the potential economic impact on the City with and without Kelvin Power Station, in the short-term and the impact of outages on the City as a whole over the medium-term; Interview large electricity users in the City Interpreting economic effects of load shedding derived from the modelling exercise in the context of the CoJ economy, and specifically its implications on the production, Gross Domestic Product per region (GDP-R), and employment
Position held: Activities Performed:	Senior economist Economic modelling, report quality control, presentation of findings
Project: Year: Location: Client: Project Features:	Global Energy Efficiency options: Energy efficient technologies, policy and institutional requirements for adoption in South Africa July 2015 – February 2016 National The dti/the Industrial Development Corporation <ul style="list-style-type: none"> Profiling of full range of Energy Efficiency options currently being utilised globally in the building and industrial/mining sectors Assessment of technologies favoured by countries that have successfully implemented EE measures Explore policy initiatives and incentives that contribute to both the greening of industries and the establishment of new green industries Developing a cost and savings potential model to evaluate technologies
Position held: Activities Performed:	Project manager Project management and quality control, presentation of study findings, costing and saving model development
Project: Year: Location: Client: Project Features:	Feasibility study of high temperature applications for South Africa October 2014 – February 2015 National CSIR/the Department of Science and Technology <ul style="list-style-type: none"> Profile HTA technologies Assess South Africa's readiness and need for HTA Assess the current and projected future requirements for HTA Evaluating the prospects (technical and economic) of HTA in South Africa Determine RDI opportunities for the country Formulate and action plan and providing recommendations appropriate for the implementation programme
Position held: Activities Performed:	Project manager Project management and quality control, engagement with industry stakeholders

Other Projects:

- **Go-to-Market Strategy for a PV/Panel Manufacturer:** Urban-Econ together with EScience Associates and Tracy Stewart Consulting was appointed by the CEF to undertake a Go-to-Market Strategy for a PV panel manufacturing facility. The project consisted of two major parts. The first component included the analysis of the market and opportunities presented in the market, as well as identification of the needs, affordability levels and requirements by all groups of stakeholders in the industry's value chain. The second part of the study included the formulation of the strategic plan that outlined various target markets to be pursued, value proposition to be offered, market channels to be considered for entering the market and activities to be implemented during the product pre-launch, launch and post-launch phases.
- **High-tech bio-sciences incubator feasibility study:** The study focused on the assessment of the feasibility of establishing a physical high-tech bio-sciences incubator at the Innovation Hub in Gauteng, South Africa. It involved the investigation into the most feasible location, market viability, service offerings, operational requirements, and seed funding requirements.
- **High-tech chemical sector incubator feasibility study:** The study focused on the assessment of the feasibility of establishing a high-tech chemical sector incubator in Gauteng, South Africa. It involved the investigation into the most feasible location, market viability, service offerings, operational requirements, and seed funding requirements.
- **Promotion of Decent work in Southern African Ports (phase ii):** The study focused on the independent assessment of progress to date of the project across all the outcomes; assessing performance as per the foreseen targets and indicators of achievement at output level, strategies and implementation modalities chosen, partnership arrangements, constraints and opportunities in both Mozambique and South Africa. It provided strategic and operational recommendations as well as highlighted lessons to improve performance and delivery of project results. to port workers.
- **A feasibility study and a business plan for downstream beneficiation of fly ash in the Nkangala District Municipality:** Large volumes of coal fly ash (CFA) are being produced at power stations in Mpumalanga. CFA is already used as a cement extender by local cement factories; however, CFA has numerous other applicants that are not properly explored. The study therefore aimed at investigating all possible opportunities that could be derived from CFA beneficiation and identification of those that could be realised in Nkangala.
- **Matjhabeng Solar Park: Socio Economic needs analysis and plan formulation:** The study focused on the community of Matjhabeng, the Free State Province. It involved the identification of the socio-economic needs and priorities for the local communities, creating an inventory of social facilitates and small enterprises, and running a skills registrar. Aside from the secondary data review, 100 households were surveyed, 35 social facilities were profiled, and 30 businesses were audited. a skills development, a social facilitates, and enterprise development investment plans for the project developer were formulated.
- **Examining the possibility of attracting corporate social investment (CSI) into water research and development:** The study aimed at obtaining feedback from a sample of corporate representing a variety of industries with regard to the possibility and appetite to invest CSI funds in deploying water and sanitation related solutions in communities targeted by them.
- **Go-to-Market Strategy for a PV/Panel Manufacturer:** Urban-Econ together with EScience Associates and Tracy Stewart Consulting was appointed by the CEF to undertake a Go-to-Market Strategy for a PV panel manufacturing facility. The project consisted of two major parts. The first component included the analysis of the market and opportunities presented in the market, as well as identification of the needs, affordability levels and requirements by all groups of stakeholders in the industry's value chain. The second part of the study included the formulation of the strategic plan that outlined various target markets to be pursued, value proposition to be offered, market channels to be considered for entering the market and activities to be implemented during the product pre-launch, launch and post-launch phases.
- **SunCorp Socio-Economic and Enterprise Development Plan Formulation:** Urban-Econ was appointed by SunCorp to develop a Socio-Economic Development and Enterprise Development Plan for a Solar PV project in the Free State. The plans were devised in line with the DOE requirements outlined for the bidding phase.
- **Savanna Cookware Manufacturing Facility Pre-Feasibility Study:** Urban-Econ undertook a pre-feasibility study for a manufacturing facility planned to produce luxurious stainless steel cookware in South Africa. The pre-feasibility study focused on determining the need and desirability for the proposed manufacturing facility considering the defined

primary and secondary markets, the key prerequisites for the viability of the proposed venture and the most optimal location for the proposed manufacturing facility.

