



DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

NAME OF CONSULTANT: WSP ENVIRONMENTAL (PTY) LTD

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ASHLEA STRONG, MEM, EAP

PRINCIPAL CONSULTANT (ENVIRONMENTAL SERVICES), ENVIRONMENT & ENERGY



YEARS WITH THE FIRM

4

YEARS TOTAL

14

PROFESSIONAL QUALIFICATIONS

CEAPSA

AREAS OF PRACTICE

Auditing

Energy

Environmental Control

Health & Safety

Infrastructure

Mining

SEIR

Training

Waste Management

LANGUAGES

CAREER SUMMARY

Ashlea is a Principal Consultant with 14 years' experience in the environmental field. She currently provides technical and strategic expertise on a diverse range of projects in the environmental management field, including environmental scoping and impact assessment studies, environmental management plans, waste and water management, as well as the provision of environmental management solutions and mitigation measures

Ashlea has been involved in the management of a number of large EIAs specifically within the energy sector such as the Medupi Power Station, and Pebble-Bed Modular Reactor (PBMR) and numerous Transmission Powerlines. She also has environmental auditing and training experience and expertise.

Ashlea holds a Masters in Environmental Management; a BTech (Nature Conservation), and a National Diploma (Nature Conservation); She is also a Certified Environmental Assessment Practitioner of South Africa (CEAPSA).

EDUCATION

Masters in Environmental Management, University of the Free State, South Africa 2006

B Tech, Nature Conservation, Technikon SA, South Africa 2001

National Diploma in Nature Conservation, Technikon SA, South Africa 1999

ADDITIONAL TRAINING

Conduct outcomes based assessment (NQF Level 5), South African Qualifications Authority (SAQA) 2009

PROFESSIONAL MEMBERSHIPS

Certified Environmental Assessment Practitioner of South Africa, with the Interim Certification Board (CEAPSA) 2010

PROFESSIONAL EXPERIENCE

Energy Sector

- Southern Energy Coal Fired Power Station (2016): Project Manager. This project involved the high-level review of the Environmental Impact Assessment for the Southern Energy Coal Fired Power Station near Hwange in Zimbabwe against relevant legislation and standards. Client: WSP | Parsons Brinckerhoff.
- Proposed Solar and Wind Projects located in the Northern and Western Cape Provinces (2015) Project Manager. This project involved the compilation of 15 Environmental Impact Assessments and Environmental Management Plans for 2 Solar and 2 Wind energy Projects near Aggenys and Sutherland respectively. Client: BioTherm Energy (Pty) Ltd.
- Proposed Solar Park, Northern Cape Province, South Africa (2012): Strategic Environmental Advisor. This project involved the provision of process expertise for the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Solar Park in the Northern Cape Province. Client: Central Energy Fund (CEF).

- Proposed Tabor - Nzhelele 400kV Transmission Lines and associated infrastructure, Limpopo Province, South Africa (2012): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 100km 400kV powerline between Louis Trichardt and Musina in the Limpopo Province. Client: Eskom Transmission.
- Retrofitting of the existing Electrostatic Precipitators with Fabric Filter Plants at Units 2, 3 and 4 at the Grootvlei Power Station, South Africa (2012): Project Manager. This project involved the compilation of a Basic Assessment Report and Environmental Management Plan for the proposed retrofitting of the existing Electrostatic Precipitators with Fabric Filter Plants at the Grootvlei Power Station. Client: Eskom Holdings SOC Limited.
- Proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations, Musina, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations in the Musina area of the Limpopo Province. Client: Parsons Brinkerhoff Africa and Mulilo Power.
- Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure, Western Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
- Proposed Bantamsklip – Kappa 765 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for four 260km 765kV powerlines between the Bantamsklip Nuclear Power Station Site and the proposed new Kappa Substation in the Karoo, Western Cape Province. Client: Eskom Transmissions.
- Proposed Bantamsklip – Bacchus, Bacchus - Kappa and Bacchus – Muldersvlei 400 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a number of 400kV powerlines between the Bantamsklip Nuclear Power Station Site and a number of substations, including Bacchus, Kappa and Muldersvlei, in the Western Cape Province. Client: Eskom Transmission.
- Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure in the Gauteng Province. Client: Eskom Distribution – Central region.
- Environmental Scoping Study for the proposed new distribution line and substation for Eskom, Dundonald, Mpumalanga (also involved in the Public Participation Process), Mpumalanga, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng.
- The proposed new 132 kV sub-transmission line between the Dinaledi and GaRankuwa substations for Eskom, GaRankuwa, North West, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a



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- 132kV powerline between the Dinaledi and GaRankuwa substations in the GaRankuwa area of the North West Province. Client: Eskom Distribution.
- Expansion of the Transmission powerline network and associated infrastructure between the Perseus substation and the Beta substation, Free State, South Africa (2008): Project Manager. This project involved the compilation of an alignment specific construction Environmental Management Plan for the 13km 765kV Perseus Beta Turn-ins. Eskom Transmission
 - Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng. Client: Eskom Distribution – Central Region.
 - Basic Assessment for the proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2008): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for a new 88kV powerline near Mmabatho in the North West Province. Client: Eskom Distribution – Central Region.
 - Proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Watershed – Mmabatho 88kV Power line in the North West Province. Client: Eskom Distribution – Central Region.
 - Proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba, Mpumalanga, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
 - Proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure, Western Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
 - Proposed Concentrated Solar Thermal Plant in the Northern Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Concentrated Solar Thermal Plant near Upington in the Northern Cape Province. Client: Eskom Holdings SOC Limited.
 - Proposed Underground Coal Gasification plant, Eskom, Mpumalanga, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Underground Coal Gasification plant near the Majuba Power Station in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
 - Proposed new Coal-fired Power Station in the Lephalale Area for Eskom, Limpopo, South Africa (2005): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed new Coal-fired Power Station in the Lephalale Area in the Limpopo Province. Client: Eskom Generation.
 - Proposed Open Cycle Gas Turbine Power Station at Atlantis for Eskom, Western Cape, South Africa (2005): Environmental Consultant. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Open Cycle Gas Turbine



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Power Station at Atlantis in the Western Cape Province. Client: Eskom Generation.

Infrastructure Sector

- Rehabilitation of the R34 between Vryburg and Schweizer-Reneke, North West, South Africa (2016): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the R34 between Vryburg and Schweizer-Reneke. Client: SANRAL
- Proposed Expansion of the Cremation Facilities at the Envirocin Pet Crematorium, Gauteng, South Africa (2013): Project Manager. This project involves the compilation of a basic assessment for the expansion of the cremation facilities at the Envirocin Pet Crematorium in Kyasands, Gauteng Province. Client: Envirocin Incineration Systems CC.
- Proposed Kraft Paper Mill in Frankfort, Frankfort, Free State, South Africa (2013): Project Manager. This project involved the undertaking of an Environmental Impact Assessment, including the compilation of an Environmental Management Programme, for the proposed establishment of a KRAFT paper mill in Frankfort in the Free State Province. Client: Industrial Development Corporation of SA (Pty) Ltd.
- Rehabilitation of the N14 between Delerayville and Sannieshof, North West, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the N14 between Sannieshof and Delerayville as well as the construction of a new bridge over the Hartsriver. This project also included the compilation of Water Use License and Mining Permit Applications. Client: SANRAL.
- Proposed new Waterfall Cemetery, Limpopo, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the new Waterfall Cemetery, Limpopo Province. Client: Makhado Municipality.
- Route determination of the proposed Metro Boulevard, Gauteng, South Africa (2008): Project Manager. This project involved the undertaking of an Environmental Impact Assessment for the route determination of the proposed Metro Boulevard in the Weltevreden Park Area of the Gauteng Province. Client: Johannesburg Roads Agency.
- Proposed new fuel supply pipeline between Milnerton and Atlantis, Western Cape, South Africa (2007): Project Manager. This project involved undertaking an Environmental Impact Assessment for the proposed new fuel supply pipeline between Milnerton and Atlantis to supply the Ankerlig Power Station in the Western Cape Province. Client: Eskom Generation.

