

Curriculum vitae: Mr R NAWN

Name : **NAWN, RYAN**
Date of Birth : 24 June 1978
Profession/Specialisation : Environmental Scientist & Registered Lead Auditor
Nationality : South African
Years' experience : 21+

Key qualifications

Ryan Nawn holds a M.Sc. degree in Environmental Management from the then Rand Afrikaans University (presently University of Johannesburg). He has twenty-one (21) years' working experience in environmental management. He is vastly experienced in the implementation, maintenance and auditing of Environmental Management Systems (EMS) and has conducted a wide range of environmental audits ranging from company internal audits, environmental authorisation audits, water use license audits, waste license audits and EMS surveillance and certification audits. Ryan is a registered ISO 14001 EMS Lead Auditor with the Southern African Auditor & Training Certification Authority (SAATCA) – one of only limited few in South Africa who is both an Environmental Assessment Practitioner and EMS Auditor. He also facilitates training courses in ISO 14001 – ranging from implementation, transition, and lead auditor courses on behalf of various certification bodies and training institutions.

Ryan has been involved in developing Environmental Management Plans for the green building industry and subsequent audits thereof. Significant experience has been gained in environmental compliance monitoring by working on large linear construction projects such as the Vaal River Eastern Sub-system Augmentation Project (VRESAP); the Olifants River Water Augmentation Project – Phase 2; as well as the Mokolo-Crocodile Water Augmentation Project – Phase 1 (MCWAP) in Lephalale. Relevant experience has also been gained in integrated environmental management processes such as Environmental Impact Assessments (EIAs) and Basic Assessment processes and Reports (BARs), and the development of EMPs. Mr Nawn has also been actively involved in public participation and community development processes. He has research experience in water quality and catchment management.

Employment record

01/2014 - Date	Prism Environmental Management Services (Pty) Ltd., Director
07/2012 – 12/2013	Aurecon (Pty) Ltd., Associate
03/2009 – 06/2012	Aurecon (previously Africon, Ninham Shand and Connell Wagner), Principal Environmental Specialist
08/2005 - 02/2009	Ninham Shand (Pty) Ltd, Environmental Specialist
01/2000 - 07/2005	Pretoria Metal Pressing (division of DENEL (Pty) Ltd), Company Environment Officer
06/1999 - 12/1999	Kentron (division of DENEL (Pty) Ltd), Junior Environmental Officer

Experience record

Environmental Impact Assessment process for the Montrose Interchange replacing the existing N4 national toll route and R539 Schoemanskloof Road T-junction (Mpumalanga Province) 2019 - current. *Environmental Assessment Practitioner.* Responsible for assessing and completing an Environmental Impact Assessment process and report for the proposed construction of the Montrose Interchange at a T-junction of two prominent roads near Mbombela. The project is a requirement from the South African National Roads Agency (SANRAL) who have in turn appointed a concessionaire (Trans African Concessions – TRAC) to upgrade and maintain the N4 national toll route between Pretoria and Maputo in Mozambique (Trans African Concessions).

Safety, Health and Environmental Compliance Obligations Audit and Report for Plant Design and Project Management (Pty) Ltd. Secunda (Mpumalanga Province) 2019. *Auditor and Project Manager.* Conducted a legal compliance audit against the SHE legal requirements of PDPS' main facilities outside Secunda. The audit identified all legal compliance gaps and culminated in a detailed audit report which was used towards certification to the ISO 14001: 2015 and ISO 45001:2018 Standards. (PDPS).

Eskom Distribution: North-west Province - ISO 14001:2015 advisory assignment, Rustenburg (North West Province) 2018. Lead Auditor and EMS Specialist. The client's EMS was comprehensively reviewed on-site, and advisory sessions were held with all SHEQ staff in terms of gaps found in their developed EMS and recommendations towards full conformance to the ISO 14001:2015 standard. The advisory assignment was over a three-day period. The organisation was later certified in terms of ISO 14001:2015 by an accredited certification body. (Eskom Distribution).

Sumitomo Rubber South Africa (Pty) Ltd. Second Party ISO 14001:2015 EMS gap audit at the tyre producing plant, Ladysmith (Kwa-Zulu Natal Province) 2018. Lead Auditor. SiVest Engineers appointed Prism EMS to conduct a 2nd Party gap audit on Sumitomo's EMS. The EMS was comprehensively audited in terms of conformance to the ISO 14001:2015 international standard and its own EMS requirements. Gaps were identified between its older EMS (which conformed to the 2004 version of the standard), whilst non-conformances were clearly described in an all-inclusive and detailed audit report. (SiVest).

Kaefer ISO 14001:2015 management training facilitation at the head office facilities, Johannesburg (Gauteng Province) 2018. EMS Facilitator. The client required that SHEQ management staff be trained in terms of implementation of an environmental management system's implementation that would conform to the minimum requirements of the ISO 14001:2015 standard. A comprehensive course was prepared and facilitated for the client which enabled key staff to improve and get their EMS up to a level of conformance for certification by an accredited certification body (Kaefer).

Sumitomo Rubber South Africa (Pty) Ltd. ISO 14001:2015 management training facilitation at the tyre producing plant, Ladysmith (Kwa-Zulu Natal Province) 2018. EMS Facilitator. The client required that SHEQ management staff and middle management staff be trained in terms of implementation of an environmental management system's implementation that would conform to the minimum requirements of the ISO 14001:2015 standard. A comprehensive course was prepared and facilitated for the client which enabled key staff to improve and get their EMS up to a level of conformance for certification by an accredited certification body (Sivest).

Eskom Hendrina Power Station Environmental Aspects & Impacts, Compliance Obligations determinations and EMPr update assignment, Hendrina (Mpumalanga Province) 2018. Lead Auditor and EMS Specialist. The client required that its aspects & impacts register be updated to include all aspects and associated impacts emanating from all its activities, products and services. Additional to this, all compliance obligations were to be listed in the same register pertaining to each aspect and the organisation's environmental management program (EMPr) updated to reflect latest objective to be achieved. The resultant work enabled the client to not only close non-conformances raised by their certification body regarding these registers but also to improve the base of their EMS. (Eskom Hendrina Power Station).

Harmony Gold Second Party ISO 14001:2015 EMS gap review at the Doornkop Gold Mine, Johannesburg (Gauteng Province) 2018. Lead Auditor. Environmental Impact Management Services (Pty) Ltd. (EIMS) appointed Prism EMS to co-audit Harmony Gold's Doornkop Mine EMS. The EMS was comprehensively reviewed in terms of conformance to the ISO 14001:2015 international standard and its own EMS requirements. Gaps were identified between its older EMS (which conformed to the 2004 version of the standard), whilst recommendations clearly described for all non-conforming aspects of their EMS. (EIMS).

Forfar Railway Siding Water Use License compliance audit, Bronkhorstspuit (Gauteng Province) 2018 Lead Auditor. Aplorox's Forfar Railway Siding project which was under construction forms part of the coal rail transport network in the coalfield of South Africa's highveld. The project was granted a Water Use License for a varying range of water resource impacts. An audit was conducted and assessment of the level of compliance was provided in an audit report submitted to the client who in turn had to submit these to the Department of Water & Sanitation. (Myezo Environmental Management Services).

Straight Forward Chassis Second Party ISO 14001:2015 EMS gap audit at the workshop facilities, Johannesburg (Gauteng Province) 2019. Lead Auditor. The client's existing management system was comprehensively audited in terms of conformance to the ISO 14001:2015 international standard. Non-conforming issues were largely identified and which culminated in a detailed audit report for the client's perusal towards full conformance in future (RiskZA).