- An Opportunity Cost Assessment for the proposed Labonte 5 Mining Project: The purpose of the study was to investigate the opportunity cost of the proposed sand mining project to determine the implications on the local economy dynamics and the impact on the major infrastructure projects implemented in the Lephalale area if the proposed project is not approved.
- Saldanha Bay Separation Plant Economic Impact Assessment: The project involved undertaking an Economic Impact Assessment study for the proposed construction and operation of a Rare Earth Elements (REE) Separation Plant on Portion 6 of the Farm Langeberg 188 in Saldanha, in the Western Cape Province. The study formed part of the Environmental Impact Assessment process as prescribed in the National Environmental Management Act (NEMA) of 1998 and its subsequent amendments.
- Zandkopsdrift Rare Earth Elements (REE) Project Economic Impact Assessment: The project involved undertaking a Socio-Economic Impact Assessment study for the proposed the Zandkopsdrift Rare Earth Elements (REEs) Project near Garies in the Northern Cape Province of South Africa. The study formed part of the Environmental Impact Assessment process as prescribed in the National Environmental Management Act (NEMA) of 1998 and its subsequent amendments.
- Balmoral EIA: The study involved undertaking a Socio-Economic Impact Assessment as an input into a Basic Impact Assessment Study for the proposed Balmoral X5 Township Development in the Ekurhuleni Metropolitan Municipality (EMM).
- Green Building Market Entry Study: The Embassy of the Kingdom of the Netherlands in Pretoria appointed Urban-Econ to undertake a market entry study for the Green Building Industry of South Africa. The document was compiled for the purpose of guiding the existing or prospective Dutch companies in expanding or involving themselves in the South African Green Building Industry. The report contained information on the policy and regulatory environment that drives the development of this sector in the country and the broad overview of the status of the construction industry with the focus on the green building industry. The document also encompassed information on the state of development and industry maturity of selected green building sub-sectors that are aligned with the expertise of the Dutch companies. Information on doing business in South Africa as far as procurement and tendering practices, business funding and other support offered by South Africa and Netherlands, was also provided.
- Royal Bafokeng Mining Procurement Study: The study identified business opportunities that can be established in the area leading to the localisation of mining inputs. It was based on a comprehensive assessment of the selected mine's contract-based procurement practices.
- Ventersburg Business Development Concept: The study focused on the identification of business development opportunities that could be pursued in the town of Ventersburg based on the traffic derived in the area from the N1 highway and other regional roads. The study involved a comprehensive assessment of the target markets induced by traffic, economic base of the area, current business offerings and derived opportunities. It concluded with a presentation of business development concept scenarios and associated socio-economic benefits.
- Eskom CSP (Solar 1) Macroeconomic Impact Assessment: The study involved the identification of potential localisation opportunities for various components of the project and modelling of the socio-economic impact.
- Proposed Exxaro IPP Coal-Powered Power Station - Lephalale Scoping Inputs: Urban-Econ was appointed to undertake a Socio-Economic Scoping Study and Land-Use Impact Study for the proposed Exxaro Coal-Powered Power Station near the town of Lephalale, Limpopo Province.
- Mafube Nooitgedacht and Wildfontein EIA/EMP Sustainable Development Investigation Study: Urban-Econ was appointed to undertake an investigation into sustainable development options associated with the proposed project. The results of this study aimed at informing the decision makers of socio-economic trade-offs related to each option analysed and the preferred alternative.
- Thaba Metsi Sustainable Development Investigation Study: The objective of the Thaba Metsi Project is to mine coal via opencast and underground mining methods for supply to the Independent Power Producer (IPP) coal-fired power station, to be developed by Exxaro, north of the proposed Thaba Metsi project. Urban-Econ provided a specialist input into the sustainable development Investigation aimed at quantifying and assessing various options associated with the development and post-mining land uses that formed part of an input into the EIA report.
- Eskom Sere Wind (WEF1) Macro-Economic Impact Assessment: The project entailed the strategic assessment of the proposed facility on the macro-economic situation with respect to the impact on the balance of payments, supply of

energy, demand for water, and achievement of strategic government objectives. It also entailed the assessment of the proposed project on the regional and local economies.

- **Evaluation of Energy-Related Proposals for the Department of Science and Technology:** Urban-Econ was appointed to undertake an evaluation of six energy-related proposals submitted to the DST SBS. The objective of the evaluation is to advise the Department on whether the projects described in the proposals should be funded or not. The assessment takes into account operational and financial feasibility of projects, alignment thereof with government objectives, economic benefits derived from the project, ability of the organisations to implement the projects successfully and a risk assessment. The project also involved the development of a decision framework based on a Multi-Criteria Decision Method to be used to compare proposals and determine suitability for funding and prioritisation.
- **Independent Evaluation of the Wireless Mesh Network in Government Broadband:** Urban-Econ was appointed to undertake an independent evaluation of the Community Wireless Mesh Networks in the Government Broadband project. Urban-Econ's responsibility was to evaluate the progress of the project and provide recommendations that can be implemented to improve its design and execution.
- **Eskom Ariadne-Eros Power Lines Economic & Agricultural Impact Assessment:** Urban-Econ was appointed to undertake an Agricultural Potential and Economic Impact Assessment for the proposed Ariadne-Eros Transmission Power Line and expansion and upgrade of the related substations in KwaZulu-Natal.
- **Eskom Ingula Pumped Storage Scheme Regional Economic Impact Assessment:** The purpose of the study was to present an assessment of socio-economic impact of the Ingula Pumped Storage Scheme on the national and regional economies.
- **Gauteng Infrastructure Renewal and Investment Plan (GIRIP):** The study involved the formulation of an Infrastructure and Renewal Plan up to 2025 that would transform Gauteng into a competitive Global City-Region. As part of the study a regional model with necessary demographic and economic projects was developed that assisted in identifying future infrastructural needs in the Province.
- **De Hoop Dam Economic Impact Monitoring Framework:** Urban-Econ was approached to develop and set up an integrated and coherent monitoring and evaluation reporting system which will primarily be based on a regional impact assessment model framework to monitor and evaluate the regional socio-economic impacts due to the development of the De Hoop Dam.
- **North West Cluster Performance Analyses:** Urban-Econ was appointed by the North West Office of the Premier to undertake the analysis of statistics tables for six clusters (Human Resource Development, Physical Assets, Resource Base, Governance and Protection, Economic and Social), identify areas that require interventions and propose possible solutions to address the key challenges.
- **Mopani Investment Strategy:** Urban-Econ was appointed by the Mopani District Municipality to formulate an investment strategy for the region with a focus of promoting integrated and sustainable development in the local economy.
- **Socio-Economic Impact Assessment - Proposed Route Operator Business in Mpumalanga:** The project entailed assisting with the preparation of the response to the Request for Applications in respect of Limited Pay-out Machine Licences in the Mpumalanga Province. The study encompassed a macro-level socio-economic analysis of the proposed route operator business in Mpumalanga with a focus on: (a) benefits to the economy in terms of gross geographical product ("GGP"), employment creation, increased household income, skills development and small, medium, micro enterprise ("SMME") development and (b) potential social impact of gaming in the Province.
- **N3 Highway Economic Impact Assessment:** Urban-Econ was appointed to determine the Socio-Economic Impact of the proposed re-routing of the N3 highway around Harrismith and the current link with the N5 Route towards Lesotho and Mangaung.
- **The Mandela Bay Precinct Economic Impact Assessment:** The study entailed conducting an economic-impact assessment of the proposed Mandela Bay Precinct Development in Port Elizabeth. The proposed project was a mixed use development with the main component being a Regional Shopping Centre that will be surrounded by high density residential property, filling stations, light industrial space, a hospital, and a hotel and office space.
- **The City of Windhoek Draft SME Policy:** Urban-Econ was appointed by the City of Windhoek (COW) Local Authority to develop a Draft SME Development Policy Directive to guide future SME promotion and development in the City of Windhoek