Mining Sector

- Establishment of the Proposed Rietvlei Opencast Coal Mine, Mpumalanga, South Africa (2013): Project Manager. This project involves the undertaking of an integrated environmental authorisation process, including an Environmental Impact Assessment, Environmental Management Programme Report, Waste Management License Application and Water Use License Application, for the establishment of an opencast coal mine north of Middelburg. Client: Rietvlei Mining Company.
- Decommissioning of Redundant Infrastructure at the Vaal River Operations, North West and Free State, South Africa (2013): Project Manager. This project involves undertaking an integrated Environmental Authorisation and Waste Management License process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's Vaal River Operations. Client: AngloGold Ashanti.



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- Decommissioning of Redundant Infrastructure at the West Wits Operations, Gauteng, South Africa (2013): Project Manager. This project involves undertaking a Basic Assessment process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's West Wits Operations. Client: AngloGold Ashanti (Pty) Ltd.
- Inyanda Mine Pegasus South Expansion, Mpumalanga, South Africa (2011): Project Manager. This project included the compilation of an Environmental Impact Assessment, Environmental Management Plan, the Amendment of the existing Environmental Management Programme Report and the amendment of the existing Water Use License for the Inyanda Mine Pegasus South Expansion project, north of Middelburg in the Mpumalanga Province. Client: Exxaro Coal (Pty) Ltd.
- Sishen Infrastructure Program, Northern Cape, South Africa (2010): Project Manager. This project involved the compilation of an Environmental Impact Assessment and an Environmental Management Plan for the infrastructure expansion programme proposed by the Sishen Mine in the Northern Cape. Client: Sishen Iron Ore (Pty) Ltd.
- Prospecting Permit Applications in the Kuruman area of the Northern Cape, South Africa (2011): Project Manager. This project involved the compilation of Environmental Management plans as part of six applications for Prospecting Permits in the Kuruman area of the Northern Cape. Client: Sound Mining Solutions.
- Borrow pits required by the Limpopo Department of Roads and Transport, Limpopo, South Africa (2010): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the rehabilitation of provincial roads in the Limpopo Province. Client: Limpopo Department of Roads and Transport.
- Borrow pits required for the Medupi Coal Fired Power Station, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Medupi Coal Fired Power Station in the Limpopo Province. Client: Eskom Generation.
- Borrow pits required for the Ingula Pumped Storage Scheme, KwaZulu-Natal, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Ingula Pumped Storage Scheme in the Kwa-Zulu Natal Province. Client: Eskom Generation.
- Project Manager, Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme, Mpumalanga, South Africa (2007): Project Manager. This project entailed the compilation of the required Environmental Management Programme Report in support of a Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme in the Mpumalanga Province. Client: Eskom Generation.
- Renewed Mining and Prospecting Activities on the farm Quaggaskop 215, Vanrhynsdorp, Western Cape, South Africa (2004): Environmental Consultant. This project involved the compilation of an Environmental Management Programme Report for the recommencement of mining and prospecting activities on the farm Quaggaskop 215 outside Vanrhynsdorp in Western Cape Province. Client: Minexpo.

Waste Management Projects

- Proposed continuous Ashing at Majuba Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation



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- Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Majuba Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
- Proposed continuous Ashing at Tutuka Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Tutuka Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
 - Proposed extension of Ash Dams at Hendrina Power Station, Mpumalanga, South Africa (2011): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed extension of the ash dams at the Hendrina Power Station in Mpumalanga. Client: Hendrina Power Station.
 - Phase 1 of the Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility, Eastern Cape (2005). Project Manager. This project entailed the compilation Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility in the Eastern Cape. Client: Coega Development Corporation.

Specialist Projects

- Strategic Environmental Assessment for the Development. Master Plan Greater Port Harcourt, Rivers State, Nigeria, Africa (2008): Senior Environmental Consultant. This project entailed the compilation of a Strategic Environmental Assessment for the City of Port Harcourt as part of the development of the Master Plan for the Greater Port Harcourt Area. Client: Port Harcourt Government
- Development of an Environmental Policy, Gauteng, South Africa (2006): Environmental Consultant. This project entailed the development and compilation of an environmental policy for the Ekurhuleni Metropolitan Municipality. Client: Ekurhuleni Metropolitan Municipality.
- Environmental Input into the National Transport Master Plan, South Africa (2007): Environmental Consultant. This project included the provision of strategic environmental input in to the Draft National Transport Plan. Client: Department of Transport.
- Development of the Development Corridors, Ekurhuleni, Gauteng, South Africa (2006): Environmental Consultant. This project included the provision of strategic environmental input in to the Ekurhuleni Metropolitan Municipalities Development Corridor Study. Client: Ekurhuleni Metropolitan Municipality.

Auditing

- Compliance Audit for the Bokpoort Concentrating Solar Power (CSP) Facility, Groblershoop, Northern Cape, South Africa (2016): Lead Auditor. This project involved the environmental compliance auditing of the Waste Management License, Environmental Authorisation and Water Use License for the Bokpoort CSP Facility near Groblershoop in the Northern Cape Province. Client: ACWA Power Solafrica Bokpoort CSP Power Plant (Pty) Ltd.
- Compliance Audit for the Waste Recycling Facility and Redundant Materials Management Yard, Secunda, Mpumalanga, South Africa (2016): Lead Auditor. This project involved the environmental compliance auditing of the Waste Management license and other relevant permits for Waste Recycling Facility and Redundant Materials Management Yard in Secunda in Mpumalanga Province. Client: Sasol Chemical Industries: Secunda Synfuels Operations.



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- InvestChem Annual Environmental Compliance Monitoring, Kempton Park, Gauteng, South Africa (2013 - 2016): Lead Auditor. This project involved the annual environmental compliance auditing for InvestChem's Sulphonation Plant in Kempton Park, Gauteng Province. The monitoring included InvestChem's compliance to various commitments contained in their environmental management programmes and conditions within their environmental authorisations (records of decision). Client: Investchem (Pty) Ltd.
- Waste Management License Audit for the Sasol Waste Ash Site, Secunda, Mpumalanga, South Africa (2014 - 2016): Lead Auditor. This project involved the annual environmental compliance auditing of the Waste Management license for Sasol's Waste Ash Site in Secunda in Mpumalanga Province. Client: Sasol Chemical Industries: Secunda Synfuels Operations.
- EMPR Performance Assessment Report for the Landau Colliery, Mpumalanga, South Africa (2013): Auditor. This project involved the formal assessment and verification of the Landau Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo Thermal Coal.
- Waste Management License Audit for the Slagment Operation, Vanderbijlpark, Gauteng, South Africa (2013): Lead Auditor. This project involved the annual environmental compliance auditing for AfriSam's Slagment Operation in Vanderbijlpark in Gauteng Province. The audit included AfriSam's compliance to the conditions of their waste management license. Client: AfriSam Southern Africa (Pty) Ltd.
- EMPR Performance Assessment Report for the New Vaal Colliery, Free State, South Africa (2006-2007): Auditor. This project involved the formal assessment and verification of the New Vaal Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo American Thermal Coal.

Environmental Control Projects

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer and SANRAL. Client: SANRAL.
- Delmas and Bontleng Waste Water Treatment Works, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved a once off compliance audit of the above-mentioned Waste Water Treatment Works. Client: Victor Khanye Municipality.
- Nkonjaneni Water Borne Sewer Project in Piet Retief, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer. Client: Mkhondo Local Municipality.
- Upgrading of the Waterval Water Care Works, Gauteng, South Africa (2005-2007): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: ERWAT.
- Lotus Gardens Ext 2 Township establishment, Gauteng, South Africa (2003): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: City of Tshwane.



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Training

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Project Manager. This project involved the provision of training for the staff of the N14 rehabilitation project with regards to the contents of the environmental management plan. Client: SANRAL.
- Training in Environmental Aspects and Rehabilitation for the Small Scale Mining Division of Mintek, City, Province, South Africa (2004): Trainer. This project involved the provision of environmental awareness training for delegates involved in the small scale miner training programme run by the Mintek small scale mining division. Client: Mintek
- Training in Environmental Aspects and Impacts, Germiston, Gauteng, South Africa (2004): Trainer. This project involved the provision of environmental aspects and impacts training for the staff of Transwerk in Germiston. Client: Transwerk Germiston.