Environmental Control Officer (ECO) role for Strengthening and Raising of the Clanwilliam Dam project in Clanwilliam (Western Cape Province) 2016 - 2021. Project Leader. The Department of Water and Sanitation had attained an environmental authorisation for the strengthening and raising of the Clanwilliam Dam. The dam is to be raised by 15 m (from 43 m to 58 m). The authorisation requires that an independent ECO be appointed to oversee the environmental compliance and performance of the proponent, and its contractors during the construction of the project. The ECO is required to compile audit reports and submit these to the client. Responsible for overseeing the role of the ECO and review all monitoring reports (Zitholele Consulting).

Environmental Management System training courses development and facilitation to Plant Design and Project Management (Pty) Ltd. Secunda (Mpumalanga Province) 2018 - current. EMS specialist and facilitator. Was appointed by one of SASOL's prominent engineering contractors to provide training course material and facilitation and examination paper development for a range of environmental management system courses in terms of ISO 14001:2015 and quality management system courses in terms of ISO 9001:2015. Courses facilitated include: 5-Day ISO 14001:2015 Introduction and Implementation Course, 1-Day Top Management Awareness, 2-Day Middle Management Awareness, and 5-Day Lead Auditor Courses. Delegates' examination compilations and marking also formed part of the responsibilities. (PDPS).

Environmental Management System 2nd Party Internal Audits and Reporting for Plant Design and Project Management (Pty) Ltd. Secunda (Mpumalanga Province) 2018 - current. Lead Auditor. Conducted annual internal audits of the organisation's conformance to the ISO 14001 standard and the organisation's own developed environmental management system. The audits culminated in detailed audit reports that proved invaluable to the client in its endeavour to become ISO 14001: certified. (PDPS).

Safety, Health and Environmental Compliance Obligations Audit and Report for Eazi Access (Pty) Ltd. South Africa 2019. Auditor and Project Manager. Conducted several legal compliance audits at various facilities nationwide against the SHE legal requirements of Eazi Access' operations and services. The audit identified all legal compliance gaps and culminated in a detailed audit report which was used towards certification to the ISO 14001: 2015 and ISO 45001:2018 Standards. (RiskZA).

Eskom's Kusile Power Station: Water Use Licenses quarterly compliance audits, Witbank (Mpumalanga Province) 2016 - 2018. Lead Auditor. Eskom's Kusile Power Station construction project is currently the largest construction project in the southern hemisphere. The project was granted five Water Use Licenses for a varying range of water resource impacts. Quarterly audits of all the WULs requirements were conducted and assessment of the level of compliance was provided in audit reports submitted to the client who in turn had to submit these to the Department of Water & Sanitation. (Eskom via Senkosi Environmental).

First Party ISO 14001:2015 EMS Internal Audits for Basil Read's Olifants Water Resource Development Project in Steelpoort (Limpopo Province) 2017 - 2019. Lead Auditor. Conducted annual internal audits of the large construction company's conformance to the ISO 14001:2015 standard, its own developed environmental management system requirement and the requirements as set out in the Project's Environmental Specifications. The audits culminated in detailed audit reports that proved invaluable to the client in its endeavour to not only remain certified in terms of the ISO 14001:2015 Standard but also to the expectations of the Trans Caledon Tunnel Authority (TCTA).

Trans African Concessions: N4 National Highway Road Water Use License quarterly audits, Middelburg (Mpumalanga Province) 2015 - 2017. Lead Auditor. The South African National Roads Agency SoC Limited (SANRAL) as custodian of the country's national roads has appointed a concessionaire Trans African Concessions (Trac) to manage, operate, maintain and improve the N4 highway between Maputo in Mozambique and Pretoria in South Africa for a period of 30 years (contract ending 2028). Trac's upgrade project outside Middelburg granted an integrated Water Use License for a varying range of water resource impacts. Quarterly audits of all the WUL requirements were conducted and assessment of the level of compliance was provided in audit reports submitted to the client who in turn had to submit these to the Department of Water & Sanitation. (Trans African Concessions).

ISO 14001 consultative services for large organisation's quest towards EMS implementation and certification (Gauteng Province) 2017. Environmental Management Systems specialist. Prism EMS was appointed by Consolidated Power Projects as leading powerline contracting firm in Southern Africa to advise and assist the firm in development of an environmental management system (EMS) such that it conforms to the minimum requirements of the ISO 14001:2015 International Standard. The firm was later that year certified by a certification body and continues to retain this status to date. (Consolidated Power Projects).

Environmental Management System (EMS) transition implementation at the Assmang Manganese's Black Rock Mining Operations (Northern Cape) 2018. *Environmental Specialist.* Formed part of specialist team who assisted in developing a SHEQ Management System conforming to the ISO Standards in their latest revisions. The project spanned numerous months and ultimately resulted in Assmang achieving certification from an external certification body. (Wynleigh International).

Water quality sampling, analysis and reporting of various water sources for a large construction firm, Mokopane, Polokwane, Pretoria and Johannesburg (Gauteng Province) 2016 - 2017. *Environmental Specialist.* Prism EMS was appointed by Consolidated Power Projects as leading powerline contracting firm in Southern Africa to sample, analyse and report on various sources of water which included borehole water, municipal water sources and transported bulk water for potable use. Personally conducted the monitoring and reporting. (Consolidated Power Projects).

Environmental Control Officer role for construction of the Kronos Sub-station and Kronos – cuprum 400 kV powerlines, Prieska (Northern Cape Province) 2015 - 2017. *Project Leader.* Prism EMS was appointed by Eko Info as environmental control officer (ECO) to oversee the construction of the Kronos sub-station and Kronos – Cuprum 400 kV powerlines – a project which formed a crucial link between the northern and southern electricity grid inter-connectivity and of national importance to the country. Managed and assisted consultancy's ECO to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Also responsible for client liaisons. (Eko Info cc).

Eskom's Hendrina Power Station: Atmospheric Emissions License compliance audit, Hendrina (Mpumalanga Province) 2017. *Lead Auditor.* One of Eskom's oldest power stations, Hendrina Power Station was granted an Atmospheric Emissions License (AEL) for several point source emissions. The power station was granted and AEL which requires, *inter alia* that compliance towards it be audited by an external registered environmental auditor. A comprehensive audit was conducted culminating in a report of the station's compliance level. These reports were submitted to the client who in turn had to submit these to the Department of Environmental Affairs. (Eskom via Zitholele Consulting).

Hantle Mining Aquatic Assessment, Northam (Limpopo Province) 2017. *Project Leader.* A sand mining operation required a Water Use License Application (WULA) and part of this application with the Department of Environmental Affairs was for an aquatic assessment to be conducted since the proposed operations were on the banks of the Crocodile River – a prominent river and tributary to the Limpopo River system (one of South Africa's largest rivers). Not only were riparian vegetative assessments conducted, but fish sampling as well as invertebrates scoring counts using the South African Scoring System – version 5 (SASS-5). A comprehensive report was prepared which was submitted to the client who in turn required the report to be submitted with his WULA. (Hantle Mining).

Second Party ISO 14001:2015 EMS Internal Audits for Robor steel pipes and tubing producer in Johannesburg (Gauteng Province) 2015 - current. *Lead Auditor.* Conducted annual internal audits of conformance to the ISO 14001 standard and the organisation's own developed environmental management system. The audits culminated in detailed audit reports that proved invaluable to the client in its endeavour to not only remain certified in terms of the ISO 14001 Standard but also to continually improve its EMS (Robor International).

