Our Ref: 19022-Let-001-Lidwala EIAr Review-Rev0 03 May 2019

Lidwala Consulting Engineers
PostNet Suite 328
Private Bag X21
Bryanston
2021

Attention: Ms Moseketsi Mochesane

Dear Ms Mochesane

EXTERNAL PEER REVIEW OF THE DEIAr, DEMPr AND BIODIVERSITY SPECIALIST REPORT FOR THE PROPOSED ESTABLISHMENT OF A SUSTAINABLE AND INTEGRATED HUMAN SETTLEMENT IN DIRKIESDORP, MKHONDO LOCAL MUNICIPALITY, MPUMALANGA PROVINCE (DARDLEA Ref NO.: 1/3/1/16/1G-104)

1 INTRODUCTION

Mkhondo Local Municipality has appointed Lidwala Consulting Engineers (were in referred to as Lidwala) to conducted an Environmental Impact Assessment Process for the proposed the development of sustainable and integrated human settlements (housing development) at Dirkiesdorp which falls within the jurisdiction of the Mkhondo Local Municipality in the Gert Sibande District, Mpumalanga Province.

Zitholele Consulting (herein referred to as Zitholele) was appointed to peer review the Environmental Impact Assessment Report (EMPr), the Environmental Management Programme (EMPr) as well as the Biodiversity Reports compiled by Lidwala for the proposed housing development.

2 SCOPE OF WORK

The scope of work included the assessment of the Environmental Impact Assessment process undertaken through the review of the DEIAr, EMPr and Biodiversity Specialist Report compiled for the proposed housing development.
The key objectives of the review process are to:

- Assess quality of information contained in the EIAR, EMPr and Biodiversity Report;
- Assess whether the information presented is adequate for decision-making;
- Assess whether conclusions and recommendations made are in line with the findings of the impact assessment process; and
- Identify information gaps and deficiencies, if any.

The review process was based on the requirements of the Environmental Impact Assessment (EIA) Regulations of 2014, as amended, and have been guided by the requirements stipulated in the following appendices of the EIA regulations of 2014 (as amended):

- Appendix 3: Requirements for scope and content of the Environmental Impact Assessment Process;
- Appendix 4: Content of the Environmental Management Programme (EMPr); and
- Appendix 6: Scope and requirements for specialist reports.

3 PROJECT TEAM

The review of the EIAR, EMPr and Biodiversity Report was undertaken by Mrs Tebogo Mapinga who is a SACNASP Registered Senior Environmental Scientist under the supervision of Dr Mathys Vosloo for Zitholele Consulting. Refer to Appendix A for the CVs.

4 OUTCOME OF THE REVIEW PROCESS

4.1 EIAR

Based on Zitholele’s review of the EIAR the following can be concluded:

- The EIAR was drafted in line with the Plan of Study which was approved by the DARDLEA.
- The details of the Applicant, Environmental Assessment Practitioner as well as the specialists appointed were provided in the EIAR (CVs also formed part of the report).
- The description of the project and location of the project were clearly defined.
- The motivation for the project was based on the need of the project from a local community as well as from a Municipal perspective (IDP,2015) and the benefits of the project to the community was provided.
- The following Listed Activities were applied for (as summarised on page 5 of the EIAR):
<table>
<thead>
<tr>
<th>LISTING ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LISTING NOTICE 1 (GN 327)</strong></td>
</tr>
</tbody>
</table>
| **Activity 12** | The development of:
| | x. Buildings 100 square metres in size |
| **Activity Description** | The township will consist of approximately a 1000 stands of 400-500 square metres |
| **Activity 28** | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such a development:
| | (i) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare |
| **Activity Description** | The development will be outside an urban area and the total land to be developed is approximately 100 hectares |

| **LISTING NOTICE 2 (GN 325)** |
| **Activity 15** | The clearance of an area of 20 hectares or more of indigenous vegetation. |
| **Activity Description** | The proposed development footprint is approximately 100 hectares, which will include the clearance of vegetation. |

| **LISTING NOTICE 3 (GN 324)** |
| **Activity 12** | The clearance of an area of 300 square metres or more of indigenous vegetation |
| | (c) ii within critical biodiversity areas identified in bioregional plans |

- Activity 12 listed in Listing Notice 1 does not seem to apply as the proposed development is located more than 32 meters from the watercourse. A 50m buffer has been applied (as per the recommendations and layout alternative 2-preferred alternative).
Alternatives (including the no-go alternatives were considered). It’s is however recommended that the Alternative 1 and 2 Layout Map be included in Appendix M, the maps that are include as Figure 5 and 6 are not legible.