Health & Safety Projects

- Payneville water and sewer reticulation project, Gauteng, South Africa (2012): Health and Safety Officer. This project involved the monthly health and safety auditing of the Payneville water and sewer reticulation project in Springs. Client: Ekurhuleni Metropolitan Municipality.
- Nkonjaneni Water Borne Sewer Project in Piet Retief, Mpumalanga, South Africa (2009): Health and Safety Officer. This project involved the monthly health and safety auditing of the Nkonjaneni water borne sewer project in Piet Retief. Client: Mkhondo Local Municipality.



The Interim Certification Board
for
Environmental Assessment Practitioners
of
South Africa

Ashlea-Robyn Strong

was certified as an

**ENVIRONMENTAL ASSESSMENT
PRACTITIONER**

I HEREBY CERTIFY THAT THIS IS A TRUE COPY
OF THE ORIGINAL DOCUMENT AND THERE IS NO
INDICATION THAT ANY ALTERATIONS HAVE BEEN MADE
THERE TO BY AN UNAUTHORIZED PERSON
Sign: *[Signature]* Date: 22/8/13
WAYNE RAMON OLIVER Lt. Col. 85589864PE
COMMISSIONER OF OATHS
999 BRYANSTON DRIVE
BRYANSTON, JOHANNESBURG 2021

on this 8th day of April 2010

[Signature]

Chairperson

[Signature]

Secretary

UNIVERSITEIT
VAN DIE
VRYSTAAT



UNIVERSITY
OF THE
FREE STATE

HIERMEE WORD VERKLAAR DAT DIE THIS IS TO CERTIFY THAT THE

Magister in Omgewingsbestuur
Magister in Environmental Management

TOEGEKEN IS AAN
HAS BEEN CONFERRED UPON

ASHLEA-ROBYN STRONG

Met effek vanaf with effect from
1 Februarie / February 2006

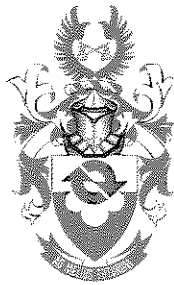
NADAT AAN DIE STATUTE EN REGULASIES VAN DIE UNIVERSITEIT VOLDOEN IS. AS BEWYS DAARVAN PLAAS ONS ONS ONDERSKEIE HANDTEKENINGE EN DIE SEËL VAN DIE UNIVERSITEIT HIERONDER. IN ACCORDANCE WITH THE STATUTES AND REGULATIONS OF THE UNIVERSITY. AS WITNESS OUR RESPECTIVE SIGNATURES AND THE SEAL OF THE UNIVERSITY BELOW.


.....
VISEKANSELIER/VICE-CHANCELLOR


.....
DEKAAN/DEAN


.....
REGISTRATEUR/REGISTRAR

BLOEMFONTEIN
2006-04-25
2003049109



TECHNIKON SA

THE DEGREE
**BACCALAUREUS
TECHNOLOGIAE**

NATURE CONSERVATION

Is awarded to

ASHLEA-ROBYN STRONG

Date of Birth

1976/09/03

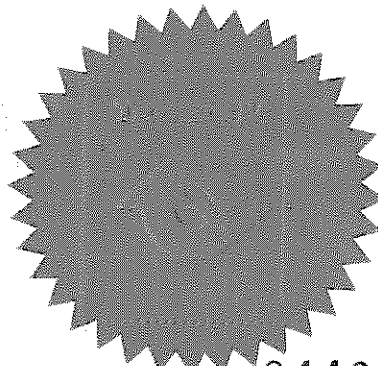
Student Number

95104199

with effect from

2001/03/01

Registrar



No. B **3443**

Principal / Vice Chancellor



TECHNIKON SA

NASIONALE NATIONAL DIPLOMA

NATUURBEWARING

NATURE CONSERVATION

Toegeken aan

Awarded to

ASHLEA-ROBYN MULLETT

ID: 7609030131081

met ingang van

with effect from

1999/03/01

Die volgende is voltooi:

The following were completed:

(*dui onderskeiding aan)

(*indicates distinction)

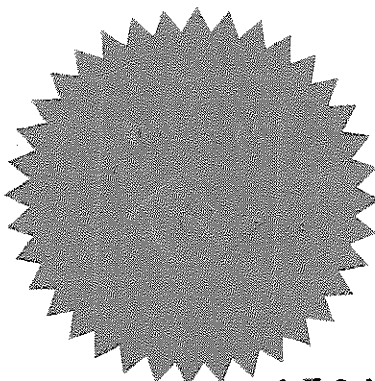
PLANTESTUDIES I *
PLANTESTUDIES II *
PLANTESTUDIES III
DIERESTUDIES I *
DIERESTUDIES II
DIERESTUDIES III
BEWARINGSEKOLOGIE I *
BEWARINGSEKOLOGIE II *
BEWARINGSEKOLOGIE III *
HULPBRONBESTUUR I
HULPBRONBESTUUR II
HULPBRONBESTUUR III
BEWARINGSKOMMUNIKASIE I
BEWARINGSKOMMUNIKASIE II
BEWARINGSONTWIKKELING I
BEWARINGSADMINISTRASIE I
REKENAARGEBRUIK I *
GRONDKUNDE I

PLANT STUDIES I *
PLANT STUDIES II *
PLANT STUDIES III
ANIMAL STUDIES I *
ANIMAL STUDIES II
ANIMAL STUDIES III
CONSERVATION ECOLOGY I *
CONSERVATION ECOLOGY II *
CONSERVATION ECOLOGY III *
RESOURCE MANAGEMENT I
RESOURCE MANAGEMENT II
RESOURCE MANAGEMENT III
CONSERVATION COMMUNICATION I
CONSERVATION COMMUNICATION II
CONSERVATION DEVELOPMENT I
CONSERVATION ADMINISTRATION I
COMPUTER USAGE I *
SOIL SCIENCE I

((V) Dui vakke vrygestel aan)

((E) Indicates subjects exempted)

Registrateur / Registrar



Nr. / No. D 15019

Rektor / Principal
Visekanselier / Vice Chancellor



NIGEL SEED, B.Soc.Sc. EAP

Director (Environmental Science), Environment & Energy



YEARS WITH THE FIRM

15

YEARS TOTAL

16

PROFESSIONAL QUALIFICATIONS

EAP

AREAS OF PRACTICE

Environmental and Social Impact Assessment

Environmental and Social Due Diligence

Environmental Legal Compliance

Waste Management

CAREER SUMMARY

Nigel has 15 years' environmental and social consulting experience. He is a Technical Director as well as the Africa lead for the environmental and social impact assessment (ESIA) service and Power in Africa.

Nigel has led complex ESIA and transaction related due diligence assessments across a range of sectors including aerospace, agro-processing, chemicals, healthcare, infrastructure (ports, roads, waste management), manufacturing, mining and beneficiation, oil & gas, pulp & paper power generation (thermal & renewables), and property development.

Nigel has extensive experience working with national and international regulations and procedures, including Equator Principles III, the IFC Performance Standards on Environmental and Social Sustainability (2012) and related policies, and the World Bank Group EHS and Industry Sector guidelines.

Nigel has experience in South Africa, Swaziland, Mozambique, Angola, Kenya and Ghana.