Eskom's Medupi Power Station: Legal Compliance Audit, Lephalale (Limpopo Province) 2017. *Environmental Auditor.* The Medupi Power Station is one of the two largest power stations in Africa and was under construction when appointment was made to assist in auditing the power station's compliance to its different Environmental Authorisations. These, together with the requirements of the Construction Environmental Management Plan form standards to which the station must comply to. Comprehensive audit reports were submitted to the client for perusal and onward submission to the national Department of Environmental Affairs. (Eskom via EIMS).

Coca-Cola Second Party ISO 14001:2015 EMS Internal Audits for their Swaziland operations (Swaziland) 2015 - current. *Lead Auditor.* Conducted several internal audits of conformance to the ISO 14001 standard and the organisation's own developed environmental management system. The audits culminated in detailed audit reports that proved invaluable to the client in its endeavour to not only remain certified in terms of the ISO 14001 Standard but also to continually improve its EMS. (Coca-Cola Swaziland).

Coca-Cola ISO 14001:2015 and ISO 9001:2015 transition and implementation training to all staff at their Swaziland operations (Swaziland) 2017. Training facilitator. Was appointed to prepare and present training on transition to the latest ISO 14001 and ISO 9001 2015 versions of the Standards as well as overall implementation of an Environmental Management System and Quality Management System. Training of all staff took one week to present. (Coca-Cola Swaziland).

Coca-Cola Safety, Health and Environmental (SHE) Compliance Obligations Audit for their Swaziland operations (Swaziland) 2019. Auditor and Project Manager. Conducted a legal compliance audit against the SHE legal requirements of Coca-Cola's soft drinks concentrates plant in Swaziland. The audit identified all legal compliance gaps and culminated in a detailed audit report. (Coca-Cola Swaziland).

Steyn City green residential and lifestyle development Water Use License Annual Audits in Johannesburg (Gauteng Province) 2014 - current. Environmental Auditor. Was appointed to conduct annual Water Use License Audits for the Steyn City Residential and Lifestyle Development. The development is currently the largest 'green' development in South Africa and stringent requirements set by the Department of Water Affairs is to be complied with by the developer and its contractors. The reports are provided to the Department for perusal and comment. (Steyn City development).

Valumax road development project Water Use License Annual Audit in Johannesburg (Gauteng Province) 2019. Environmental Auditor. Was appointed to conduct a Water Use License (WUL) Audit for Valumax – a large contractor company which built a new road in a new development. The road construction included construction over the Jukskei River and another tributary – these crossings required a WUL which in turn required that a 2nd Party audit be conducted on the contractor's compliance to the WUL conditions. The report was provided to the Department for perusal and comment. (Valumax).

Eskom ISO 14001:2015 transition and implementation training to SHEQ staff across South Africa (South Africa) 2017 - 2018. Training facilitator. Was appointed to present transition training to a couple of hundred individuals in terms of the latest ISO 14001 version of the Standards as well as overall implementation of an Environmental Management System conforming to this Standard. Training of staff across the country was a 4-month contract. (Eskom via ISO-Q Training).

Consolidated Power Projects hydrocarbons contamination determinations assignment (Malawi) 2017. Environmental Specialist. Was appointed to determine levels of hydrocarbon contamination from existing brownfield sites across an approximate distance of 460 km between sites furthest apart along the west of Lake Malawi. The assignment formed part of an electricity distribution line project for the Malawian energy commission. Soil samples at various depths were taken and later analysed in South Africa and results communicated in a concise finding report to the client. (Consolidated Power Projects).

Aveng-Grinaker LTA civils unit: Second Party ISO 14001:2015 EMS external audit at the contractor's showcase project at Kusile Power Station, Witbank (Mpumalanga Province) 2017. Lead Auditor. The client's EMS was comprehensively audited in terms of conformance to the ISO 14001:2015 international standard and its own EMS requirements. Gaps were identified between its older EMS (which conformed to the 2004 version of the standard), whilst non-conformances were clearly described in an all-inclusive audit report. (Aveng-Grinaker LTA).

Water, Noise & Dust monitoring of the Mokolo-Crocodile Water Augmentation Project, Lephalale (Limpopo Province) 2015 - 2017. Environmental Specialist. Was appointed to determine surface water quality, levels of dust emissions and noise levels from various positions along a 42 km long pipeline project near Lephalale, Limpopo province. The sampling was undertaken on a fortnightly frequency and a period of two years. The assignment formed part of a water distribution project, namely the Mokolo-Crocodile Water Augmentation Project (MCWAP). Physical water quality constituents were determined *in situ*, while chemical and microbial constituents were determined in a laboratory. Dust fallout samples were determined in the laboratory as well. Noise levels during the construction phase and after were also determined in the field with a Type 2 noise level meter. Comprehensive monitoring reports were submitted to the client on monthly basis. (Aurecon-Ndodana Joint Venture).

Environmental Officer for the Borutho-Witkop 400 kV transmission line project, Polokwane (Limpopo Province) 2015 - 2018. Project Leader. Eskom required a 400 kV electricity transmission line to be constructed between two existing sub-stations. Consolidated Power Projects (CONCO) were appointed as main contractor for the construction of the lines and the tie-in and out work with the sub-stations. CONCO appointed Prism EMS as permanent on-site Environmental Officer (EO) for the duration of the project. This individual and his role was managed for the duration of the project. (Consolidated Power Projects (Pty) Ltd.).

Environmental Officer for the Medupi-Boruthu 400 kV transmission line project, Mokopane (Limpopo Province) 2017 - 2019. Project Leader. Eskom required a 400 kV electricity transmission line to be constructed between the existing Medupi and Borutho sub-stations. Consolidated Power Projects (CONCO) were appointed as main contractor for the construction of the lines and the tie-in and out work with the sub-stations. CONCO appointed Prism EMS as permanent on-site Environmental Officer (EO) for the duration of the project. This individual and his role was managed for the duration of the project. Various environmental sensitivities and challenges were addressed with the EO during the project. (Consolidated Power Projects (Pty) Ltd.).

Environmental Officer for the Ermelo-Majuba 88 kV distribution line project, Ermelo (Mpumalanga Province) 2016 - 2018. Project Leader. Eskom required a 88 kV electricity supply line to be constructed alongside a railway line for coal transportation to the Majuba Power Station. Consolidated Power Projects (CONCO) were appointed as main contractor for the construction of the lines. CONCO appointed Prism EMS as permanent on-site Environmental Officer (EO) for the duration of the project. This individual and his role was managed for the duration of the project. Various environmental and wetland sensitivities were addressed with the EO during the project. (Consolidated Power Projects (Pty) Ltd.).

Environmental Management System training facilitation for various courses at the SABS, South Africa 2014 - current. Facilitator. Was appointed by the South African Bureau of Standards to facilitate a range of environmental management system courses over a five-year period in terms of ISO 14001:2004 and ISO14001:2015. Courses facilitated include their 5-Day ISO 14001:2015 Implementation and 5-Day Lead Auditor Courses which are accredited by the South African Auditor and Training Certification Authority (SAATCA). Delegates' examination marking also formed part of the responsibilities. (SABS SoC Ltd.).

Environmental Management System training facilitation for various courses developed by RiskZA, South Africa 2015 - current. Facilitator. Was appointed by one of South Africa's reputable training organisations to assist with facilitation and examination paper development for a range of environmental management system courses in terms of ISO 14001:2004 and ISO14001:2015. Courses facilitated include their 3-Day ISO 14001:2015 Introduction and Implementation Course, 2-Day Internal Auditor Course and 5-Day Lead Auditor Courses which are accredited by the South African Auditor and Training Certification Authority (SAATCA). Delegates' examination marking also formed part of the responsibilities. (RiskZA (Pty) Ltd.).