With regards to the services required for the proposed development, it is proposed that alternative energy measured be considered.

Public participation was conducted in terms of Section 41 of the EIA Regulations, 2014 (as amended).

A description of the surrounding environment was included in the DEIAr.

Impacts and cumulative impacts that could potentially arise from the proposed developments have been assessed in the report, however, the following impacts were not addressed in the report:
- Soil erosion; and
- The potential impact on the habitat due to the accidental introduction of alien invasive species.

The mitigation measures recommended within the DEIAr are supported.

Due to the nature of the project it is recommended that a detailed storm water management plan should be compiled.

In conclusion the DEIAr meets the requirements as set out in Appendix 3 of the EIA Regulations, 2014, as amended.

4.2 EMPr

The EMPr drafted meets the requirements as set out in Appendix 4 of the EIA Regulations, 2014, as amended. It is noted that the EMPr makes recommendation for method statements to be compiled (refer to pg 8 of the EMPr), however, it is recommended that a Revegetation and Rehabilitation Management Plan should be included as an appendix to the EMPr.

4.3 Biodiversity Report:

Based on the review of the Biodiversity Report, it is recommended that the following information be included into the report in order to meet the requirements as set out in Appendix 6 of the EIA Regulations, 2014, as amended:

- A declaration that the specialist is independent (in a form or as specified by the competent authority);
- An indication of the quality and age of the base data used for the report;
- The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment; and
- Include a list of references (material sources of information used in the report) at the end of the report.
5 CONCLUSION

Based on the documents provided, it can be concluded that:

- The information presented is adequate for decision-making;
- The conclusions and recommendations made are in line with the findings of the impact assessment process;
- The EIAr and the EMPr meet the requirements as outlined in Appendix 3 and 4 of the EIA Regulations; and
- The Biodiversity Report needs to amended as per the recommendations made in Section 4.3.

We hope you will find the above to be in order. Please contact us should you have any queries in this regard.

Yours faithfully

Tebogo Mapinga
Mathys Vosloo

ZITHOLELE CONSULTING (PTY) LTD

Attachments:
Appendix A: CVs of the EIA Team
APPENDIX A
CVs of the EIA Team
Tebogo Mapinga

KEY EXPERIENCE

Tebogo is a professional environmental scientist with 12 years’ experience in the environmental management field in both public and private sectors. Her competencies lie in management and co-ordination of environmental projects, environmental impact assessments, compliance monitoring ensuring compliance to legislation and guidelines and public participation for small and large scale projects.

PROJECT EXPERIENCE

2017 Thabamesti Coal Fired Power Station
Permitting

2017 Richards Bay CCPP Power Project
Environmental Screening and Environmental Impact Assessment – EIA

2017 Roggeveld Wind Farm
Environmental Management Programme (EMPr) Amendment and all work required to reach financial close- permitting (Building Energy and G7)

2017 Klawer Wind Farm
EMPr Amendment and all work required to reach financial close- permitting (Building Energy and G7)

2017 Roggeveld Wind Farm
Environmental Management Programme (EMPr) Amendment and all work required to reach financial close- permitting (Building Energy and G7)

2017 Adams PV Facility Upgrading of Charles Street
All work required to reach financial close- permitting (Aurora Power Solutions (Pty)

2016 Bellatrix PV Facility
All work required to reach financial close- permitting (Aurora Power Solutions (Pty) Ltd)

2016 Great Karoo EA amendment
2015 Karusa Wind Farm Jhb
Part 2 EA Amendments (Enel Green Power)
PROJECT EXPERIENCE (continued)