EDUCATION

Bachelor of Social Science, Environmental Management & Geography, University of Natal, Durban, South Africa 2000

ADDITIONAL TRAINING

ISO 9001:2015 Awareness workshop, DQS Training Academy 2016
Understanding International Project Finance, International Project Finance Association 2016
Hazard Identification and Risk Assessment Training, EOH Legal Services 2015
Diploma in AutoCAD 2000

PROFESSIONAL MEMBERSHIPS

Certified Environmental Assessment Practitioner EAP
Institute for Waste Management South Africa IWMSA
International Association for Impact Assessment IAIA

PROFESSIONAL EXPERIENCE

Environmental Impact Assessment Process

Crude Oil Refining

- ESIA for the Expansion of the 90 000 bpd SAPREF Crude Oil Refinery to achieve EURO 5 Fuel Specifications, South Africa, (2013): Environmental impact assessment specialist. Technical / impact assessment of proposed upgrades to *inter alia* Crude Distillation Units, Hydrogen Generation Units, Desulphurisation Units, Benzene Hydrogenation Units, and Refinery Fuel Gas boilers. ESIA methodology aligned to Shell global Health, Security, Safety, the Environment and Social Performance Standards. South Africa. Client: SAPREF.
- Tetra Ethyl Lead Facilities Decommissioning Projects, South Africa (2012 - 2015): Project Director. Environmental risk assessment, ESMP and oversight of all environmental monitoring associated with the decommissioning of TEL

- handling and waste storage facilities at the SAPREF Refinery and Island View. South Africa. Client: SAPREF.
- Environmental Due Diligence (EDD) for the proposed acquisition of a bulk petrochemical depot (2015). South Africa. Desktop review, facility assessment, legal assessment, determination of EHS liability associated with the properties due to current or historic operations; recommendation of EHS financial provisions in site purchase agreement. Client: Confidential Black Economically Empowered Private Equity Investor
- ENREF Environmental Risk and Integrity Assessment, South Africa (2014). Technical Lead. Determination of potential for Section 30 emergency incidents, appraisal of preventative and migratory measures, development of action plan, authority liaison and facilitation. Client: Engen Limited.
- Environmental Legal Appraisal of Refinery Projects, South Africa (2012-2014). Technical Lead. Environmental and legal appraisal of projects viz. vertical deep well anode bed pipeline protection (2015), LL Extraction Column for BTEX reduction in CD2/3 de-salter effluent (2014), Sour Water Stripper and SRU-3 Coalescer replacement Projects (2012). KZN, South Africa. Client: SAPREF.
- Waste Act Legal Review of SASOL Synfuels Refinery, South Africa (2013-2014). Legal Specialist. Process block assessment of pre-identified unit processes and process streams at the SASOL Synfuels Refinery, development and application of criteria for the identification of legally defined wastes and activities requiring waste licenses. Client: SASTECH.
- Industry Waste Management Plan for the South African Used Lubrication Oils Sector, South Africa (2015). Project Director. Preparation of an industry waste management plan as part of the ROSE Foundation extender producer responsibility (EPR) programme for the South African Lubrication Oil manufacturing sector. Client: ROSE Foundation.

Mining, Beneficiation and Processing

- Site Screening and Environmental and Social Impact Assessment for the establishment of calcium carbonate calcining facilities (2017). The scope of the activities on the selected site included raw materials handling, initial beneficiation (flotation) and calcining, and establishment of a tailings disposal facility. Key environmental aspects investigated in the study include hydrogeological impacts (associated with tailings facility), impacts on biodiversity (incl. wetlands), and atmospheric emissions. Client: Grasland Ondernemings.
- Lenders Environmental and Social Due Diligence for the Accra Cement Grinding Facility (2016). Accra, Ghana. Review of ESIA, Environmental and Social Management Plan (ESMP), Environmental Authorisations. Determination of compliance against relevant EP III criteria; IFC Performance Standards on Environmental and Social Sustainability, and applicable World Bank Group Environmental, Health and Safety (EHS) Guidelines. Compliance scoring. Preparation of ESIA DD Report including Environmental and Social Action Plan (ESAP). Client: DEG
- Underground Chrome Mine, South Africa (2011): Project Director. ESIA for the establishment of an underground chrome mine targeting the Middle Group and Lower Group Reefs covering 28 500 hectares on the Farm Turfontein 462 JQ. Client: Samancor Chrome Ltd.
- South Uranium Plant SX Circuit Replacement, South Africa (2011): Project Manager. EIA process for proposed solvent extraction plant replacement at Vaal River Operations. The SX process employs atmospheric acid leaching, counter current decantation and ion exchange systems to concentrate uranium leach liquor, which is then further upgraded and purified and reacted to produce ammonium di-uranate. Client: AngloGold Ashanti (Pty) Ltd.

- Smelter SO₂ Abatement Projects, Polokwane / Rustenburg, Limpopo / North West Province, South Africa (2012): Technical Support. Technical support to the EIA process for proposed SO₂ abatement equipment initiatives at the Polokwane and Mortimer Smelters. Client: Anglo American Platinum Ltd.
- Desulphurisation Unit, Newcastle, KwaZulu-Natal, South Africa (2006): Project Manager. EIA process for proposed upgrade of the desulphurisation unit and dust abatement system associated with the steel plant furnaces. Client: Arcelor Mittal South Africa Ltd.
- 60 MVA Ferrosilicon Smelter, South Africa (2003): Project Manager. EIA Process for the proposed establishment of a 60 MVA ferrosilicon smelter. Client: Silicon Technology (Pty) Ltd.
- Richards Bay Bulk Materials Handling Facility ESIA, South Africa (2003): Project Manager. Development of a Bulk Materials Handling Facility associated with the Port dry bulk terminal Import/export facilities. Client: Richards Bay Coal Distributors.

Effluent and Waste Management

- Waste management plan for all Total South Africa manufacturing, commercial, retail and administration facilities located in South Africa, Namibia, Botswana and Swaziland (2016): Project Lead. Waste management database, hazard characterisation and coding, development of waste management and waste traceability and reporting SOP's. Client: Total South Africa Limited.
- Waste management plan for all PPC cement manufacturing and quarry sites in South Africa (2016): Project Lead. Waste management database, hazard characterisation, GHS waste classification, development of safety data sheets, legal compliance assessment and recommendations. Client: PPC Limited.
- Waste management plan for all Transnet Port Terminal sites in South Africa (2015): Project Lead. Waste management database, hazard characterisation, GHS waste classification, development of safety data sheets, legal compliance assessment and recommendations. Client: Transnet Port Terminals.
- Netcare National Waste Management Strategy, South Africa (2015): Project Lead (Waste). Baseline waste management assessment of 70 of Netcare's healthcare facilities including clinics and hospitals. Development of a national integrated waste management system and strategy. Client: Netcare Limited.
- Healthcare Risk Waste Treatment Facilities, Pietermaritzburg, KwaZulu-Natal, South Africa (2006-2009): Project Manager. EIA Process and Waste Management License for proposed static and mobile microwave disinfection units for the treatment of healthcare risk waste. Client: Ecocycle (Pty) Ltd.
- Electron Road Regional Waste Transfer Station, South Africa (2005-2006): Project Manager. EIA process and waste management licensing for a 2400 ton per day regional waste transfer station. Client: Durban Solid Waste.
- KwaDukuza waste disposal site, South Africa (2010): Project Manager. EIA process peer review associated with the proposed high hazard (H:H) permitting of the Kwadukusa waste disposal site. Client: Metamorphosis Environmental Consultants.
- Illovo South Africa Waste Legislation Compliance Review and Strategy, South Africa (2010): Project Manager. Provision of technical waste management support to a legal (including Waste Act) assessment with Garlicke & Bousfield. The study included six Illovo Sugar facilities within KwaZulu-Natal including distilleries and mills. Client: Illovo Sugar South Africa Limited.
- Waste Disposal Site Prefeasibility, South Africa (2010): Project Manager. Waste disposal site prefeasibility for ferrosilicon smelting operations. The

- determination of waste type, landfill class and associated CAPEX and OPEX was based on relevant DEA standards Client: Silicon Technology (Pty) Ltd.
- Newcastle Works Effluent Buffering, South Africa (2009): Project Manager. EIA process associated with the implementation of effluent buffering capacity in order to address ammonia toxicity to the biological effluent treatment process. The project proposal entailed the use of an existing leachate dam associated with an existing high hazard (H:H) waste disposal site situated on the complex. Client: Arcelor Mittal South Africa Ltd.
 - AngloGold Waste Management Strategy, Vaal River, Gauteng, South Africa (2008): Project Manager. Development of a comprehensive waste management strategy for 27 business (mines, metallurgical plants, commercial services) units in the Vaal River and West Wits area (2003). In 2008 the strategy was updated to include the development of a comprehensive action plan for the management of hazardous waste. Client: AngloGold Ashanti (Pty) Ltd.
 - Lebowa Mining Complex Waste Management Strategy, South Africa (2008): Project Manager. Waste management baseline assessments, waste management strategies, and to develop detailed waste management procedures for the Lebowa Platinum Mine complex and the Polokwane Smelter. Client: Anglo American Platinum Ltd.
 - Umbogintwini Industrial Complex Effluent Balance, South Africa (2007-2008): Project Manager. Effluent balance and feasibility studies for additional marine effluent disposal capacity & associated water and energy recovery. Client: Heartland Leasing (Pty) Ltd.
 - Resource Recovery Facility – Uitenhage, Eastern Cape, South Africa (2007-2008): Waste Management License / EIA process for the development of a resource recovery facility for the handling and treatment of hydrocarbon and organic effluents, various general and hazardous solid wastes. Client: Veolia Environmental Services (Pty) Ltd.
 - Effluent Treatment Facilities, South Africa (2007/8): Project Manager. ESIA/ESMP for effluent treatment facilities intended to address increasingly stringent sulphide limitations at the Southern Wastewater Treatment Works. Client: SAPREF.
 - Study on Priority Hazardous Waste Streams in the Western Cape, South Africa (2007): Project Manager. Development of the Best Practicable Environmental Options for priority hazardous waste streams in the Western Cape. Client: Department of Environmental Affairs and Development Planning.
 - Hazardous Waste Transfer Facility, Richards Bay, KwaZulu-Natal, South Africa (2006): Project Manager. EIA Process for the proposed establishment of a hazardous waste transfer facility at the Richards Bay Dry Bulk Terminal. Client: Transnet Port Terminals.
 - Logmed® Medical Waste Facilities, South Africa (2002): Project Manager. Assessment of four alternative Medical Waste Treatment Facility sites within the eThekweni Municipality as part of an EIA process. Client: WasteMan (Pty) Ltd.