Environmental Management System training facilitation for various courses developed by WTH, South Africa 2015 - current. Facilitator. Was appointed by a prominent training organisation to assist with facilitation of a range of environmental management system courses in terms of ISO 14001:2004 and ISO14001:2015. Courses facilitated include their 3-Day ISO 14001:2015 Introduction and Implementation Course and the 5-Day Lead Auditor Courses which are accredited by the South African Auditor and Training Certification Authority (SAATCA). Delegates' examination marking also formed part of the responsibilities. (WTH).

Environmental Officer for construction of the Aries powerline and sub-station for Transnet, Kenhardt (Northern Cape Province) 2017 - current. Project Leader. Transnet required a powerline to be constructed between the Aries Solar Farm and the existing railway line near Kenhardt. Consolidated Power Projects (CONCO) were appointed as main contractor for the construction of the powerline, the sub-station upgrades and associated tie-in and out work. CONCO appointed Prism EMS as permanent on-site Environmental Officer (EO) for the duration of the project. This individual and his role was managed for the duration of the project. (Consolidated Power Projects (Pty) Ltd.).

Grass owl presence assessment, Kusile – Zeus 400 kV powerline project, Ogies (Mpumalanga province) 2017. Project Leader. Was appointed by a prominent transmission and distribution lines contractor firm to undertake an assessment of the possible presence of Grass owls in a section of their 400 kV powerline construction project. A field assessment was conducted which culminated in a detailed report of the presence of Grass owls which was used to inform design of this section of the line. (Consolidated Power Projects).

Afrisam Dudfield cement plant: Second Party ISO 14001:2015 EMS and ISO 9001:2015 Internal Audits at the cement factory's facility near Lichtenburg (North West Province) 2018. Lead Auditor and Project Manager. The client's EMS and QMS were comprehensively audited in terms of conformance to the ISO 14001:2015 and ISO 9001:2015 international standards and their own EMS and QMS requirements. The audits culminated in comprehensive audit reports for the client's perusal. Additional to this audit, facilitation sessions with all management staff were held in order to communicate the changes to the latest versions of the standards. (Afrisam).

Environmental Sensitivity Scans and Public Notification Process for the Gauteng Department of Roads and Transport preliminary routes design project, Gauteng (Gauteng province) 2016 - 2017. *Environmental Specialist & Project Manager.* The client, SMEC Engineers was appointed by the Gauteng Department of Roads and Transport to undertake a preliminary design for 11 routes to be introduced or upgraded in Pretoria. An environmental scan, flora & fauna, aquatic resources desktop studies were conducted as well as a heritage sensitivities desktop study. Numerous public engagement forums were arranged, facilitated and recorded as part of the assignment which took almost a year to complete. (SMEC Engineers).

Abengoa Solar – Kaxu CSP O&M Company (Pty) Ltd. KaXu Water Use License compliance audit, Pofadder (Northern Cape Province) 2017. *Lead Auditor.* Abengoa Solar – Kaxu CSP O&M Company is one of the Independent Power Producers (IPPs) of South Africa and built the KaXu Solar Farm near Pofadder. The project was granted a Water Use License for a varying range of water resource impacts. An audit was conducted and assessment of the level of compliance was provided in a comprehensive audit reports submitted to the client who in turn had to submit these to the Department of Water & Sanitation. (Abengoa Solar – KaXu CSP O&M Company).

Kaefer Second Party ISO 14001:2015 EMS gap audit at the head office facilities, Johannesburg (Gauteng Province) 2017. *Lead Auditor.* The client's EMS was comprehensively audited in terms of conformance to the ISO 14001:2015 international standard and its own EMS requirements. Gaps were identified between its older EMS (which conformed to the 2004 version of the standard), whilst non-conformances were clearly described in an all-inclusive audit report. The organisation was later certified in terms of ISO 14001:2015 by an accredited certification body (Kaefer).

Wetlands and Flora sensitivities assessment, Majuba 88 kV powerline project, Ermelo (Mpumalanga province) 2016. *Project Leader.* Was appointed by a prominent transmission and distribution lines contractor firm to undertake a detailed wetlands and plants sensitivities assessment and report for the proposed 88 kV powerline project between Ermelo and Majuba Power Station. All wetland crossings were identified, mapped and sensitive plant species geo-referenced in the report. Suggested pylon relocations were made in the report. (Consolidated Power Projects).

Afrisam Dudfield cement plant: Second Party ISO 14001:2015 EMS gap audit at the cement factory's facility near Lichtenburg (North West Province) 2016. *Lead Auditor.* The client's EMS was comprehensively audited in terms of conformance to the ISO 14001:2015 international standard and its own EMS requirements. Gaps were identified between its older EMS (which conformed to the 2004 version of the standard), whilst non-conformances were clearly described in an all-inclusive audit report. (Afrisam).

Environmental Officer role for the construction of the Musina Ring Road project, Musina (Limpopo Province) 2016. *Project Leader.* Prism EMS was appointed by Basil Read as prominent civils contracting firm in Southern Africa for the construction of phase of the Musina Ring Road project where its own Environmental Officer (EO) was appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of the on-site EO role and client liaisons. (Basil Read).

Watercourse Management Plan for the Walker Creek Green Building Development Project, Pretoria (Gauteng Province) 2016. *Environmental Scientist.* The client, Aurecon, assisted with green building design and planning initiatives for the new office and medical centre precinct which was to achieve "a green star" rating as per the requirements of the green building standards of the Green Building Council of South Africa. A watercourse management plan for the proposed precinct was developed. (Aurecon).

Second Party ISO 14001:2015 EMS gap audit for Peppadew International food processing facility in Tzaneen (Limpopo Province) 2015. *Lead Auditor.* The client was planning to develop an EMS and required that an in-depth gap audit be conducted on its conformance levels to the ISO 14001:2015 at the time to determine all the gaps still to be addressed for its EMS prior to approaching a certification body. Gaps were identified and clearly described in a comprehensive gap audit report. (Peppadew International).

Basic Assessment Report (BAR) process for the Section 6E road improvements project of the N4 National Highway, near Nelspruit (Mpumalanga Province) 2016. *Environmental Specialist.* In this project, a positive Environmental Authorisation (EA) was granted by the national Department of Environmental Affairs. Responsible for assessing and completing a basic assessment process & report for the proposed lengthening of existing overtaking lanes and introduction of new lanes along the N4 highway between Ngodwana and Waterval Onder. (Trans African Concessions).

Vlakfontein Colliery performance assessment, Ogies (Mpumalanga Province) 2017. Environmental Auditor. The Vlakfontein coal mine has an EMPr granted for its mining operations. A detailed performance assessment in terms of the mine's compliance to the EMPr requirements was undertaken with the client. The results were reported in a comprehensive performance assessment report. (Zitholele Consulting).

Second Party ISO 14001:2015 EMS gap audit for Makomo Resources coal mine in Hwange (Zimbabwe) 2017. Lead Auditor. The objective of the audit was to determine at what level Makomo Resources operated in conformance with the ISO 14001:2015 International EMS Standard's minimum requirements and to provide recommendations towards developing a system. A comprehensive audit report with recommendations was compiled for the client. (Makomo Resources via H@OHS International).

Environmental Officer role for the relocation of existing Eskom 66 kV Blouwater to Iscor overhead lines, Saldanha Bay (Western Cape Province) 2016. Project Leader. Prism EMS was appointed by Consolidated Power Projects as leading powerline contracting firm in Southern Africa for the relocation of portions of the Blouwater to Iscor steel plant powerlines where an Environmental Officer (EO) was appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of the on-site EO role and client liaisons. (Consolidated Power Projects).