2015  Soetwater Wind Farm  
Part 2 EA Amendments (Enel Green Power)  

2015-17  Gunstfontein Wind Energy Facility  
EIA (ACED)  
Basic Assessment Report (ACED)  

2015  Acwa Power Solar Reserve Redstone Solar Thermal Power Plant  
EMPr amendment  

2015  Sirius Phase One Solar PV Facility  
All work required to reach financial close- permitting) (Aurora Power Solutions (Pty) Ltd)  

2015  Nxuba Wind Farm  
All work required to reach financial close- permitting (ACED and Enel Green Power)  

2015  Upington Two CSP Facility  
EIA (Abengoa Solar South Africa (Pty) Ltd)  

2015  Pofadder 3  
4 EIA Processes (Mainstream Renewable Power South Africa)  
4 separate Basic Assessment Reports (Mainstream Renewable Power South Africa)  

2009  Castle Wind Energy Facility  
EIA (juwi Renewable Energies)  

2009  Spitskop Wind Energy Facility  
Renewable Energy Systems Southern Africa (Pty) Ltd – EIA (RES SA);  

2009  Bobididi Solar Facility  
Environmental Screening- Root 60FOUR Energy (Pty) Ltd  

2009  Great Fish River Watercourse Crossing BAR  
African Clean Energy Developers (Pty) Ltd (ACED)  

2009  Bedford Watercourse Crossing BAR- 
African Clean Energy Developers (Pty) Ltd (ACED)  

2008  EIA at Phaki Phakanani Environmental Consultants  
• Construction of Khetho Bridge, Greater Giyani Local Municipality  
• Demolition and Relocation of Malamulele High School  
• Construction of Malamulele Shopping Complex  
• The Subdivision of land in Ellisrus  
• Construction of the Senwabarwane Filling Station  
• Residential Development in Tlapeng Village  
• Township Development in Maphosa Village
• Establishment of a Piggery in Mogalakwena Local Municipality
• Establishment of two Piggeries in Elias Motsoaledi Local Municipality
• Establishment of a Piggery in Modimolle Local Municipality
• Township Development in Rietfontein
• Public Participation and Section 24G Application for the National Taxi Scrapping Project

2008 **EIA at Strategic Environmental Focus**
• Establishment of a Guest House (ECA application
• Establishment of a Waste Management Depot in Rustenburg
• Establishment of a Waste Management Depot in Tzaneen and Nkowa-Nkowa
• Langkuil Industrial Development, (Environmental Manager and Project Manager);
• Township Development in Reitfontein
• Upgrading of the BP Golf Course
• Construction of the BP Soshanguve VV Filling Station
• Construction of the BP Soshanguve ZZ Filling Station
• Shell Filling Stations (Project Manager and Client Liaison
• Eskom- Komati Water Augmentation
• Rainbow Junction Residential Development
• Township Development in Delmore Park Extension 7
• West Rand District Municipality- Bulk Water Supply
• West Rand District Municipality Air Quality Assessment
• Lonmin K4 Shaft Mine Upgrading
• Westlake Residential Development
• Montana Spruit Upgrading

**EMPLOYMENT RECORD**

<table>
<thead>
<tr>
<th>Year</th>
<th>Company Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Phaki Phakanani Environmental Consultants</td>
<td>Environmental Consultant</td>
</tr>
<tr>
<td>2010</td>
<td>Strategic Environmental Focus</td>
<td>Env. Project Manager</td>
</tr>
<tr>
<td>2013</td>
<td>DEA</td>
<td>Env. Officer Specialised duction</td>
</tr>
<tr>
<td>2010</td>
<td>Savannah Environmental</td>
<td>Principal Env. Manager</td>
</tr>
<tr>
<td>Present</td>
<td>Zitholele Consulting</td>
<td>Senior Environmental Scientist</td>
</tr>
</tbody>
</table>
Dr. Mathys Vosloo