- **Harrismith Logistics Hub Impact Assessment:** Urban-Econ Development Economists was appointed to undertake a rapid economic impact assessment study of the proposed Harrismith Freight Logistics Hub ("HLH"). The aim of the study was to determine potential benefits that could be created by the HLH in terms of unlocking the latent development of the area. This technical memorandum presents the results of the study.
- **Megamall Economic Impact Assessment:** Urban-Econ was requested to undertake an economic impact study for the Megamall project to be developed in the Mogale City Local Municipality. The aim of the study was to determine the potential economic impacts emanating from the proposed development. This study involved assessment of socio-economic impacts the proposed project could have on the local economy which could be used in application for funding from commercial banks and government.
- **Coega Ridge Economic and Social Impact Assessments:** Urban-Econ was appointed to undertake an economic and social impact assessment of the proposed Coega Ridge development. The aim of the development was to create a unique and sustainable residential enclave encompassing a "live, work, play and shop" environment including components such as affordable housing, shopping centre, office park, industrial park, community and social facilities, bulk service infrastructure, and public open space.
- **Amanzi Economic & Social Impact Assessment:** Urban-Econ was requested to undertake an economic and social impact study for the proposed Amanzi Estate that included the original homestead of Sir Percy Fitzpatrick, author of Jock of the Bushveld.
- **Limpopo Industrial Parks Resuscitation Assessment:** Urban-Econ was appointed to assess the feasibility of resuscitation of the selected industrial parks in the Limpopo Province. The study included analysis of the economic potential of the selected areas, development of scenarios and formulation of recommendations. Urban-Econ managed the team of sub-consultants.
- **North West PGDS Monitor:** The study encompasses a comprehensive analysis and projections of the achievement of the PGDS targets, reviewing the performance of the Working Groups and providing recommendations regarding actions needed to be taken to address the shortfalls.
- **Sedibelo Economic Impact Assessment:** The study involved conducting an economic-impact assessment of the proposed development utilising, an Input/output model.
- **Hanglip Sustainability Model:** Urban-Econ was appointed to develop a model that could assist decision makers in identifying the most preferred alternative/s for the Hanglip Development. The model was based on the Multi-Criteria Decision-making process.
- **Emalahleni Investment Incentive Package:** Urban-Econ was appointed by the Emalahleni Local Municipality to update the Investment Incentive Package for the Emalahleni Local Municipality.
- **Eastern Cape Industrial Sector Study:** Urban-Econ was appointed by the Eastern Cape Socio-Economic Consultative Council (ECSECC) to undertake an industrial sector study for the Eastern Cape Province. The study provided inputs to the Provincial Industrial Strategy. The focus of the strategy was on provision of support to sectors with the potential for job creation in the Province. In this context, this study aims at identifying the sectors that have the highest potential for uplifting the second economy in the Province and highlighting their growth barriers.
- **Socio-Economic Impact Assessment of the Proposed New Eskom Power Stations in the Witbank Area and Northern Free State:** The study involved conducting a socio-economic impact assessment of the proposed developments utilising an Input/Output model.
- **Sedibeng Investment Incentive Package:** The study encompasses a formulation of an incentive package that would enhance development and investment in the area, as well as promote economic growth. A comprehensive socio-economic analysis of the Sedibeng DM and its Local Municipalities, including growth potential was performed.
- **North West Sustainable Development Indicators Pilot Project:** After completing the North West Sustainable Development Indicators, Urban-Econ was appointed to execute of the pilot project of population the framework. Urban-Econ has been appointed by the North West Province's Office of the Premier to formulate a Sustainable Development Indicator Framework for the North West Provincial Administration. The purpose of the framework is to assist the provincial government authority in the monitoring and evaluation of their progress towards achieving sustainable growth and development.
- **Polokwane Trade Hub:** Urban-Econ assisted by Nyeleti Consulting Engineering, was appointed by Polokwane Municipality to undertake a Polokwane Trade Hub Feasibility study. The feasibility study included investigation of the

potential of Polokwane to develop into a regional trade hub, implications associated with its development and the initiatives, including programs and projects that need to be implemented to realise the vision of Polokwane as a regional trade hub.