Environmental Officer role for construction of the Hydra – Phiri and Hydra – Ndlovu overhead 122 kV powerlines, De Aar (Northern Cape Province) 2016. Project Leader. Prism EMS was appointed by Consolidated Power Projects as leading powerline contracting firm in Southern Africa for the construction of both the Hydra – Phiri and Hydra – Ndlovu 122 kV powerlines which connect solar farms to the national grid. Managed and assisted consultancy's Environmental Officer (EO) to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Also responsible for client liaisons. (Consolidated Power Projects).

Environmental Management System Audit of Eskom Corporate Sustainability Division, Megawatt Park, South Africa 2015. Environmental Auditor. Was appointed as specialist Environmental management systems auditor to conduct audits on Eskom Corporate's SHES department in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Was responsible for auditing the organisation's processes and system procedures. The audit was an ISO 14001 EMS Re-certification audit in order to determine the organisation's continued status as EMS certified. (SABS).

Eskom's Ingula Pumped-Storage Scheme: Authorisations, CEMP and Lender Requirements' quarterly audits, Ladysmith (KwaZulu-Natal Province) 2014 - 2017. Environmental Auditor. The Ingula Pumped-Storage Scheme was being constructed between Van Reenen and Ladysmith, KZN. The scheme was granted different Environmental Authorisations. These, together with the requirements of the Construction Environmental Management Plan form standards to which the scheme is to comply with. Furthermore, the scheme was also comprehensively audited against the Lender Requirements namely that of the IFC Standards and the OECD requirements. Quarterly audits of these requirements are conducted and assessment of the level of compliance is provided in audit reports submitted to the client. (Eskom via EIMS).

Environmental Control Officer for the Kronos sub-station extension project, Prieska (Northern Cape Province) 2015 - 2017. Project Leader. Eskom's Kronos sub-station under construction is to be linked to new transmission feeder lines. EkoInfo appointed Prism EMS as permanent on-site Environmental Control Officer (ECO) for the duration of the project. This individual and his role are managed for the duration of the project. Time is spent on site to provide assistance with environmental issues and provide expertise to environmental challenges. (Eskom).

Basic Assessment process & Report (BAR) for the proposed Duplication of a Raw Water Pipeline between the Misverstand Dam and existing Misverstand Pump Station, near Moorreesburg. (Western Cape Province) 2014. Project Leader & EAP. The aim of the project is to design a reconfiguration of the outlet pipelines from the Misverstand Dam in order to ensure adequate supply of water for domestic use in the West Coast District Municipality (Piketberg, Vredenburg, Saldanha, Langebaan, Velddrif), and also for irrigation downstream of the dam. The project entails the duplication of an existing raw water pipeline between the Misverstand Dam and an existing pumpstation situated to the north of the dam. (DWS).

Environmental Officer mentoring to new EO for the Construction of the Mokolo-Crocodile Water Augmentation Project, Lephalale, (Limpopo Province) 2014. Environmental Mentor. The client requested the services of a senior and adequately experienced mentor for their newly appointed EO within the organisation. The mentorship role was developed and managed by Prism EMS to ultimately culminate in the new EO being established as a trained individual given the project and future project's requirements. The

mentorship was for a period of three months. (Aveng-Grinaker-LTA).

Douglas Dam sediments Waste Classification, Ermelo (Mpumalanga province) 2016. *Environmental Specialist.* Was appointed by an engineering firm to undertake a full waste classification of sediments personally sampled from various locations on in the Douglas Dam, north of Ermelo. The study formed part of a Waste License Application for the associated sewage treatment works on the dam's shores. (Engineerex).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Centurion Square Green Building, Centurion (Gauteng Province) 2014. *Environmental Scientist.* The client, Tri-Star Construction, is constructing an office building which is to achieve "green star" rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (Tri-Star Development Services).

Northam Platinum Mine Performance Assessments, Northam (Limpopo Province) 2014 - current. *Environmental Auditor.* The Northam Platinum Mine has been operating for numerous years. As part of the mine's functioning, a number of environmental standards, licenses, permits and other requirements need to be complied with and include the Environmental Authorisations, the Environmental Management programs and Waste License. A detailed performance assessment in terms of the mine's compliance to such requirements was undertaken with another senior employee of the firm. The results were reported in a comprehensive performance assessment report. (Northam Platinum Mine).

Environmental Officer role for the construction of the Sere Windfarm, Koekenaap, Vredendal (Western Cape Province) 2014. *Project Leader.* Prism EMS has been appointed by BetaRisk for Siemens as the Contractor's Environmental Officer (EO) for the construction phase of this project. The EO is appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of the on-site EO role. (BetaRisk).

Environmental Management System Audit of Rand Gold's Gounkoto open cast mining and associate operations, Mali, West Africa 2014. *Environmental Auditor.* Co-audited the mine's operations and system in terms of its compliance to the ISO 14001 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was a ISO 14001 surveillance audit. (NQA-UK).

Environmental Management System Audit of Rand Gold's Loulo underground mining and associate operations, Mali, West Africa 2014. *Environmental Auditor.* Co-audited the mine's operations and system in terms of its compliance to the ISO 14001 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was a re-certification audit. (NQA-UK).

Eskom's Kusile Power Station: Authorisations, CEMP and Lender Requirements' bi-annual audits, Witbank (Mpumalanga Province) 2014 - 2016. *Environmental Auditor.* Eskom's Kusile Power Station construction project is the largest construction project in the southern hemisphere. The project was granted different Environmental Authorisations. These, together with the requirements of the Construction Environmental Management Plan form standards to which the scheme is to comply with. Furthermore, the scheme was also comprehensively audited against the Lender Requirements namely that of the IFC Standards and the OECD requirements. Bi-annual audits of these requirements are conducted and assessment of the level of compliance is provided in audit reports submitted to the client. (Eskom via Envirolution).

External Environmental Control Officer for the Centurion Square Office Park in Centurion (Gauteng Province) 2014 - 2016. *Environmental Auditor.* Prism EMS was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for undertaking external ECO audits and compilation of audit reports to be provided to the client. (Tri-Star Development Services).

Ferrero Environmental Compliance Determinations, Johannesburg (Gauteng Province) 2014 - 2016. *Environmental Auditor.* Was appointed to conduct quarterly environmental compliance audits to determine the client's compliance to environmental performance standards and overall legislative requirements. (Imsofer South Africa).

Atmospheric Emissions License application for the Maxam explosives facility in Johannesburg (Gauteng Province) 2014. *Project Leader.* Prism EMS was requested to undertake a comprehensive Atmospheric Emission License application with the relevant Air Quality Authority for Maxam-Dante's Johannesburg explosives manufacturing facility. The intricacies of both the facility's challenges and applicable legislation needed to be carefully managed towards successful Authorisation and subsequent compliance.

Aquatic Assessment of the Douglas Dam, Ermelo (Mpumalanga province) 2016. *Project Leader and Environmental Specialist.* Was appointed by an engineering firm to undertake a full aquatic assessment study of the Douglas Dam, north of Ermelo. The study forms part of an EIA for the upgrade of existing sewage treatment works adjacent to the same dam. The report had to be approved by the Department of Water & Sanitation. (Engineerex).