KEY EXPERIENCE

Dr. Mathys Vosloo is a well-qualified and technically proficient environmental and natural scientist with more than 12 years environmental management experience. His experience include Environmental Impact Assessments (EIAs) and the development of Environmental Management Programmes during environmental assessments of construction projects, environmental compliance monitoring and reporting, and Environmental Control Officer (ECO) services for construction projects. Recent experience includes project management and execution of large waste related projects, such as the application for development of Ash Disposal Facilities, and large linear projects such as the management EIA process for the implementation of extensive power lines for renewable projects. Mathys also has substantial experience in Geographical Information Systems (GIS), creating and analysing digital terrain models, runoff and stream flow analysis, stormwater design and map-making for projects in Africa. Further experience include the development and completion of State Of the Environment Reporting (SOER), Strategic Environmental Assessments (SEA) and feasibility studies. Mathys’ experience in natural science include aquatic ecological assessments, project management and sample collection in several west, south and east coast estuaries, including ecosystem analysis of estuaries in the Eastern Cape and former Transkei area.

PROJECT EXPERIENCE

2017  PPP and WOP for Kusile PS 60year ADF  R 2.8m
Public participation process for Wetland Offset Strategy and implementation of Wetland Offset Plan for the Kusile Power Station 60year Ash Disposal Facility.

2017  BA for KEMJV slimes pipeline  R 230 000
Basic Assessment for construction of slimes pipeline for Kimberley Ekapa Mine Joint Venture, Northern Cape.

2016 - 2017  Asbestos Mine Rehabilitation Programme  R 1.3 million
Undertaking environmental site investigations and project scoping for the rehabilitation of 10 derelict and abandoned asbestos mines in Limpopo and Mpumalanga Provinces.
2016  Walkdown & WULA for Kuruman Powerline upgrade  R 355 000
Specialist walkdown of approved 132 kV powerline servitude between Kuruman and Kathu, Northern Cape.

2016 - 2017  EA Amendment for Kuruman Powerline Upgrade  R 60 000
EA Amendment application i.t.o. EIA 2014 regulations for amendment to the approved 132 kV powerline corridor between Hotazel, Kuruman and Kathu, Northern Cape.

2016  Breede-Gourits CMS: Estuarine component  R 81 000
Estuary Situation Assessment to inform the Breede-Gourits Catchment Management Strategy for Breede-Gourits Water Management Area.

2016 - 2017  BA for Tshepisong Extension 4 development  R 198 000
Basic Assessment for Mixed Business and Residential Development within Portion 64 of Farm Vlakfontein 238 IQ, Tshepisong Extension 4, Johannesburg West, Gauteng Province.

2016 - 2017  BA for Patensie Housing Development  R 283 000
Basic Assessment for the Patensie Housing Development, Eastern Cape.

2016  Specialist Walkdown for Kuruman Powerline upgrade  R 355 000
Specialist walkdown of approved 132 kV powerline servitude between Hotazel and Kuruman, Northern Cape.

2016  Solar Park EA Amendment  R 248 000
Environmental Authorisation (EA) Amendment application i.t.o. EIA 2014 regulations for amendments to the Solar Park to Nieuwehoop 400 kV power line corridor near Upington, Northern Cape.

2015 - 2016  Solar Park WULA  R 547 000
WULA for Solar Park to Nieuwehoop 400 kV powerline development near Upington, Northern Cape.

2015 - 2016  BA Clanwilliam Weirs  R 409 000
Proposed Re-alignment of the Bulshoek Dam and Doring River Weirs near Clanwilliam, Western Cape.

2015 - 2016  BA Klipspruit Valley  R 244 000
BA and WULA for the Klipspruit Valley Road Upgrade.

2014 - 2016  EIA Koffiefontein Slimes Dam  R1 million
EIA for the new Koffiefontein Slimes Dam Development, Kimberley.

2014 - 2015  BA and WULA Kuruman Upgrade  R1.3 million
BA and WULA for 132kV power line upgrade from Hotazel to Kuruman and Kathu, Northern Cape.

2013 - 2016  EIA Kendal 30 year Ash Disposal Facility  R6 million
EIA, WMLA and WULA for a new Ash Disposal Facility for Kendal Power Station near Ogies in Mpumalanga.

2013 - 2014  Design of 3 canals  R 700 000
3 x BAs for the proposed prevention of water ingress into previously mined out areas in the Witwatersrand Mining Basin (canalisation of 3 streams), Gauteng.