Power

- Lenders ESDD for the Aggeneys and Konkoonsies Solar Renewable Energy Projects (2016). South Africa. Review of ESIA, Environmental and Social Management Plan (ESMP), Environmental Authorisations. Determination of compliance against relevant EP III criteria; IFC Performance Standards on Environmental and Social Sustainability, and applicable World Bank Group Environmental, Health and Safety (EHS) Guidelines. Compliance scoring. Preparation of ESIA DD Report including Environmental and Social Action Plan (ESAP). Client: Nedbank Ltd.

- ESIA for the 120MW combined cycle gas turbine power project and associated Light Crude Oil and Natural Gas pipelines and storage facilities in the Tema Free Zone Enclave in Ghana (2016): Impact Assessment with key reference to the World Bank Group General and Industry Sector guidelines (Thermal Power). ESIA Project Manager. Client: Atlantic Electric Company / LMI Holdings.
- ESIA for Photovoltaic and Concentrated Solar (trough) Power Generation Facilities in Northern Cape Province, South Africa (2015): Project Director and technical specialist. The project consists of two development sites viz. Letsoai concentrated solar site (300MW) and Enamandla Solar PV (375MW) including 60km water supply pipeline (CSP site) and associated powerline grid connections. Client: Biotherm Energy.
- ESIA for Wind Power Generation Facilities in Western Cape Province, South Africa (2015): Project Director and technical specialist. The project consists of two development sites viz. Maralla Wind (280MW) and Esizayo Wind (140MW) including associated powerline grid connections. Client: Biotherm Energy.
- Gledhow Mill 11-18MW Biomass Energy Project, South Africa (2012): Project Manager. EIA processes for a renewable energy power project within the Gledhow Sugar Mill Complex. The project will comprise the installation of a biomass boiler and electricity generation plant with a capacity ranging from 11MW to 18MW which will be exported to the national grid. Client: Illovo Sugar Ltd.
- Solar Photovoltaic (PV) Generation Facility, South Africa (2011): Project Director. Basic Assessment (BA) process for the proposed construction of a Solar Photovoltaic (PV) Generation Facility. Client: eThekweni Municipality Energy Office.
- National Landfill Gas to Electricity Projects, South Africa (2009-2010): Project Manager. EIA process and waste management licensing of 17 landfill Gas to Electricity Clean Development Mechanism Projects. Client: CEF (Pty) Ltd.
- Durban Solid Waste Landfill Gas to Electricity Projects, South Africa (2003-2004): Project Manager. EIA process and waste management licensing of landfill Gas to Electricity Clean Development Mechanism Projects at Bisasar Road, Mariannhill, and La Mercy landfill sites. Client: Durban Solid Waste.
- ESIA for the 140 – 170 MW Mozambique Gas Engine Power Project (2011), Mozambique. ESIA aligned to the IFC Performance Standards for the proposed Mozambique Gas Engine Power Plant (MGEPP) 140 – 170 Megawatt (MW) electricity generation facility in Ressano Garcia, Mozambique (2011). Environmental impact assessment specialist / waste management specialist. Technology environmental performance appraisal with key reference to the European Union (EU) Integrated Pollution Prevention and Control Reference Document on Best Available Techniques for Large Combustion Plants (July 2006). Physical Environment Impact Assessment (air, water, waste) and ESIA and E&S Management Plan with key reference to the World Bank EHS guidelines.
- Sasolburg 180-200MW Combined Cycle Gas Engine Power Project, South Africa (2011): BAT Review and Waste Management Specialist. Open cycle power plant with an output capacity of approximately 180MW; future conversion to a combined cycle (heat recovery) which will generate an additional 20MW. Client: SASOL New Energy Holdings.
- Sappi Saiccor 20MW Multi-Fuel Boiler, South Africa (2011): Project Director. EIA processes for the a) establishment of a high pressure 20MW coal and biomass boiler and associated infrastructure at the Sappi Saiccor Mill and upgrade of chemical recovery boiler in order to derive energy and chemical recovery benefits. Client: Sappi Southern Africa Limited.

- Sappi Tugela 40MW CCGT Project, South Africa (2011): Project Director. EIA processes for a 40MW combined cycle gas-powered combustion turbine. Client: Sappi Southern Africa Limited.
- Power Line Construction and Upgrading projects, South Africa (2001-2004): Project Manager. Various 132KV & 275KV electrical transmission line construction and upgrading projects in the eThekweni Municipality. Client: eThekweni Electricity Department.

Food and Agriculture

- Ubombo Mill Furfural project, Swaziland (2015): ESIA (Scoping) Project Lead. ESIA process in terms of Swaziland legislative requirements and GIIP for the establishment of a greenfield furfural manufacturing plant associated with the Ubombo Sugar Mill. Key study aspects included materials handling facilities, reaction and distillation processes, high efficiency biomass heat and power generation, increased water consumption, effluent generation, airborne emissions, changes in waste physico-chemical characteristics Client: Illovo Southern Africa.
- ESIA Screening and TOR for Tea Manufacturing Facility, Kenya (2011): Project Manager. The proposed development area is located in the Kericho agricultural region, western Kenya. The scope of the project included relocation of tea manufacturing facilities including materials and product storage, manufacturing, and utilities (biomass heat and power generation, water treatment, industrial and sanitary effluent treatment). The project was undertaken in conjunction with local regulatory specialists. Client: Unilever Limited.
- Yeast Plant Environmental Prefeasibility, South Africa and Swaziland (2011): Environmental and Social Specialist. Site selection and ESIA pre-screening and TOR for the proposed establishment of a yeast manufacturing facility within the Southern African region. Client: AB Mauri Technology & Development Ltd.
- Waste Management Licensing, Stanger, KwaZulu-Natal, South Africa (2010): Project Manager. Waste Management License application and Scoping and EIA process for waste management activities at the Stanger Mill. Client: Sappi Stanger (Pty) Ltd.