- Mpumalanga Job Creation Budget: The project involved an assessment of the provincial budget with respect to its impact on job creation and identification of opportunities to enhance sustainable job creation in the Province.
- Joburg BPO Zone: Urban-Econ was appointed to provide an urban-economic rationale and motivation for the selection of a BPO Precinct in the Joburg Inner City.
- Bekkersdal Skills and Entrepreneurship Development Strategy: The Bekkersdal Skills and Entrepreneurship Development Strategy provides the reader with thorough data on the existing pool of enterprises and entrepreneurs, services and products and existing skills in Bekkersdal, which can be utilised by public and private entities. The document includes Skills Audit and Business Audit Databases in Access format.
- Baralink Economic and Market Study: Urban-Econ has been appointed by Urban Dynamics to undertake an economic and market study of four areas, namely, Baralink, JP's Town, Orange Farm, and Kwadzudza and provide the feedback on potential economic activates that can be introduced to the area in regard to promotion of sustainable livelihoods. This study forms a part of a comprehensive analysis of the abovementioned areas, the purpose of which is to compile a strategy for sustainable housing development, according to the new housing policy, in different regions of Johannesburg Metropolitan area.
- Business Improvement District Strategy for Bekkersdal: Due to the low levels of consumer and business confidence in the Bekkersdal CBD, this project required the formulation of a strategy for the establishment and implementation of a BID for the CBD area of Bekkersdal.
- Expansion of Holcim Cement Plant- Economic Impact Assessment: Urban-Econ has been appointed to assess economic impact of the expansion of Holcim Cement plant in Roodepoort.
- Madiba Bay Leisure Park Regional Mall Market Study: Urban-Econ was commissioned by East Cape Showcase (Ltd.) to conduct empirical market research and compile a specialist market study for the proposed regional retail mall within the North Gate precinct of the Madiba Bay Leisure Park project.
- Social and Labour Plan for Brandbach Mine, Cullinan: In order to insure sustainable development of the industry in the future along with the implementation of national visions on skills development, poverty alleviation, BEE and employment creation, the government has introduced a Skills and Labor Plan, preparation of which became a prerequisite for every mine in the country. Urban-Econ has been appointed to develop such plan for the Brandbach Mine in Cullinan.
- NIPS for POPS Economic Impact: Urban-Econ has been appointed as part of a specialist team to undertake the economic impact assessment of Infrastructure related to Persistent Organic Pollutants (POPS) in South Africa. The focus of the assessment is to formulate clear strategic guidelines related to the impacts of POPS and or their removal/eradication for the Development of National Implementation Plans (NIPS) of the Stockholm Convention on POPS.
- Other Socio-Economic and Economic Impact Assessment Studies for Renewable Energy Projects conducted as part of the Environmental Impact Assessment Processes
- Arriesfontein Solar Energy Park :near Danielskuil in the Northern Cape (100 MW CSP-Tower facility and 225 MW PV solar facility)
- Humansrus Solar Energy Facility: near Postmasburg in the Northern Cape (100 MW CSP-Tower facility)
- Rooipunt Solar Energy Park: near Upington in the Northern Cape (100 MW CSP-Tower facility and 215 MW PV solar facility)
- Farm 198 PV Solar Energy Facility: north of Kimberley in the Northern Cape (210 MW PV solar facility)
- Wag'nbiokiespan PV Solar Energy Facility: near Boshof, the Free State Province (75 MW PV solar facility)

Countries of Work Experience:

- South Africa
- Russia
- Zambia

References:

- Judex Oberholzer
- Email: judex@urban-econ.com
- Cell Phone: +27 82 770 8770

Contact details:

- Elena Broughton
- Email: elena@urban-econ.com
- Cell: +27 82 463 2325

ANITA RAUTENBACH (Pr.Sci.Nat)

Gender Female
Date of Birth 18 March 1971
Languages Afrikaans and English
Driver's license Code 08
Mobile number (+27) 83 305 1516
Email rabiodiversity@gmail.com & akkedis1@gmail.com
Physical/Postal address 13 Killarney Valley View road, Cato Ridge, 0132

BACKGROUND

Anita graduated with a Master's degree in Biological Science from the School of Life Sciences, University of KwaZulu-Natal Durban. Her Master's dissertation investigated patterns and processes of rodent and shrew assemblages in the Savanna Biome of KwaZulu-Natal. Her main interest involves fauna taxonomy, distribution patterns and ecology. She has been involved in various research projects and ecological assessments in southern Africa. Anita has approximately 10 years of in the environmental field and is currently registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP).

ACADEMIC QUALIFICATION

University of KwaZulu Natal – MSc. Biological Science, Durban.

SKILLS

- Fauna assessments;
- Threatened species assessments;
- Small mammal assessments, trapping and identification,
- Desk-based assessments;
- ISO 14001 Legal Compliance Monitoring and auditing (Construction)
- Training – small mammal trapping, handling of live specimens, processing and identification;
- Sample design set-up;
- Data collection and analyses;
- Radiotracking;
- GIS Mapping.

EXPERIENCE THAT HAS A BEARING ON THE SCOPE OF WORK

- Proposed Ingogo Dams Development
Ecological assessment – KwaZulu-Natal
- Proposed housing Development – Kingsburg housing Development
Ecological assessment – KwaZulu-Natal
- Proposed open-cast mining development – Mdzonyane
Ecological assessment – Limpopo Province
- Proposed bridge construction – Standerton
Development of construction work method statements for in-stream works across water courses – Mpumalanga Province
- Proposed housing development – Amaoti
Ecological assessment – KwaZulu-Natal
- Proposed upgrade of road infrastructure
Avian assessment - Ladysmith
- Proposed development of the Mkhuhlu Quarry
Ecological survey - Mpumalanga
- Proposed development of the Shixini 3 Macadamia Orchard
Ecological Assessment – Eastern Cape
- Proposed construction of Ilanga Secondary School, Nkomazi Municipality
Ecological assessment - Mpumalanga

- Illovo Sugar Cane Estate, Illovo Sugar Ltd.
Biodiversity assessment – KwaZulu-Natal
- University of KwaZulu-Natal
Small mammal assessment – KwaZulu-Natal
- Proposed development of a township on the Farm Impala, Nkomazi Municipality
Ecological assessment – Mpumalanga Province
- Buffelsdraai Landfill site, University of KwaZulu-Natal
Small mammal assessment – KwaZulu-Natal
- Proposed development of Mapulaneng hospital, Bushbuckridge Municipality
Ecological assessment – Mpumalanga Province
- Proposed development of a housing Estate, Coral Lagoon (Pty) Ltd
Threatened species assessment – Black headed dwarf chameleon - KwaZulu-Natal
- Proposed development of an Eco-housing Estate
Ecological assessment – Mpumalanga Province
- Proposed construction of a bridge, Umjindi Municipality
Ecological assessment – Mpumalanga Province
- Proposed construction of the Frank Maghinyane School, Bushbuckridge Municipality
Ecological assessment – Mpumalanga Province
- Upgrade of Queen Nandi, Kwamashu and Inanda Interchanges, SANRAL
Fauna assessment – KwaZulu-Natal
- Proposed development of a new dig-out Port in Durban, Transnet Capital Projects
Mammal assessment – KwaZulu-Natal
- Proposed development of a new mine, Base Titatium
Mammal assessment – Kenya
- Bioblitz, Operation Wallacea
Small mammal assessment, Mkhuze Game Reserve – KwaZulu-Natal
- University of KwaZulu-Natal
Small mammal assessment – KwaZulu-Natal
- University of Swaziland - Swaziland
Radio tracking of Wahlberg's epauletted fruit bat - Swaziland
- Durban Natural Science Museum
Bat assessment Paradise Valley – KwaZulu-Natal
- Durban Natural Science Museum
Small mammal assessment – Madagascar
- &Beyond
Small mammal assessment - Phinda Private Game Reserve – KwaZulu-Natal
- Phelindaba – Gauteng
Rodent assessment - Gauteng
- Durban Natural Science Museum
Small mammal assessment - Albert Falls Dam – KwaZulu-Natal
- Durban Natural Science Museum
Small mammal assessments – Ecorat - Swaziland

EMPLOYMENT HISTORY

Rautenbach Biodiversity Consulting – Durban (*Independent Specialist Consultant*)

March 2015 – present (full-time)

- Fauna Assessments;
- Ecological Assessments;
- Biodiversity Assessments;
- Threatened Species Assessments;
- GIS mapping;
- Small mammal assessments;
- Desktop assessments;

- Sample design set-up;
- Data collection and analyses;
- Report writing.