Environmental Management System Audit of MA Automotive, South Africa 2014. *Environmental Lead Auditor.* Was appointed as lead auditor to conduct audits on the organisation's Rosslyn and East London manufacturing facilities in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Interwaste, South Africa 2014. *Environmental Lead Auditor.* Was appointed as lead auditor to conduct audits on the organisation's Durban and Germiston waste management depots and facilities in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Eskom PTM, South Africa 2014. *Environmental Auditor.* Was appointed as auditor to conduct audits on Eskom's Mathimba and Lethabo Power Stations' PTM departments in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Air Products, (Gauteng) 2014. *Environmental Lead Auditor.* Was appointed as lead auditor to conduct audits on the organisation's Brakpan and Kempton Park facilities in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Ricoh South Africa, (Gauteng province) 2014. *Environmental Lead Auditor.* Was appointed as lead auditor to conduct audits on the organisation's facilities in Gauteng and Vereeniging in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance and Certification Audits. (SABS).

Environmental Management System Audit of Afrisam (Slagmont), Vanderbijlpark, (Gauteng Province) 2014. *Environmental Auditor.* Formed part of the independent and external auditing team who conducted an audit of the Afrisam cement producing facility in Vanderbijlpark, Brakpan and Roodepoort in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was an ISO 14001 Surveillance audit. (SABS).

Environmental Management System Audit of Coca-Cola production facility, Chimoio, Mozambique 2014. *Environmental Auditor.* Formed part of the independent and external auditing team who conducted audits of the energy distribution's activities and services in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was a comprehensive ISO 14001 Stage 2 audit. (SABS).

Health and Safety Management System Audit of Eskom's Matimba Power Station in Lephalale, Limpopo province 2014. *Auditor.* Formed part of the independent and external auditing team who conducted audits of the energy generator's activities and services in terms of its compliance to the OHSAS 18001 Health & Safety Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was an OHSAS 18001 Stage 2 audit. (SABS).

Specialist observer during an external Eskom Health & Safety Management System Audit of the Kendal Power Station, Mpumalanga province 2014. *Specialist observer.* Formed part of the independent and external auditing team as observer for conducting an audit of the energy generator's activities and services in terms of its compliance to the OHSAS 18001 Health & Safety Management System standard. Responsible for observing the audit team during the auditing of the organisation's processes and system procedures. The audit was a Stage 2 audit. (SABS).

Environmental Management System Audit of Eskom Primary Energy Division's Middelburg and Machadodorp facilities, Mpumalanga province 2014. *Environmental Lead Auditor.* Was tasked as lead auditor to conduct audits of the energy division's activities and services in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Stage 2 audits. (SABS).

Environmental Management System Audit of ZF Sachs heavy-duty clutch and gearbox facility in Alrode, (Gauteng province) 2014. *Environmental Auditor.* Formed part of the independent and external auditing team who conducted audits of the automotive manufacturing organisation's activities and services in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audit was an ISO 14001 Surveillance audit. (SABS).

Environmental Management System Audit of Robor, (Gauteng province) 2014. *Environmental Auditor.* Was appointed as auditor to conduct audits on the organisation's Germiston manufacturing facilities in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of PPC Dwaalboom, (Limpopo province) 2014. *Environmental Auditor.* Was appointed as auditor to conduct an audit on PPC's Dwaalboom cement producing facility in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Kansai Plascon – Colourants Division (Gauteng province) 2014. *Environmental Lead Auditor.* Was appointed as lead auditor to conduct an audit on the organisation's Clayville manufacturing facilities in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Management System Audit of Eskom Distribution's Gauteng and KwaZulu-Natal Units, South Africa 2014. *Environmental Auditor.* Formed part of the independent and external auditing team who conducted audits of the energy distribution's activities and services in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Stage 2 audits. (SABS).

Environmental Management System Audit of Nashua Communication, South Africa 2014. *Environmental Lead Auditor.* Formed part of the independent and external auditing team who conducted audits of the client's Port Elizabeth and Midrand activities and services in terms of its compliance to the ISO 14001:2004 Environmental Management System standard. Responsible for auditing the organisation's processes and system procedures. The audits were ISO 14001 Surveillance audits. (SABS).

Environmental Monitor for the Sipofaneni bridge and roads construction project, Sipofaneni (Swaziland) 2012 – 2013. *Project Leader.* The Swaziland Roads Authority appointed an Engineering firm and Contractor to construct approved bridges and roads in the central region of the country. The Engineer appointed and Environmental Monitor to oversee compliance of the Contractor's performance in terms of the project Construction Management plan. This individual acting as EM and his role are managed for the duration of the project. Assistance with environmental issues is provided. (Swaziland Roads Authority).

Environmental Management Program Audit & Report of the Batlhako Mine near Pilanesberg, (North-west Province) 2013. *Environmental Auditor.* The assignment entailed conducting an external audit for the Batlhako Mine on their conformance with their approved EMP. Responsible for auditing the EMP conformance and reporting the findings in and audit report submitted to the client and applicable Authority, the Department of Minerals. (Batlhako Mine).

Environmental Management Plan for the construction phase of the Umfolozi-Mbewu 765 kV overhead transmission line (Kwa-Zulu Natal, South Africa) 2013. *Environmental Scientist.* The EMP focusses on the transmission line alignment in detail and includes specialist input in terms of ecological and heritage aspects. Certain pylon relocations were also suggested in the EMP. Responsible for overseeing, managing, assessing and compiling the EMP for the construction phase of the transmission line between Empangeni and Ulundi. (Eskom).

Environmental Officer for the Kusile 400 kV tie-ins and tie-outs of the transmission line project, Bronkhorspruit (Mpumalanga Province) 2013. *Project Leader.* Eskom's Kusile power station under construction is to be linked to other transmission feeder lines and new connecting lines are required to the power station. Consolidated Power Projects (CONCO) were appointed as main contractor for the tie-in and out work as well as installation of droppers during this time. CONCO appointed Aurecon as permanent on-site Environmental Officer (EO) for the short duration of the project. This individual and his role are managed for the duration of the project. Time is spent on site to provide assistance with environmental issues and provide expertise to environmental challenges. (Consolidated Power Projects (Pty) Ltd.).

AngloAmerican Isibonelo Colliery Environmental Gap Analysis, Trichardt (Mpumalanga Province) 2013. *Environmental Auditor.* Formed part of audit team who conducted a 2nd Party gap audit on Anglo American's colliery near Trichardt. The EMS was comprehensively audited in terms of conformance to the ISO 14001:2004 international standard and its own EMS requirements. Other compliance obligations were also determined and gaps were identified. (AngloAmerican).

Waste License Audits of three EnviroServ Waste Management recycling facilities, Pretoria & Johannesburg (Gauteng) 2013. *Environmental Auditor.* Conducted comprehensive audits of three EnviroServ facilities in terms of their compliance to the facilities' waste licenses authorised by the Department of Environmental Affairs. Three detailed reports were provided to the Client for required submission to the Authority as per the waste licenses. (EnviroServ Waste Management Ltd.).

Environmental Management System Audit of Rand Gold's open cast mining operation, Ivory Coast, West Africa 2012. *Environmental Auditor.* Co-audited the mine's operations and system in terms of its compliance to the ISO 14001 Environmental Management System standard. Responsible for auditing the organisation's processes during the week audit. The audit was a certification audit. (NQA-UK).

External Environmental Control Officer for construction of the Maxwell Office Park and Landmark Office Building in Midrand (Gauteng Province) 2013. *Project Leader.* Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (Atterbury).

Watercourse Management Plan for the construction and operation of the Landmark Office Building in Midrand (Gauteng Province) 2013. *Project Leader.* In order to comply with the green building requirements for developments within 100m of a watercourse, a Watercourse Management Plan was developed to be complied with during construction and operation of this green building. Responsible for co-development of this plan and review. (Atterbury).