Manufacturing Sector

- Environmental and Social Impact Assessment for the expansion of the Mondi Richards Bay paper mill (2017). The expansion includes the establishment of a multi-fuel (coal and biomass) boiler, new hard and soft wood digestion lines, chemical recovery boiler, and increase in electrical generation capacity. Key environmental aspects investigated in the study included atmospheric emissions, traffic generation, and impacts on biodiversity in the adjacent sensitive areas. Client: Mondi Limited.
- Environmental, Health and Safety Due Diligence for the acquisition of domestic and industrial geyser manufacturing firm (2016). Scope of audit included one primary manufacturing facility and 3 regional warehouses. Study aspects included historical asbestos, inorganic and hydrocarbon chemical usage, occupational air quality, noise and illumination risks. Based on the initial EHS DD, further specialist due diligence work has been commissioned (currently underway) to quantitatively assess community health and safety risks associated with historic contamination as a result of poor on-site operating practice (soil, groundwater and vapour plume sampling, modelling and risk assessment). Client: Confidential Scandinavian Investor.
- Anhydrous Hydrofluoric Acid Plant, South Africa (2012): Project Director. EIA Process associated with product diversification projects to optimize the internal use of intermediate products, and minimize site pollutants; entailing

- production of anhydrous hydrogen fluoride and aluminium trifluoride. Client: Foskor (Pty) Ltd. Lead Auditor.
- MSMA Production, South Africa (2009): Project Manager. Technical, environmental and legal assessment of proposed mono sodium methyl arsenate (MSMA) at the CleanTech (Berlin) industrial facility. Client: Mzansi Chemicals (Pty) Ltd.
- PET Plant Debottlenecking - South Africa (2007-2008): Project Manager. Environmental duty of care assessment and integrated permitting (Scheduled Trade) procedure for PET production debottlenecking. Client: HOSAF (Pty.) Ltd.
- Biodiesel Manufacturing, Berlin, Eastern Cape, South Africa (2007): Project Manager. EIA Process for proposed conversion of industrial facilities for the production of Biodiesel at the CleanTech (Berlin) industrial facility. Client: CleanTech Africa.
- Industry Waste Management Plan, Western Cape, South Africa (2007): Project Manager. Provision of technical support to the development of an Industrial Waste Management Plan for the Consumer Formulated Chemicals Sector. Client: Western Cape Department of Environmental Affairs.
- Ferromanganese Storage, Durban, KwaZulu-Natal, South Africa (2006): Project Manager. EIA Process for the proposed relocation of ferromanganese handling facilities within the Port of Durban. Client: Transnet National Ports Authority.
- Acrylic Emulsion Plant Debottlenecking, South Africa (2006): Project Manager. Proposed de-bottlenecking project involving several initiatives aimed at improving process efficiency related to water based acrylic and co-acrylic emulsions (Styrene Acrylic Emulsions) production. Client: Rohm and Haas (Pty) Ltd.
- Solid State Polymerisation (SSP) plant upgrade, Durban, KwaZulu-Natal, South Africa (2004): Project Manager. EMP and post construction audit for the construction of a Solid State Polymerisation (SSP) plant upgrade. Client: HOSAF (Pty.) Ltd.
- Di Methyl Phthalate Plant Adaptation, South Africa (2003): Project Manager. Environmental appraisal of proposed Di Methyl Phthalate Plant adaptation project. Client: Orchem (Pty) Ltd.
- Lignosulphonate Plant Construction Project. South Africa (2003): Environmental Control Officer. EMP, environmental monitoring and training for a greenfield lignosulphonate plant expansion project. Client: Lignotech (Pty) Ltd.

Municipal Infrastructure

- Esidweni Low Cost Housing, South Africa (2003): Project Manager. Environmental prefeasibility and EIA Process for proposed development of the Esidweni low cost housing development at Umlazi. Client: eThekweni Housing Department.
- Le Domaine Sewage Scheme, South Africa (2003): Project Manager. EIA for sewage treatment options for the Le Domaine retirement estate, Hillcrest, KwaZulu-Natal. Client: Le Domaine (Pty) Ltd.
- Mpumalanga Eastern Trunk Sewer, South Africa (2002): Environmental Control Officer. EMP, environmental monitoring, training, and rehabilitation project management for the construction of the 4km Mpumalanga eastern trunk sewer. Client: eThekweni Wastewater Department / Stewart Scott Engineers.

- Sewage Treatment Facilities, Durban, KwaZulu-Natal, South Africa (2001): Project Manager. EIA Process for sewage treatment facilities associated with the redevelopment of the Rob Roy Hotel Site. Client: Alliance Property Group.

Roads, Rail and Ports

- Pemba Oil and Gas Port and Logistics Centre, South Africa (2014): ESIA specialist. Environmental Screening and Site Selection, ESIA/ESMP Technical and Environmental Appraisal of an onshore 12000 hectare greenfield oil and gas logistics support base to the Rovuma offshore concession areas. Impact assessment performed with key reference to the World Bank General EHS Industry Sector guidelines: Ports, Harbours, and Terminals (2007) and selected IFC Performance Standards (1, 3, and 5) and application of the World Bank General EHS guidelines (general and for ports). Client: Sonils/ENH.
- South Sudan Feeder Roads Environmental Review (2017): Project Director. Environmental Review of the routes proposed for development, including Lot 1 (Kangi Bar Urud), Lot 2 (Achol Pagong-Ayen-Panilete) and Lot 3 (Gok Machar-Mayom Angok). Along with the Environmental Review Report, an Environmental Management Plan was developed to inform the site establishment, construction and operational phases of the project. Client: United Nations Office for Project Services
- Outer West Roads Upgrades, South Africa (2005): Project Manager. EIA Process for strategic upgrading of key transportation routes in the eThekweni Municipality Outer West area. Client: eThekweni Roads Department.
- ESIA and ESMP for the upgrade of the Ingquza Hill to Mangwanini Access Road, Matheko to Msikaba Access Road and the Mpophomeni Access Roads, South Africa (2011): Project Director. The upgrade project forms part of the South African National Roads Agency Limited Community Development Programme. The ESIA was conducted according to South African Environmental legislation, informed by international best practice guidance for linear project developments.
- Transnet Rail Engineering Waste Management Strategies, South Africa (2011): Project Director. Development of an Industry Waste Management Plan for Durban and Koedoespoort Regions. Client: Transnet Rail Engineering.
- Richards Bay Port Dry Bulk Terminal Waste Management Strategy, South Africa (2006): Project Manager. Development of waste management baseline assessment and development of a bulk material waste minimisation strategy for the Richards Bay Dry Bulk Terminal. Client: Transnet Port Terminals.
- Richards Bay Port Dry Bulk Terminal Waste Transfer Station, South Africa (2006): Project Manager. EIA Process for the proposed establishment of a hazardous waste transfer facility at the Richards Bay Dry Bulk Terminal. Client: Transnet Port Terminals.
- Durban Port Upgrades of Island View Berths 5 and 6. South Africa (2005): Environmental Control Officer. EMP and environmental auditing for the reconstruction of Island View Berths 5 and 6, Port of Durban. Client: Transnet Port Terminals.
- Richards Bay Port Waste Management Strategy, South Africa (2004): Project Manager. Development of a waste management baseline assessment, waste management strategy, and strategy implementation guidelines for the Port of Richards Bay. Client: Transnet Port Terminals.
- Durban Port Ore and Ferrochrome Facility EMS, South Africa (2007): Project Manager. Environmental management system for the Durban container, bulk ore and ferrochrome handling facilities. Client: Bridge Ports (Pty) Ltd.



NIGEL SEED, B.Soc.Sc. EAP

Director (Environmental Science), Environment & Energy

General

- SAAB Gripen Legal Review, Durban, KwaZulu-Natal, South Africa (2006): Project Manager. Activities associated with the introduction of the Gripen Aircraft into South Africa. Client: SAAB (c/o SAAB Sweden).
- South African Police Services EMS. St. Lucia Wetland Park, KwaZulu-Natal, South Africa (2007): Project Manager. Environmental management system for SAPS training facilities. Client: South African Police Services.



The Interim Certification Board
for
Environmental Assessment Practitioners
of
South Africa

Nigel Robert Seed

was certified as an

**ENVIRONMENTAL ASSESSMENT
PRACTITIONER**

on this 1st day of March 2012

Chairperson

Secretary



University of Natal

We, the Vice-Chancellor, the Registrar,
and the Dean of the Faculty,
hereby certify
that

Nigel Robert Seed

has this day been admitted to
the degree of

Bachelor of Social Science



Vice-Chancellor

Registrar

Dean

5 April 2000



BRONWYN FISHER, B.Sc., Pri.Sc.Nat

ENVIRONMENTAL CONSULTANT (CONSERVATION ECOLOGY), ENVIRONMENT & ENERGY



CAREER SUMMARY

Bronwyn Fisher has 4 years of experience as an Environmental Consultant. She completed her BSc in Conservation Ecology at the University of Stellenbosch. She did her Honours on mapping human and social dynamics to determine the conservation opportunity for Spekboom restoration through carbon credit funded programmes in the Klein Karoo. With this project, she gained valuable experience in how to interact and manage stakeholders in such a way that conservation goals are met without the stakeholders feeling that they were not included in the decision-making process. The management of stakeholders and the ability to incorporate their needs into the objectives of a project is seen as an essential component of an EIA process. Prior to joining WSP she worked in the consulting field as a Junior Environmental Consultant. She has experience in Basic Assessments, the compilation of Environmental Management Plans and the various processes associated with it.