Rautenbach Biodiversity Consulting – Durban (*Independent Specialist Consultant*)

2012 March – March 2015 (part-time)

- Fauna surveys;
- Sample design, data collection, data analyses;
- Basic GIS mapping;
- Report writing;
- Desk-based assessments;
- Training;
- ISO 14001 compliance monitoring and auditing (construction).

GVK Siya Zama Building and Renovations – Durban (*Regional Safety Manager*)

March 2013 – March 2015

- Development of HSE Plans;
- Hazard identification and risk assessments;
- Data analyses;
- Report writing;
- Training;
- Quarterly safety meetings;
- Monthly OHSAS 18001 and ISO 14001 compliance audits.

GVK Siya Zama Building and Renovations - Durban (*Roaming Safety Officer*)

March 2012 – February 2013

- Ensure on-site subcontractor compliance,
- Conduct risk assessments;
- Monthly safety meetings;
- Induction training;
- Incident investigation and report writing;
- Training

Durban Natural Science Museum (Mammal technician)

April 2007 – August 2011

- Acceptance, accessioning, care and loan of mammal specimens;
- Preparation of specimens for addition to museum collections;
- Data entry;
- Biological sampling;
- Co-ordination, organizing and conducting field surveys;
- Assistance with research;
- Mammal identification.
- Training

Dr D Storm (*Receptionist*)

1997 - 2007

- Setting up appointments;
- Ordering;

- Accounts;
- Filing, typing of medical reports.

Drs Smith, Snyman and Partners Diagnostic Radiologists – Pretoria (*Medical typist*)

1992 - 1997

- Making of appointments;
- Typing

Drs Brits and Griessel Pathologists – Pretoria (*Medical typist*)

1990 - 1991

- Typing of pathology reports.

Professional Affiliations

South African Council for Natural Scientific Professions (400725/15).

Publications

- Solano, E., Taylor, P.J., Rautenbach, A., Ropiquet, A., Castiglia, R. 2014. Cryptic speciation and chromosomal repatterning in the African climbing mice *Dendromus* (Rodentia, Nesomyidae). *PLoS One* (DOI:10.1371/journal.pone.0088799).
- Rautenbach, A., Dickerson, T., Schoeman, M.C. 2013. Diversity of rodents and shrew assemblages in different vegetation types of the savannah biome in South Africa: no support for nested subset or competition hypotheses. *African Journal of Ecology* 5(1) pp. 30-40.
- Taylor, P.J., Rautenbach, A., Schoeman, M.C., Combrink, X. 2007. A winter survey of the smaller mammals of the uMkhuze section of the iSimangaliso Wetland Park, KwaZulu-Natal Province, South Africa. (<https://www.researchgate.net/228787004>).

REFERENCES:

Prof P J Taylor

Professor Mammalogy
015-962 8504

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031-260 1161
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Dr L Richards

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031-322 4215
Leigh.Richards@durban.gov.za

Mr Andrew Batho

Afzelia Environmental Consultants
(+27) 83 601 9411
andrew@afzelia.co.za

CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

MICHAEL PAUL OBERHOLZER

Proposed Position: Risk Assessor
Name of Firm: RISCOM (PTY) LTD
Name of Staff: Michael Paul Oberholzer
Profession: Chemical Engineer
Date of Birth: 20 August 1959
Years with Firm/Entity: 13
Nationality: South African

Membership in Professional Societies:

- Registered Professional Engineer (Registration No.: 910085) with the Engineering Council of South Africa
- Member of the South African Institute of Chemical Engineers
- Member of the Institute of Chemical Engineers (UK)
- Approved Inspection Authority for Major Hazard Installation (MHI) Risk Assessments, South Africa
- Technical Steering Committee for Risk Assessments

Key Qualifications:

Michael Oberholzer is currently director of RISCOM. He is a registered professional engineer and holds a BSc (Chemical Engineering) from the University of the Witwatersrand (1982). Mike has over 20 years of experience with Dow chemicals and Sentrachem in all aspects of project implementation. This includes Process Engineering Manager, Project Manager and Commissioning Manager. Since leaving Dow, Mike has concentrated on process safety and has completed a number of risk assessments studies and process hazard analyses in various industries, including assignments in the chemical, petrochemical, agrochemical, mining, offshore oil and gas and food industries.

Relevant projects are included in the following sections.

NUCLEAR

2008-present	Safety report for marine and land-based incidents for proposed nuclear sites
2008	Safety report for aircraft accidents into nuclear facility
2008	Appointed to conduct risk assessment of fuel plant, Pelindaba
2006	Risk assessment of tank farm, for PBNR
2005	Consequence analysis of fuel plant layout, Pelindaba
2003–2005	Chairman of HAZOP studies for PBNR

OIL AND GAS

Lead Process Engineer for quantitative risk assessment of:	
2015	A natural gas pipeline for the Transnet in Durban North
2014	LNG facilities for the CSIR in the Western Cape
2014	LNG overland pipeline in Groutville, KwaZulu-Natal
2013	LPG installations for NGK, Cape Town
2013	LPG installations for Easigas (Port Shepstone)
2013	LPG installations for Sunrise Energy in Saldanha Bay
2012	LPG installations for Trellidor, Durban
2011	LPG installations for Afripak, Durban
2010–2011	LPG installations for Monsanto, Brits and Groblersdal
2010	LPG installations for Air Liquide
2009	A compressed natural gas plant, Gauteng
2004-2005	The Egoli Gas depots in Langlaagte and Cottesloe

Lead Process Engineer for:

2006	An emergency plan and oil spill contingency for Petronas, with regards to offshore drilling (Mozambique)
2006	Determination of hazardous areas from releases of H ₂ S from vents and pipelines
2005	Flare studies for Total facilities in Angola The studies consisted of calculating the radiation from flares at various locations and the subsequent evaluation of the safety distances from the flares The studies included air dispersion for H ₂ S in the event of flameout

TANK FARM AND FLAMMABLE STORAGE AND TRANSPORTATION

Lead Process Engineer for quantitative risk assessment of:	
2015	A bulk crude-oil tank farm for Oiltanking MOGS in Saldanha Bay
2014	The First Rand Bank data centre facilities in Pretoria and Johannesburg
2014	The Vopak facility in the Island View Complex in Durban
2014	The Econ Oil facility in Marble Hall, Limpopo
2014	An occupied building risk assessment of BP facilities in Mozambique
2013	The Air BP facility in East London
2013	A crude storage facility at Saldanha Bay
2013	VSAD Terminal Lesedi at Heidelberg
2012	Kenmare Moma Mine in Mozambique
2012	Golder Africa study for tank farm (LPG and other fuels) near Heidelberg, Gauteng
2012	CSIR study for tank farm (LPG and other fuels) at Coega, Eastern Cape
2011-2012	BP fuel depots at Langlaagte and Pretoria
2010	Transnet Pipelines fuel depots around South Africa
2008	Multi-product tank farms in the Island View Complex in Durban
2007	Petroleum tank farm in the Western Cape
2005	An overland pipeline near Mossel Bay
2005	Holcim waste fuel blending
2004	Petroleum tank farms in Island View Complex in Durban and the Western Cape

Lead Process Engineer for:

- 2004 'Fatal flaw' analysis for PetroSA to determine the suitability of proposed design on an existing site
The study covered separation distances, domino effects and minimum instrumentation to meet acceptable risks using layer of protection analysis (LOPA)

POWER PLANTS

Lead Process Engineer for quantitative risk assessment of:

- 2015 An Eskom power plant in the Free State
2013 A refurbished power plant in Maputo, Mozambique
2012 Matla power station in the Witbank areas
2012 Energy recovery project for Anglo American
2010 Coal-based power plants in the Witbank areas
2009 Coal-based power plants in the Waterberg areas
2008 Proposed gas-fired power plants in Mozambique
2008 The conversion of the peaking power to a CCGT plant located at Atlantis, Western Cape
2006 Coal-based power plants near Witbank and Vaal South
2006 Proposed peaking power plants in KZN and Eastern Cape
2006 The expansion of the peaking power plant located at Atlantis, Western Cape
2005 The EcoElectrica Independent Power Generation Project at Mittal Steel in Vanderbijlpark
2004 Iscor Power Project at Vanderbijl Park

FOODS AND BEVERAGES

Lead Process Engineer for quantitative risk assessment of:

- 2015 A soya crushing facility for RussellStone Protein in Bronkhorstspruit
2014-2015 The Spar distribution centres in the South Rand, North Rand and Eastern Cape
2014 The Sasko Bakery facility in Bloemfontein
2014 The Peninsula Beverage Company facility in Cape Town
2014 The Chill Beverages International facility in Stellenbosch
2014 The Kynoch fertiliser facility in Endicott, Gauteng
2013-2014 The Coca-Cola Fortune facilities in Port Elizabeth, Port Shepstone and Polokwane
2013 The Quantum Food chicken processing plant at Hartesbeesfontein
2013 The ABI bottling facility in Johannesburg reviewed
2013 The new Unilever ice cream factory facilities at Chloorkop
2011 The Rainbow Chickens processing plant, Rustenburg
2010 The Famous Brands facility in Midrand
2010 The McCain Foods facility in George
2010 The Coca-Cola Canners facility in Germiston
2005 The ABI bottling facilities in Johannesburg, Midrand and Pretoria

CHEMICALS AND MANUFACTURING

Lead Process Engineer for quantitative risk assessment of:	
2015	Two SA Calcium Carbide facilities in KwaZulu-Natal
2015	The Arch Wood Protection facility in Port Shepstone
2015	The Arengo ethanol plant in Cradock
2015	A water reclamation facility at the Optimum Colliery in Mpumalanga
2014	The Foskor facility in Richards Bay
2013	The Eagle Inks facility in Pinetown
2013	New bio-generation plants converting animal waste to electricity
2013	The Unilever facility in Phoenix, Durban
2013	A rapid wall facility in Richards Bay
2013	The Transnet Rail Engineering facilities in Germiston and Uitenhage
2012	The BAE Systems Land Systems facility in Alrode
2012	The Consol Glass facility in Nigel
2012	An ArcelorMittal polyurethane facility
2012	Isegen facilities at Durban and Germiston
2012	A MAP plant in Richards Bay
2012	An occupied building risk assessment and hazardous area classification for Synthomer, Durban
2012	New hydrogen fluoride and trialuminum fluoride plant in Richards Bay
2012	The Chevron lubricant manufacturing facility
2011	Steel plant in Witbank
2011	Steel plant in Saldanha Bay
2011	Platinum refinery in Springs
2011	New hydrogen fluoride and trialuminum fluoride plant in Gauteng
2010	Steel plant in Cato Ridge
2010	A bulk argon storage facility in Johannesburg
2009	An aluminium fluoride plant in KwaZulu-Natal
2009	Shell Chemicals, Durban
2009	The Unico facility in Durban
2008	The Revertex facility in Durban
2007	A new chlor-alkali facility in the Eastern Cape
2002–2008	Ammonia refrigeration plants throughout South Africa
2007	Alkylation plant in KwaZulu-Natal
2006	The Element Six facility in Springs
2006	The Singisi Forest Products wood product facility in Kokstad
2006	The Lanxess facility in Merebank, Durban
2006	A 900 t butane storage facility in Durban
	This study considered fires and explosions from an accidental loss of containment of material
2005	Impala Platinum BMR expansion
	This included the consequent modelling of fires and explosions of flammable liquid and gases as well as air dispersion of toxic gases
2005	NCP Chlorchem expansion
	This included the consequent modelling of fires and explosions of flammable liquid and gases as well as air dispersion of toxic gases
2005	The Dow Chemical Company facilities at Canelands, Chloorkop, Sasolburg and Berlin
	This included the consequent modelling of fires and explosions of large flammables and toxic gases
2004	The Magalies Water purification plant at Vaalkop
2003	PetroSA converting floating-roof tanks into MTBE storage tanks at the refinery and export terminal