Environmental Management System Audit of the Nuclear Energy Corporation of South Africa's nuclear reactor facility, Pelindaba (Gauteng Province) 2012. *Environmental Auditor.* Was tasked to conduct a 2-day external audit of NECSA's SAFARI -1 Reactor in terms of its compliance to the ISO 14001 Environmental Management System standard. Responsible for auditing the organisation's processes during the audit. (SABS).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Atrium on 5th Office Building, Johannesburg (Gauteng Province) 2012. *Environmental Scientist.* The client, Liberty, developed an office building which is to achieve "green star" rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was

developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (Liberty).

External Environmental Control Officer for the Atrium on 5th Office green building facility in Johannesburg (Gauteng Province) 2013. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (Liberty).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Lynnwood Bridge Office Building, Pretoria (Gauteng Province) 2012. Environmental Scientist. The client, Atterbury, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (Atterbury).

External Environmental Control Officer for the Lynnwood Bridge Office green building facility in Pretoria (Gauteng Province) 2012 - 2013. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (Atterbury).

Environmental Management System Audit of Xstrata Ferrochrome operations, Rustenburg, (North-west Province) 2012. Environmental Auditor. Xstrata’s Wonderkop ferrochrome operations and facility operates with a mature environmental management system. The assignment entailed representing the SABS as an external auditor for a two-day surveillance audit of the facility’s compliance to the ISO 14001 EMS standard. Conducted the process audit of the company. (SABS).

Environmental Management Plan conforming to environmental sustainability development for the Construction of USAID’s new office facility, Pretoria (Gauteng Province) 2013. Environmental Scientist. The client, GD Irons, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed American governmental facility which is to conform to the green building rating standards was developed. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (GD Irons).

External Environmental Control Officer for the USAID’s green building facility in Pretoria (Gauteng Province) 2013. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (GD Irons).

External Environmental Control Officer for the MTC Grand Central green building facility in Midrand, Johannesburg (Gauteng Province) 2012. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (GrowthPoint Properties).

External Environmental Control Officer for the upgrade of the Lakeside green building facility in Centurion, Pretoria (Gauteng Province) 2012. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (GrowthPoint Properties).

Environmental Management System Audit of Exxaro Base Metals, Springs (Gauteng Province) 2012. Environmental Auditor. The assignment was to conduct a 2-day external audit of the organisation’s compliance to the ISO 14001 Environmental Management System standard. Responsible for auditing the organisation’s processes during the audit. (SABS).

External Environmental Control Officer for the new 8 Mellville Road green building facility in Illovo, Johannesburg (Gauteng Province) 2012. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of

the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (Intaprop).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the MTC Grand Central facility, Midrand (Gauteng Province) 2012. Environmental Scientist. The client, GrowthPoint Properties, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (GrowthPoint Properties).

Environmental Management System Audit of Rand Water facilities in Alberton and the west rand of Johannesburg (Gauteng Province) 2012. Environmental Auditor. Rand Water’s different facilities and operations are certified in terms of the international ISO 14001 Environmental Management System (EMS) standard. The project entailed conducting a 3-day external and independent audit for the organisation’s EMS. Results of the audit were provided to the client. (SABS).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Lakeside Office facility, Centurion (Gauteng Province) 2012. Environmental Scientist. The client, GrowthPoint Properties, upgraded an existing office building to ultimately achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (GrowthPoint Properties).

Environmental Management System Audit of Magalies Water’s water treatment works in Cullinan, (Gauteng Province) 2012. Environmental Auditor. The assignment entailed conducting an external audit for the independent ISO 14001 EMS annual audit of the Magalies Water’s water treatment works in Cullinan. Responsible for auditing the environmental management system and reporting the findings in and audit report submitted to the client. (SABS).

Environmental Management Plan conforming to environmental sustainability development for the 8 Mellvill Road green building facility, Johannesburg (Gauteng Province) 2012. Environmental Scientist. The client, Intaprop, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the new south New South Wales (Australia) Environmental Management System requirements, 2009. (Intaprop).

External Review of the Menlyn Corner green building facility’s Environmental Management Plan, Lynnwood, Pretoria (Gauteng Province) 2012. Environmental Scientist. Aurecon was tasked to undertake an independent review of an EMP developed for the Menlyn Corner green building facility. Responsible for conducting a review on the EMP in terms of its applicability to the development as well as conformity to the environmental “green star” rating requirements of the Green Building Council of South Africa. Cognisance of the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009 were also considered as part of the review. The review was presented in the form of a review report to the client. (GrowthPoint Properties).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Grundfos Head Office facility, Bedfordview (Gauteng Province) 2012. Environmental Scientist. The client, GrowthPoint Properties, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. The EMP also needs to conform to the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009. (GrowthPoint Properties).

External Review of the Athol Towers green building facility’s Environmental Management Plan, Sandton, Johannesburg (Gauteng Province) 2012. Environmental Scientist. Aurecon was tasked to undertake an independent review of an EMP developed for the Athol Towers green building facility. Responsible for conducting a review on the EMP in terms of its applicability to the development as well as conformity to the environmental “green star” rating requirements of the Green Building Council of South Africa. Cognisance of the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009 were also considered as part of the review. The review was presented in the form of a review report to the client. (ALW Estates (Pty) Ltd.).

External Review of the Walker Creek green building facility's Environmental Management Plan, Pretoria (Gauteng Province) 2012. Environmental Scientist. Aurecon was tasked to undertake an independent review of an EMP developed for the Walker Creek green building facility. Responsible for conducting a review on the EMP in terms of its applicability to the development as well as conformity to the environmental "green star" rating requirements of the Green Building Council of South Africa. Cognisance of the standards set by the New South Wales (Australia) Environmental Management System requirements, 2009 were also considered as part of the review. The review was presented in the form of a review report to the client. (Towndev).

External Environmental Control Officer for the new GCIS government facility in Hatfield, Pretoria (Gauteng Province) 2012. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (GrowthPoint Properties).

External Environmental Control Officer for the Hyundai Head Office green building, Bedfordview, Johannesburg (Gauteng Province) 2012. Project Leader. Aurecon was appointed to act as external Environmental Control Officer (ECO) to conduct construction monitoring of the new green building in terms of the developed EMP for the project. Responsible for management of ECO and review of audit reports to be provided to the client. (Giuricich Developments (Pty) Ltd.).

External environmental monitoring for the rehabilitation of the C5 pipeline (Gauteng, South Africa) 2010. Environmental Specialist. The project entailed auditing of construction activities during the rehabilitation of the C5 pipeline to ensure compliance with the environmental management plan. Responsible for assistance in conducting, compiling and submitting an environmental audit report to the Gauteng Department of Agricultural and Rural Development. (Rand Water).

Environmental Control Officer for the Omega sub-station project, Melkbosstrand, Cape Town (Western Cape Province) 2012. Project Leader. Aurecon was been appointed by Eskom as the Environmental Control Officer (ECO) for the construction phase of this project. The ECO is appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of project and ECO. (Eskom).

Environmental Officer for the Kusile 400 kV transmission line project, Bronkhorspruit (Mpumalanga Province) 2012. Project Leader. Eskom's Kusile power station under construction is to be linked to other transmission feeder lines and new connecting lines are required to the power station. Consolidated Power Projects (CONCO) were appointed as main contractor for the construction of the transmission line. CONCO appointed Aurecon as permanent on-site Environmental Officer (EO) for the duration of the project. This individual and his role are managed for the duration of the project. Time is spent on site to provide assistance with environmental issues and provide expertise to environmental challenges. (Consolidated Power Projects (Pty) Ltd.).

Environmental Control Officer for the N10, N7 & N8, B17 & B18 Rand Water pipeline projects, Johannesburg (Gauteng Province) 2012. Project Leader. Rand Water is in the process of installing 3 x potable water pipelines in different region of Johannesburg. Aurecon was appointed by Rand Water to serve as Environmental Control Officer (ECO) for the construction phase of these projects. The ECO is appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of project and ECO. Furthermore, ECO audit reports are reviewed. (Rand Water).