2013 - 2014  BA for Vaalbank Switching Station  R 380 000
Basic Assessment for Vaalbank Switching Station and 2 x 88 kV Powerlines, Free State.
<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 - 2015</td>
<td>EIA Solar Park EIA, EMP &amp; WULA for the Solar Park 132/400 kV Sub Station and Associated lines, Northern Cape.</td>
<td>R5 million</td>
</tr>
<tr>
<td>2012 - 2015</td>
<td>Kusile 60 year Ash Disposal Facility EIA, WML and WULA for the 60 year Ash Disposal Project near Balmoral in Mpumalanga.</td>
<td>R11 million</td>
</tr>
<tr>
<td>2012 - 2015</td>
<td>WULA Wilge Pipeline WULA for the sewage and water pipeline from Wilge Township to Phola, Mpumalanga.</td>
<td>R 900 000</td>
</tr>
<tr>
<td>2012</td>
<td>BA Kouga Dam Wall The rehabilitation of the Kouga Dam wall and associated mining activities.</td>
<td>R 250 000</td>
</tr>
<tr>
<td>2012</td>
<td>EMP City of Cape Town Stormwater Maintenance and management interventions undertaken by the City of Cape Town in its surface stormwater systems.</td>
<td>R1.5 million</td>
</tr>
<tr>
<td>2012</td>
<td>BA Melkhour Powerlines The installation of 132kV transmission lines from Melkhour to Dieprivier, including the construction of a new substation at Dieprivier, Cacadu District.</td>
<td>R 100 000</td>
</tr>
<tr>
<td>2012</td>
<td>BA Dieprivier Powerlines The installation of 132kV transmission lines from Dieprivier to Kareedouw, including the extension of the existing substation at Kareedouw, Cacadu District.</td>
<td>R 100 000</td>
</tr>
<tr>
<td>2012</td>
<td>BA Patensie Powerlines The installation of 132kV transmission lines from Melkhour to Patensie, including the construction of a new substation at Patensie, Cacadu District.</td>
<td>R 100 000</td>
</tr>
<tr>
<td>2012</td>
<td>Mnthatha River System Catchment delineation and stream calculation for the Mnthatha River System, GIBB Durban.</td>
<td></td>
</tr>
<tr>
<td>2011 - 2012</td>
<td>PRASA Passenger rail and shunting yard proposed sites Environmental Screening for the PRASA passenger rail and shunting yard proposed sites in Cape Town, Gauteng and Durban.</td>
<td></td>
</tr>
<tr>
<td>2010 - 2012</td>
<td>ATTP Flow Limiters installation NMBM Assistance to the poor (ATTP) and schools leakages repairs and flow limiters installation.</td>
<td></td>
</tr>
<tr>
<td>2010 - 2012</td>
<td>ATTP Database Management Flow Limiters installation R4 million NMBM Assistance to the poor (ATTP) and schools leakages repairs and flow limiters installation database management.</td>
<td></td>
</tr>
<tr>
<td>2010 - 2011</td>
<td>ECO Bulk Stormwater Infrastructure Motherwell Installation of bulk storm water infrastructure in Motherwell NU29 and 30 and Implementation of an artificial wetland at the Motherwell stormwater canal outlet structure.</td>
<td></td>
</tr>
</tbody>
</table>
### PROJECT EXPERIENCE (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
<th>Cost</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>BA McAdam Street Upgrade</td>
<td>R 60 000</td>
<td>The extension of McAdam Street from Worraker to Mangold Street, NMBM.</td>
</tr>
<tr>
<td>2009 - 2011</td>
<td>EIA Motherwell Housing Development</td>
<td>R 270 000</td>
<td>Motherwell NU 31 housing development, NMBM.</td>
</tr>
<tr>
<td>2009 - 2011</td>
<td>EIA Kouga Wind Farm</td>
<td>R 350 000</td>
<td>Kouga 300 MW wind farm, Kouga Local Municipality.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>ECO Swartkops River Artificial Wetland</td>