REFINERIES

Lead Process Engineer for quantitative risk assessment of:

- 2009 A refinery expansion in Suriname
- 2006 Fire zoning classification of Saudi Aramco's Luberef facility, Saudi Arabia
The study defined the fire zones as per the requirements of Saudi Aramco
- 2006 Building risk assessment of the Saudi Aramco Luberef facility, Saudi Aramco
The study consisted of a full quantitative risk assessment as per API 752
- 2005 PetroSA refinery near Mossel Bay

HAZOP AND LOPA STUDIES

HAZOP Chairman for:

- 2010 to present BP Southern Africa
- 2015 An ice-cream factory for Unilever at Chloorkop
- 2015 The national multi-product pipeline for Transnet in Durban
- 2015 Fuel transport pipelines for Oiltanking MOGS in Saldanha Bay
- 2014 The Enerwaste medical waste facility in Waltloo, Pretoria
- 2014 The Tongaat-Hulett Starch mill in Germiston
- 2014 The VTTI Burgan Oil facility in Cape Town
- 2013 The Sunrise Energy LPG terminal in Saldanha
- 2013 The SimsGas facility in Chamdor
- 2013 The Vanchem Vanadium Products facility in eMalahleni
- 2013 The ArcelorMittal facility in Newcastle
- 2013 The Proxa brine treatment facility in New Vaal
- 2010 Sasol projects at Secunda and Sasolburg
- 2009 A cogeneration plant, Rustenburg
- 2008 A new section of AngloGold Ashanti, Tanzania
- 2007–2010 A chrome chemical facility, KZN
- 2007 Chlorine expansion, Gauteng
- 2007 LOPA study for a large LPG installation and chemicals, Durban
- 2004–2004 Project upgrades at petroleum tank farms
- 2003–2005 Proposed nuclear installation at PBMR
- 2002–2004 Chevron on eight oil platforms off the coast of Cabinda

Education:

BSc (Chemical Engineering), University of the Witwatersrand, South Africa, 1982

Employment Record:

- 2002 to date **Director, RISCOP, South Africa**
Involved in process safety consulting including MHI risk assessments and facilitating process hazard analysis studies (HAZOP, SIL & LOPA)
- 2001–2002 **Managing Member, Penoc Consulting, South Africa**
Involved in Process Engineering Project Management and Process Safety Consulting for various projects
- 1995–2001 **Process Manager for Dow Chemicals, South Africa**
Managed the cost estimation, project approvals, process designs and commissioning of various plants within the group
- 1993–1995 **Technical Manager for Sentrachem, Durban South Africa**
Managed the Technical Department of a facility conducting technical investigations, projects and continual plant improvements
- 1986–1993 **Process Engineer for Sentrachem, Germiston, South Africa**
This involved conducting plant investigations, design of new plants, installing and commissioning new equipment

Languages:

	Speaking	Reading	Writing
English (first)	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Average

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.



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Date: 31st of March 2016

Full name of staff member: Michael Paul Oberholzer

Profession

Traffic & Transportation Engineer

Current Position

Western Cape
Senior Transportation Engineer

Date and Place of Birth :

15 July 1961, Cape Town

Joined Techso:

2008

Nationality

South African

Academic Qualifications

NHD in Civil Engineering, Cape Technikon
1989

Professional Associations

The Engineering Council of South African
(ECSA)

Specialisation

Traffic Engineering and Transportation
Planning

Languages

Afrikaans, English

Appointments

- 1986– 1992: Principal Industrial and (1986 - 1991) Industrial Technician:
Geometric Design: Provincial Administration: Western Cape
- 1993– 1994: Chief Industrial Technician:
Mapping and Proclamations:
Provincial Government: Western Cape
- 1994 – 1995: Chief Industrial Technician
Regional Services: Provincial Government: Western Cape
- 1995 - 1996: Chief Industrial Technician,
Urban Transportation: Provincial Government: Western Cape
- 1997 – 1998: Senior Technician, Kantey and Templer
- 1998 - 2006: Principal Technician: Traffic Engineering, City of Cape Town
- 2006 – 2008: Regional Head, Traffic Impact Assessments and Development Control, City of Cape Town
- 2008 - Senior Transportation Engineer, Techso

Contact Details

Phone: +27 (0) 21 5577730
Mobile: +27 (0) 84 300 7722
E-mail: steve@techso.co.za

Key Experience

Stephen is a traffic engineering technologist with 27 years of experience in traffic and transportation engineering. He has completed the Transportation Planning and Study Methodology course and the Highway Capacity course at the University of Stellenbosch. Stephen has been involved with civil, traffic and transportation engineering for ten (10) years at Provincial Government of the Western Cape, 1,5 years with Kantey and Templer Consulting Engineers and 10 yrs at local authority/city level and joined Techso in August 2008.

Traffic & Transportation:

- Transportation Planning
- Traffic Engineering
- Road Safety Audits

Projects:

- Local Traffic Engineering and Transportation Plans, such as Traffic Signal Design, Traffic Calming, Parking, Road Safety Audits, Road Design, Road Signs and Lane Marking for City of Cape Town.
- Developed Structure Parking Ramp Design Guidelines for the City of Cape Town.
- Project Management: Blaauwberg Road and Diep River Bridge Design, Milnerton
- Transport Systems Management Project Design and Implementation (City of Tygerberg & City of Cape Town)
- Technical Input to the City of Cape Town Kerbside Adjudication Bid Evaluation Committee.
- Various Traffic Impact Studies: Mtubatuba Weigh Station Facility
- Project Management sub-consultant: City of Cape Town - Integrated Rapid Transport intersection and traffic signal design.
- Traffic Engineer sub-consultant: City of Cape Town - Conceptual design of Eastern Region non-motorised transport project
- Transport Impact Assessments – Various
- Transportation Modelling – TIA for Windhoek Prime Ministers Offices
- Rustenburg Municipality – Integrated Rapid Transport System – AFC
- Ekhurleni Municipality – Integrated Rapid Public Transport Network – AFC and APTMS
- Nelson Mandela Bay Municipality – Integrated Public Transport System – AFC and APTMS
- Road Safety Audits – City of Cape Town - Integrated Rapid Transit Phase 1B

CURRICULUM VITAE

Family name: Louw
First names: Robert Truter
Date of birth: April 06, 1960
Gender: Male
Nationality: South African
Civil status: Married

Education:

Institution (Date from - Date to)	Degree(s) or Diploma(s) obtained:
University of South Africa (1984 – 1988)	B Com (Hons) (Economics)
University of Pretoria (1979 – 1982)	Bachelor of Science in Engineering (Chemical)

Language skills: Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
Afrikaans	1	1	1

Membership of professional bodies: Institute of Directors in South Africa (IoDSA), South African Institute of Mining and Metallurgy

Other skills:

General: Microsoft office proficiency

Revision of CDM methodologies: AMS-II.D. Energy efficiency and fuel switching measures for industrial facilities (inclusion of mining sector projects), ACM0017 Production of biodiesel for use as fuel (inclusion of seed-oil as feedstock).