YEARS WITH THE FIRM

4

YEARS TOTAL

5

PROFESSIONAL QUALIFICATIONS

Pri.Sc.Nat

AREAS OF PRACTICE

Compliance Auditing

Environmental Impact Assessments

Environmental Control Officer

Environmental Management Plans

Feasibility Studies

EDUCATION

Bachelor of Science, Conservation Ecology, University of Stellenbosch, Cape Town 2013

ADDITIONAL TRAINING

Snake Awareness, Scorpion Awareness and First Aid for Snakebite and Scorpion Sting, African Snakebite Institute 2016

Health and Safety Representative, Action Training Academy 2016

Defensive Driving and Psychology Course, Toyota 2016

PROFESSIONAL MEMBERSHIPS

South African Council for Natural Scientific Professions, Certified Natural Scientist SACNASP

PROFESSIONAL EXPERIENCE

Environmental Impact Assessments

- Environmental Authorisation: Proposed Solar and Wind Projects located in the Northern and Western Cape Provinces (2015). This project involved the compilation of 15 Environmental Impact Assessments and Environmental Management Plans for 2 Solar and 2 Wind energy Projects near Aggenys and Sutherland respectively. Client: BioTherm Energy (Pty) Ltd
- Environmental Authorisation: Robben Island PV Plant, Robben Island, Western Cape. Consultant. (2016-current). WSP have been appointed to undertake the Basic Assessment process for the proposed installation and operation of a PV plant on Robben Island. In addition WSP are managing the Ecological Impact Assessment, Avifaunal Impact Assessment and Visual Impact Assessment. Client: National Department of Tourism.
- Environmental Authorisation: Athlone Power Station Redevelopment Project, Athlone, Western Cape. Consultant (2016-current). WSP have been appointed to undertake the environmental services associated with the Athlone Power Station redevelopment project for the City of Cape Town. WSP forms part of the multi-disciplinary project team which includes town planners, civil engineers and urban designers. In support of the Environmental Authorisation, WSP will manage the relevant external specialists including Cultural and



BRONWYN FISHER, B.Sc., Pri.Sc.Nat

ENVIRONMENTAL CONSULTANT (CONSERVATION ECOLOGY), ENVIRONMENT & ENERGY

Heritage, Public Participation and Visual. In addition WSP's in-house Air Quality, Odour and Noise specialists and Socio-economic specialists will provide baseline and impact assessments. Client: City of Cape Town.

- Waste Management License: The development of a Solvent Recovery Plant, Kuils River, Western Cape (2015- current). Lead Consultant. Dekro Paints are proposing to develop a solvent recovery plant for the treatment of solvent waste produced offsite. The proposed solvent recovery plant triggers a Scoping and EIA process in order to obtain a Waste Management License (WML) for the solvent recovery activities. Client: Dekro Paints (Pty) Ltd
- Environmental Authorisation Atlantis Industrial, Cape Town, South Africa (2014-2015): Lead Consultant. GRI Wind Steel (Pty) Ltd is in the process of constructing a 12 000m² wind tower production facility within the Green Technology Industrial Park located in Atlantis Industrial, Atlantis. The facility will produce wind towers from welded steel and hot rolled steel flanges to supply the growing need for alternative energy in South Africa. The process involves the coating of metals using molten metal (i.e. metal spray). This activity is listed within the NEM:AQA as an activity which requires an Air Emissions License and as such requires Environmental Authorisation prior to commencement. WSP has been appointed to undertake the BA process for this project, the project will also require Screening Air Quality Study and an Air Emissions License to ensure that all emissions from the site are reflected within the license and therefore authorised. Client: GRI Wind Steel South Africa.
- Environmental Authorisation- Sewerage Infrastructure Upgrades along the Gordon's Bay Beachfront, Gordon's Bay, Cape Town, South Africa (2014-2015): Lead Consultant. The City of Cape Town (CCT) is proposing to upgrade the sewerage system that runs along the beach front in Gordon's Bay. This is a result of the regular complaints that the CCT receive from the residents and business owners that are situated along the beach front. The complaints received relate to the sewage spilling from manholes on the sidewalk. The upgrades to the sewerage infrastructure include the Installation of a new rising main and the increased storage capacity of the Pop-Inn Pump Station. The activities associated with the upgrades triggers the NEMA EIA Regulations, 2010 and a Basic Assessment (BA) process is required prior to the commencement of this activity. WSP has been appointed to undertake the BA process for this project, the project will also require a Heritage Impact Assessment as the pipeline will be located in close proximity to a Shell Midden. The pipeline also crosses the Sir Lowry's Pass River and therefore a Freshwater Ecology Impact Assessment and Water Use Licence are required. Client: City of Cape Town Water and Sanitation.
- Environmental Authorisation - Expansion of the Cape Town Bulk Storage Tank, Cape Town, South Africa (2014): Lead Consultant. FFS Refiners has taken over the tank farm located next to the FFS Cape Town Harbour. This site is known as the Cape Town Bulk Storage. FFS is proposing an expansion on site by constructing three additional petroleum storage tanks. The installation of these tanks triggers the NEMA EIA Regulations, 2010 and a Basic Assessment (BA) process is required prior to the commencement of this activity. WSP has been appointed to undertake the BA process for this project, the project will also require a Screening Air Quality Study and the amendment to the existing Air Emissions License to ensure that all emissions from the site are reflected within the license and therefore authorised. Client: FFS Refiners (Pty) Ltd.
- Environmental Authorisation- Expansion of the FFC Bulk Solvent Storage Facility, Epping 1 Industria, Cape Town, South Africa: Lead consultant (2014-2015). Fine Chemicals Corporation (Pty) Ltd (Pty) Ltd is proposing to upgrade and expand the bulk solvent storage facility at their site in Epping. The proposed development involves upgrades to and an expansion of an existing



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ENVIRONMENTAL CONSULTANT (CONSERVATION ECOLOGY), ENVIRONMENT & ENERGY

facility. This project will be undertaken in two phases. An Environmental Authorisation is required for the proposed project, with two specialist studies being undertaken in support of the project. WSP has been commissioned to undertake the Basic Assessment process for this project. Client: Fine Chemicals Corporation (Pty) Ltd.

- Basic Assessment - Wolsely Waste Disposal Facility (2014): Assistant Consultant. Assisted in the Basic Assessment Process for Section 20 Permit Amendment (Variation) for Witzenberg Municipality. Witzenberg Municipality applied for the extension of the operational life of the Wolsely Waste Disposal Facility. Client: Witzenberg Municipality
- Basic Assessment - Saxdown Business Park, Rondevallei, Cape Town (2013): Assistant Consultant. Wasteman Holdings are proposing to relocate and establish a Materials Recovery Facility (MRF) on ERF 7/441 Saxdown Business Park, Saxdowne Road, Rondevallei. Wasteman currently operate a MRF located on ERF 112689, mobile Road, Airport Industria. The project included liaising with various authorities and relevant stakeholders in order to get authorisation for the proposed Materials Recovery Facility. Client: Wasteman Holdings.
- Basic Assessment - Alto Wine Estate, Stellenbosch, Cape Town (2013): Assistant Consultant. LUSAN Premium Wines (Pty) Ltd proposes to construct an on-site waste water treatment plant (activated sludge biological reactor) to treat domestic sewage from 13 housing units and a community hall on Alto Wine Estate) The current Sannitree system which consists of a flow balancing tank, aeration chamber and a discharge sump is hydraulically overloaded and therefore not functioning optimally. The project included liaising with various authorities and relevant stakeholders in order to get authorisation for the proposed WWTW. Client: LUSAN Premium Wines (Pty) Ltd.
- Basic Assessment - Arabella Country Estate, Hermanus, Cape Town (2013): Assistant Consultant. HPF Properties (Pty) Ltd proposes to expand and upgrade the existing waste water treatment works (WWTW) on Arabella Country Estate to cater for the treatment of the additional volume of domestic sewage effluent to be generated by the proposed Phase 2 development on Arabella Country Estate, Hermanus, The project included liaising with various authorities and relevant stakeholders in order to get authorisation for the proposed upgrade. Client: HPF Properties (Pty) Ltd.