<td></td>
<td>Swartkops River, NMBM.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>ECO Humewood Road Upgrade</td>
<td></td>
<td>Realignment of the S-bend section of Humewood Road in Humewood.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>ECO Paapenkuils Sewer Augmentation</td>
<td></td>
<td>Paapenkuils Main Sewer Augmentation in Port Elizabeth NMBM.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>ISWMP Coega IDZ</td>
<td>R 350 000</td>
<td>Coega IDZ Eastern Sector Integrated Stormwater Management Plan, CDC.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>SOER Flood Plain and Spatial Analysis</td>
<td></td>
<td>Nelson Mandela Metropolitan Municipality SOER flood plain and spatial analysis, NMBM.</td>
</tr>
<tr>
<td>2009 - 2010</td>
<td>EIA – Red Cap Developments</td>
<td></td>
<td>Kouga Local Municipality wind farm development EIA, RedCap Developments.</td>
</tr>
<tr>
<td>2008</td>
<td>ECO Sherwood Road Upgrade</td>
<td></td>
<td>Upgrading of Devon and Fairley Roads in Port Elizabeth, NMBM.</td>
</tr>
<tr>
<td>2008</td>
<td>OR Tambo District Municipality water conservation and demand management</td>
<td></td>
<td>OR Tambo District Municipality water conservation and demand management.</td>
</tr>
<tr>
<td>2008</td>
<td>Kouga Local Municipality catchment and flood attenuation analysis</td>
<td></td>
<td>Jeffreys Bay Marina Martinique catchment and flood attenuation analysis, Kouga Local Municipality.</td>
</tr>
<tr>
<td>2008</td>
<td>EIA Bethelsdorp Housing Development</td>
<td>R 230 000</td>
<td>Bethelsdorp Phase 3 social housing development, NMBM.</td>
</tr>
</tbody>
</table>
## PROJECT EXPERIENCE (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
<th>Cost (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>BA Beacon Maritime Navigational Structure Upgrade</td>
<td>60 000</td>
</tr>
<tr>
<td>2008</td>
<td>BA Moffet Dam Rehabilitation</td>
<td>60 000</td>
</tr>
<tr>
<td>2008</td>
<td>BA Pollok Beach light mast installation</td>
<td>50 000</td>
</tr>
<tr>
<td>2008</td>
<td>BA Humewood Road Re-alignment</td>
<td>60 000</td>
</tr>
<tr>
<td>2008</td>
<td>SOER Hessequa Local Municipality</td>
<td>200 000</td>
</tr>
<tr>
<td>2008</td>
<td>SEA Coastline redevelopment</td>
<td>250 000</td>
</tr>
<tr>
<td>2008</td>
<td>Mzimkhulu River catchment and flood attenuation analysis</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>PE Paapenkuils River catchment and flood attenuation analysis</td>
<td></td>
</tr>
<tr>
<td>2007-2008</td>
<td>ECO Mavuso Road Upgrade</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>BA Jagersfontein Chicken Farm</td>
<td>40 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Zwide Roads Upgrade</td>
<td>55 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA McAdam Street Construction</td>
<td>40 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Tygerbay Reconstruction</td>
<td>60 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Lorraine Infill development</td>
<td>40 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Sherwood Roads Upgrade</td>
<td>40 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Zwide Roads Upgrade</td>
<td>40 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Pollok Beach Parking Lot</td>
<td>50 000</td>
</tr>
<tr>
<td>2007</td>
<td>BA Uitenhage Roads Upgrade</td>
<td>40 000</td>
</tr>
</tbody>
</table>
PROJECT EXPERIENCE (continued)