GHG mitigation methodology development: Wrote and acted as team leader for the writing of CDM methodologies – AM0064 Capture and utilisation or destruction of mine methane (excluding coal mines) or non-mine methane, AMS-II.K. Installation of co-generation or tri-generation systems supplying

energy to commercial building, AMS-III.W. Methane capture and destruction in non-hydrocarbon mining activities.

Carbon credits: 2008, 2009 and 2014 Public course on carbon credits – presenter at annual two day training course

2010 Industrial Development Corporation – presenter at two day training course on carbon financing

Numerous in-house training events for clients on carbon trading, carbon neutrality, credible baselines and offset projects

Present position: Director and founding member, Promethium Carbon

Years within the firm: 12 years

Key qualifications: B Com (Hons) (Economics), Bachelor of Science in Engineering (Chemical)

Specific experience in the region:

Robbie is the founder and director of Promethium Carbon. He has 10 years of experience in the climate change industry. His experience over a period of 28 years covers the chemical, mining, minerals process and energy fields, in which he was, involved in R&D, project, operational and management levels.

- Climate change: he has been active in the development of CDM projects since 2003.
 - Clean Development Mechanism (CDM): He was the leader of the team that produced 3 CDM methodologies and registered 11 CDM projects and 4 CDM Programmes of Activity.
 - Carbon foot printing: He has extensive experience in carbon foot printing. The team under his leadership has performed carbon footprint calculations for major international corporations operating complex businesses in multiple jurisdictions and on multiple continents. Some examples include farming operations (ex. Backsberg Wine Estate), agro-processing (ex. Tongaat Hulett Starch) and other industrial and mining clients.
 - Terrestrial carbon stock impact assessments: He was team leader on a number of projects that estimated the impact on carbon stocks following the impact of the implementation of land based projects. Examples include: REDD+ project in Uganda, large scale biofuel farming in Zambia, large scale opencast mining operations in Gabon and Congo (Brazzaville).
 - Carbon strategy development: He has developed carbon and climate change strategies for major international corporations including Anglo American, Gold Fields and Harmony Gold.
 - Carbon Disclosure Project (CDP): He has managed the CDP disclosure for major international corporations. The Climate Disclosure leadership index scores (2014) of these companies

include Gold Fields – 100%, Anglo American Platinum – 99%, Kumba Iron Ore – 98% and Harmony Gold – 98%

- Project Development: He has extensive experience in project development in the energy, chemical and mining industries. This covers the scope from project identification, feasibility studies to project implementation. Some examples include carbon sequestration projects focussed on the restoration of impacted grasslands and mining impacted land at Gold Fields and Harmony Gold and GHG mitigation projects in many industries including farming, mine land restoration and bio-energy production.
- Project leader on a number of Climate Change Impact Assessments as part of the Environmental Impact Assessment
- Team leader for the data and framework development under the Integrated Energy Plan for South Africa. The development of the Reference Energy System and the compilation of supply side data was an integral part of our project and quality controlled by the CSIR.
- Carbon trading systems: Leader author for numerous publications on the design of a potential carbon trading system for South Africa, including *Carbon Trading in South Africa - Trading Offsets Against The Proposed Carbon Tax* (March 2014) and *Potential Alignment Between The Proposed South African Carbon Offset Trading Scheme And The Carbon Budget Approach* (September 2014).

Country	Date from - Date to
South Africa	Projects throughout the country – office in Johannesburg
Kenya	Projects started Oct 2007 – ongoing (CDM project development as well as drafting of standardised baseline for the electricity system grid emission factor)
Zambia	(Desk top) project started Jan 2009- completed May 2009
Ghana	Project started 2006 - ongoing
Namibia	2011-2013

Professional experience

Date from - Date to	Company & reference person (name & contact details)	Position	Description
2003 - Present	Promethium Carbon (Pty) Ltd	Founder and director	Climate change specialist firm
2010 - Present	Steenkampskraal Thorium Ltd Reference Trevor Blench (trevor.blench@thorium100.com)	Co-founder and non-executive director	The company is commercialising low carbon energy alternatives base on the utilisation of thorium as fuel.
1995 - 1998	Rare Earth Extraction Company Ltd Reference Trevor Blench (trevor.blench@thorium100.com)	Managing director	Mining company listed on venture capital board of the JSE
1999 - 2010	Rare Earth Extraction Company Ltd Reference Trevor Blench (trevor.blench@thorium100.com)	Non-executive director	Mining company listed on venture capital board of the JSE
1992 - 1995	Chromachem	Founder and managing director	Pigment manufacturing business
1989 - 1992	Process and Mining Consultants	R&D Manager	Manager of R&D laboratory focussed on the development of mineral separation processes.
1984 - 1989	National Chemical Products	Development Manager	New business development

Date from - Date to	Company & reference person (name & contact details)	Position	Description
1983 - 1984	Atomic Energy Corporation of South Africa	Engineer in Training	R&D in the nuclear fuels industry

Other relevant information (e.g., Publications)

Robbie is the lead author of numerous Promethium Carbon publications including:

- *Climate Change in Integrated Reporting, Complementary Disclosure Practices for a Sustainable Future* (March 2012) – this document mapped the reporting needs for climate change issues against the reporting framework of the International Integrated Reporting Council.
- *Carbon Pricing Scenarios* (July 2013) – this document summarised the global trends in carbon market developments worldwide.
- *Carbon Trading in South Africa - Trading Offsets Against The Proposed Carbon Tax* (March 2014)
- *Potential Alignment Between The Proposed South African Carbon Offset Trading Scheme And The Carbon Budget Approach* (September 2014)