Environmental Control Officer

- Noupoot Bulk Water Supply Upgrades, Noupoot, Northern Cape, South Africa (2014-current): ECO. WSP Environmental (Pty) Ltd was appointed by the Umsobomvu Municipality to undertake the Role of the Environmental Control Officer (ECO) for the Noupoot bulk water supply system. The upgrades were being undertaken in order to improve the bulk water supply system to the town. As the ECO WSP undertook monthly independent audits to ensure compliance against the Environmental Management Programme (EMPr) compiled by Frontier and amended by WSP. Client: Umsobomvu Municipality
- Repair to the Landdroskop Jeep Track in Hottentots Holland Nature Reserve, Western Cape, South Africa (2014): ECO. WSP Environmental (Pty) Ltd was appointed by CapeNature to compile the Environmental Management Programme (EMPr) and undertake the Environmental Control officer (ECO) role for the upgrade of a jeep track that runs through the Hottentots Nature Reserve. The repair work to the Landdroskop jeep track aimed to facilitate easier access to the Landdroskop huts and newly constructed Canopy Tours, as well as providing field guides access to hiking trails in the event of an emergency. The project ran over 6 months and in this period 7 ECO audits were completed including the close out audit and reporting. This project involved independent audits and compilation of audit reports to discuss all the

environmental and social aspects of the repair activities occurring on site. Services included site visits, report compilation and liaison with the Resident Engineer, Designated Environmental Officer and personnel on site. Client: CapeNature.

- Expansion of the FFS Cape Town harbour Tank Farm, Cape Town Harbour, Cape Town, South Africa (2013- 2014): ECO. The proposed extension project involved the installation of five new above ground storage tanks. The two largest tanks have a tank capacity of 2,500m³ each and a height of 18m. The three smaller tanks have a tank capacity of 2,300m³, 1,350m³ and 212m³ and heights of 18m, 10.8m and 10.8m respectively, giving an additional 8862m³ storage capacity to the current FFS operation. The new tanks will be used to store various classes of oils. This project involved monthly independent audits and compilation of audit reports to discuss all the environmental and social aspects of the construction phase the storage tanks. Services included site visits, report compilation and liaison with the Resident Engineer, Designated Environmental Officer and personnel on site. Client: FFS Refiners (Pty) Ltd.

Environmental Management Plans

- Repair to the Landdrooskop Jeep Track in Hottentots Holland Nature Reserve, Western Cape, South Africa. (2014): ECO. WSP Environmental (Pty) Ltd was appointed by CapeNature to compile the Environmental Management Programme (EMPr) and undertake the Environmental Control officer (ECO) role for the upgrade of a jeep track that runs through the Hottentots Nature Reserve. The repair work to the Landdrooskop jeep track aimed to facilitate easier access to the Landdrooskop huts and newly constructed Canopy Tours, as well as providing field guides access to hiking trails in the event of an emergency. The project ran over 6 months and in this period 7 ECO audits were completed including the close out audit and reporting. This project involved compiling the EMPr, independent audits and compilation of audit reports to discuss all the environmental and social aspects of the repair activities occurring on site. Services included site visits, report compilation and liaison with the Resident Engineer, Designated Environmental Officer and personnel on site. Client: CapeNature.
- EMP for the Transportation of Hazardous Goods, South Africa (2013-2014): Assistant Consultant. Development of an Environmental Management Programme (EMP) in support of a Wholesale License. Vesquin Trading are proposing to purchase petroleum products from depots around South Africa and Transport it to their depot in Botswana. The EMP identified all impacts associated with the proposed activity and will be submitted to the Department Of Energy in support of Vesquin’s application for a Wholesale License. Client: Vesquin Trading (Pty) (Ltd).

Public Participation Process

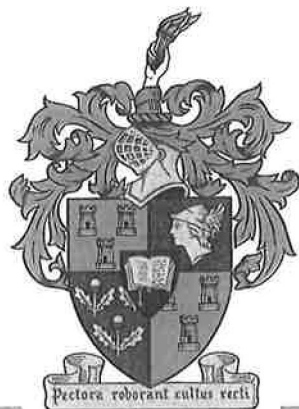
- Public Participation Process - Atmospheric Emissions Licence, Salt River, Cape Town, (2014): Lead Consultant. WSP were appointed by Protea Brass Foundry cc to undertake the required Public Participation Process (PPP) in support of an Atmospheric Emissions Licence. The PPP included information gathering, placing an advert in one local and one regional newspaper, collation of an issues trail report based on comments received and submission of the report to the City of Cape Town Air Quality Management. Client: Protea Brass Foundry cc.
- Public Participation - Coastal Waters Discharge Permit - Port of Saldanha, Cape Town, South Africa (2014): Assistant Consultant. WSP were appointed by Transnet to undertake the required Public Participation Process (PPP) in support of an Coastal Waters Discharge Permit (CwDP). The PPP included information gathering, placing an advert in one regional newspaper, collation of an issues trail report based on comments received and submission of the

report to the Department of Environmental Affairs. Client: Transnet National Ports Authority.

- Public Participation Process in Support of an Atmospheric Emissions Licence, Atlantis Industrial, Cape Town, South Africa (2014): Lead Consultant. WSP were appointed by GRI Wind Steel South Africa (Pty) Ltd to undertake the required Public Participation Process (PPP) in support of an Atmospheric Emissions Licence. The PPP included information gathering, placing an advert in one local and one regional newspaper, collation of an issues trail report based on comments received and submission of the report to the City of Cape Town Air Quality Management. Client: GRI Wind Steel SA (Pty) Ltd.
- Public Participation Process in Support of an Atmospheric Emissions Licence, Atlantis Industrial, Cape Town, South Africa (2013-2014): Assistant Consultant. WSP were appointed by Atlantis Foundries (Pty) Ltd to undertake the required Public Participation Process (PPP) in support of an Atmospheric Emissions Licence. The PPP included information gathering, placing an advert in one local and one regional newspaper, collation of an issues trail report based on comments received and submission of the report to the City of Cape Town Air Quality Management. Client: Atlantis Foundries (Pty) Ltd.
- Public Participation Process in Support of an Atmospheric Emissions Licence, Killarney Gardens, South Africa (2013-2014): Lead Consultant. WSP were appointed by Pex Foundry cc to undertake the required Public Participation Process (PPP) in support of an Atmospheric Emissions Licence. The PPP included information gathering, placing an advert in one local and one regional newspaper, collation of an issues trail report based on comments received and submission of the report to the City of Cape Town Air Quality Management. Client: Pex Foundry cc.

Feasibility Studies

- Western Cape Government Solar PV Technology Feasibility Study, Cape Town, South Africa (2014-2015): Lead Consultant. WSP Environmental (Pty) Ltd was appointed to undertake the Environmental Impact Assessment and the Legal and Regulatory review for the Western Cape Government solar Photovoltaic (PV) Technology feasibility study. GreenCape, on behalf of Western Cape Government, are looking to install roof-mounted solar PV cells on a number of buildings owned by the Western Cape Government. Bronwyn was the environmental consultant for this project and her responsibilities included project management, research and report writing. Client: GreenCape.



UNIVERSITY OF STELLENBOSCH

This is to certify that whereas

BRONWYN VAUGHAN FISHER

*had complied with all the conditions prescribed
in the Act, Statute and Rules of the University,
the four-year degree*

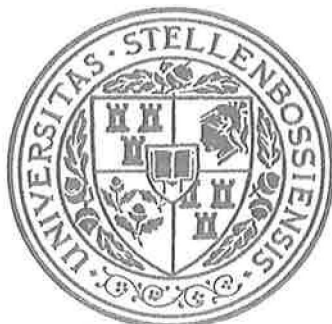
**BACHELOR OF SCIENCE IN CONSERVATION ECOLOGY
(BScConsEco1)**

*with all the rights and privileges pertaining thereto was conferred on
her at a congregation of the University in March 2013.*

ARussel Botman
.....
RECTOR AND VICE CHANCELLOR

M. J. van der Merwe
.....

DEAN



Regina
.....
REGISTRAR
7 March 2013

This certificate was issued in both Afrikaans and English.
In the unlikely event of an inconsistency in the wording,
the Afrikaans text shall have precedence.