2007  BA PE ICC Site Assessment  
Port Elizabeth International Convention Centre Rapid site assessment, NMBM.

2007  EIA Exemptions Applications Motherwell  
Motherwell/Coega outfall canal upgrade.

2007  EIA Exemptions Applications Lorraine Infill Development  
Erf 17, Lorraine, infill development.

2007  EIA Exemptions Applications Korsten Upgrade  
Korsten Modal Interchange Upgrade.

2007  GIS SANRAL outdoor advertising opportunities  
SANRAL outdoor advertising opportunities in the Eastern Cape, SANRAL.

2007  Coega Integrated Stormwater Plan  
Coega Integrated Stormwater Plan, Coega Development Corporation.

2007  Uitenhage Stormwater Master Plan  
Uitenhage Stormwater Master Plan, NMBM.

2006  Nelson Mandela Metropolitan University exchange programme  
Analyses and identification of nematode collected samples from the Mngazi Estuary in the Eastern Cape (former Transkei), South Africa, University of Ghent, Belgium – Nelson Mandela Metropolitan University exchange programme.

2005 - 2006  Berg River Reserve Determination Study  
Hyperbenthos and zooplankton field assessment in Berg River estuary.

2005  Olifants River Reserve Determination Study, Western Cape  
Specialised field ecologist - Field assessment: subtidal macrozoobenthos, hyperbenthos and zooplankton in Olifants River estuary for the Olifants River Reserve Determination study, Western Cape., Contracted sampling for CSIR Stellenbosch (Environmentek).

2004- 2005  DWAF - Kromme and Seekoei Estuary Reserve Determination Study  
Specialised field ecologist - Kromme and Seekoei Estuary Catchment Reserve Study. Contracted sampling for Department of Water Affairs and Forestry (DWAF).

2003 - 2004  Berg River Baseline Monitoring Program (UCT)  
Berg River Baseline Monitoring Program (UCT). Collecting subtidal macrozoobenthos.

2002 - 2006  University of Port Elizabeth Ecological analysis  
Specialised field ecologist - Field assessment: subtidal macrozoobenthic and hyperbenthic invertebrates, zooplankton, microzooplankton, meiofauna at Mngazi and Mngazana River estuaries.

2002 - 2003  University of Port Elizabeth Ecological analysis  
Ecological analysis of the functioning Sundays, Swartkops, Kromme, and Gamtoos estuaries using Ecopath with Ecosim, and assessment of the impact of recreational fishing on these ecosystems. MSc dissertation, University of Port Elizabeth.
PROJECT EXPERIENCE (continued)

2002  
Sylt Ecosystem, Germany  
R 250 000
Assistant ecosystem modeller - Assisting in preparation and balancing of ecosystem carbon flow models of the Sylt Ecosystem, Germany.

2002  
Field assessment: subtidal macrozoobenthos, hyperbenthos and zooplankton in Rooiels  
R 400 000
Specialised field ecologist - Field assessment: subtidal macrozoobenthos, hyperbenthos and zooplankton in Rooiels, Palmiet, Heuningnes, Breede, Klein Brak and Kaaimans River estuaries, Western Cape.

2002  
Field Assessment - intertidal invertebrates Eastern Cape  
R 150 000
Specialised field ecologist - Field assessment: intertidal invertebrates in Kabeljous, Gamtoos, Swartkops, Sundays and Kariga River estuaries, Eastern Cape.

PAPERS, PUBLICATIONS, PRESENTATIONS AND PROFESSIONAL SOCIETIES

PAPERS, PUBLICATIONS


PROFESSIONAL SOCIETIES

1. Member of International Association for Impact Assessment – South Africa (IAIAsa)
2. Registered member of South African Council for Natural Scientific Professions, (SACNASP)

EMPLOYMENT RECORD

2013 - Present  
Zitholele Consulting  
Manager: Licencing and Permitting, Senior Environmental Consultant

2012  
GIBB Engineering and Science  
Senior Environmental Scientist

2007 – 2011  
GIBB Engineering and Science  
Environmental Scientist
<table>
<thead>
<tr>
<th>Year Range</th>
<th>Institution</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 – 2011</td>
<td>Nelson Mandela Metropolitan University</td>
<td>Postgraduate (part-time) Student</td>
</tr>
<tr>
<td>2005 – 2007</td>
<td>Nelson Mandela Metropolitan University</td>
<td>Full time Postgraduate (PhD) Student</td>
</tr>
<tr>
<td>2001 - 2003</td>
<td>University of Port Elizabeth</td>
<td>Full time postgraduate (MSc) Student</td>
</tr>
<tr>
<td>2006</td>
<td>University of Ghent, Belgium</td>
<td>Exchange Ecologist</td>
</tr>
</tbody>
</table>