Environmental Control Officer for the Eskom Palm Ridge 88 kV transmission line project, Johannesburg (Gauteng Province) 2012. Project Leader. Eskom is in the process of constructing an 88kV double circuit sub-transmission electrical power line in Palm Ridge, Ekurhuleni Metropolitan Municipality. The power line is intended to serve as a link between the existing Palm Ridge substation and Snowdon 88kV Double Circuit line in Palm Ridge in the outskirts of Johannesburg. Aurecon was been appointed by Eskom as the Environmental Control Officer (ECO) for the construction phase of this project. The ECO is appointed to monitor and audit the contractor's compliance in terms of the requirements of the Environmental Management Plan and Environmental Authorisation. Responsible for management of project and ECO. Furthermore, ECO audit reports are reviewed. (Eskom).

Environmental Officer for the Eros-Vuyani 400 kV transmission line project, Flagstaff (Eastern Cape Province) 2011 – 2012. Project Leader. Eskom plans to increase electricity supply along the eastern coast of South Africa and were authorised to construct a 400 kV transmission line between Harding, KwaZulu-Natal and East London, Eastern Cape. The main contractor appointed to construct the line is required to have a

permanent on-site Environmental Officer (EO) for the duration of the project. Aurecon was appointed to provide this service. This individual and his role are managed for the duration of the project. Substantial time is spent on site to provide assistance with environmental issues and provide expertise to environmental challenges. (Consolidated Power Projects (Pty) Ltd.).

Ingula Pumped-Storage Scheme: Integrated Water Use License audits, Ladysmith (KwaZulu-Natal Province) 2011 – 2012. Auditor. The Ingula Pumped-Storage Scheme was at the time being constructed between Van Reenen and Ladysmith, KZN. The scheme consists of two reservoirs which are connected via enclosed tunnel systems and pump turbine units with a potential generation of approximately 1332 MW. The scheme was granted an Integrated Water Use License (IWUL) in 2011. In order to be compliant with the IWUL, external audits of the project's compliance to the License need to be conducted by an external auditor. Annual audits of the IWUL are conducted and assessment of the level of compliance is provided in audit reports submitted to the client. (Eskom).

Environmental Control Officer (ECO) for construction of the Eskom Umtu 400kV transmission line in Kathu, (Northern Cape Province) 2012. Project Leader. Eskom had attained an environmental authorisation for the construction of the Umtu 400 kV transmission line. The authorisation requires that an independent ECO be appointed to oversee the environmental compliance and performance of the proponent, and its contractors during the construction of the project. The ECO is required to compile audit reports and submit these to the client. Was responsible for overseeing the tasks of the ECO and review all monitoring reports (Eskom Holdings Pty Ltd.).

Basic Assessment Report for the Upgrade of the Spillway Canal of Benoni Dams. Johannesburg (Gauteng Province) 2011 - 2012. Project Leader. The Ekurhuleni Metropolitan Municipality planned a spillway canal widening which required a Basic Assessment process and Report (BAR) to be conducted. Was responsible for final completion of the process. An environmental authorisation was granted by the Gauteng Department of Agriculture and Rural Development (GDARD) for the project and assessment presented. (Ekurhuleni Metropolitan Municipality).

Construction Monitoring and Reporting of a gas pipeline through suburbs of Johannesburg (Gauteng Province) 2010 - 2011. Project Leader. SASOL installed an 18 km long gas pipeline through Tembisa and other residential areas of Johannesburg. In order to comply with the project's environmental authorisation, an independent environmental control officer was required to conduct environmental compliance monitoring with respect to the approved EMP. The results of these audits were summarised in monitoring reports and submitted to the Client and the provincial authorities on a regular basis. (SASOL).

Site-specific Environmental Management Program for the Metolong Dam's planning and construction phases, Maseru (Lesotho) 2011. Environmental Scientist. The Metolong Dam water supply programme involves the construction of the Metolong Dam, a raw water treatment facility and a network of feeder pipelines and reservoirs. Aurecon was appointed for the preparation of an Environmental and Social Management Guideline (ESMG), strategic Environmental and Social Management Plan (ESMP) and component specific ESMPs for the programme. Responsible for the preparation of the environmental components of the ESGM, strategic ESMP and component-specific ESMPs. (Metolong Authority).).

Hydrocarbon leak investigation, Johannesburg (Gauteng Province) 2011. Team member. GrowthPoint Properties requested an investigation of the source and extent of possible hydrocarbon pollution at one of its prominent facilities in Rosebank, Johannesburg. Involved with initial site investigation and assessment. (GrowthPoint Properties).

South African National Biodiversity Institute: Wetlands Rehabilitation Project (Limpopo Province) 2010. Environmental Scientist. The project, 'Working for Wetlands' involved wetland rehabilitation in certain areas of Limpopo. Responsible for initial planning and set-up of wetland intervention work. (SANBI)

Construction Monitoring and Reporting of the installation of 11 kV underground cables within the Automotive Supplier Park in Rosslyn, Pretoria (Gauteng Province) 2010 - 2011. Environmental Auditor. The Automotive Supplier Park tasked Aurecon to monitor construction of the installation of the 11 kV cables as well as an associated sub-station also to be constructed. The inspections were conducted with respect to the developed EMP for the project. Results and findings of the inspections were summarised in monitoring reports and submitted to the Client and the provincial authorities on a monthly basis. (Supplier Park Development Company, (Pty) Ltd.).

Environmental Management System Audit for Hullelt-Tonga Sugar, Chiredzi (Zimbabwe) 2011. *Environmental Auditor.* The project entailed an external 5-day audit for the independent ISO 14001 EMS annual audit of the Hullelt-Tonga Sugar Cane Plantations and Sugar Milling Operations near Chiredzi, Zimbabwe. Responsible for auditing the environmental management system and reporting the findings in and audit report submitted to the client. (NOSA Certification Authority).

Environmental Management Plan conforming to environmental sustainability development for the Construction of the Hyundai Head Office facility, Bedfordview (Gauteng Province) 2011. *Environmental Scientist.* The client, GrowthPoint Properties, developed an office building which is to achieve “green star” rating as per the requirements of the green building standards of the Green Building Council of South Africa. A construction EMP for the proposed facility which is to conform to the green building rating standards was developed for the facility. (GrowthPoint Properties).

Environmental Management System Audit for Palabora Mining Company (Pty) Ltd., Phalaborwa (Limpopo Province, South Africa) 2011. *Environmental Auditor.* The project entailed an external 3-day audit for the independent ISO 14001 EMS annual audit of PMC Mine. Responsible for auditing the water aspects of the mine and its activities and reporting the findings in an audit report. (SABS).

Environmental Management Program for the proposed construction of a Hydro-Electric Scheme on the As River, near Bethlehem (Free State Province) 2011. *Environmental Scientist.* Was tasked to develop a site-specific Environmental Management Program (EMP) for a proposed hydro-electric scheme which is to operate on the As River between Bethlehem and Clarens, Free State Province. The EMP forms part of an Environmental Impact Assessment process and Report which is to be authorised prior to construction of the power facility. (NuPlanet).

Sishen Mine, Kathu, Environmental Management System Audit (Northern Cape) 2011. *Water Quality Specialist.* Formed part of external audit team during the independent ISO 14001 EMS annual audit of the Sishen Mine. Responsible for auditing the water aspects of the mine and its activities over 2 days and reporting the findings in and audit report submitted to the client. (SABS).

Construction Monitoring and Reporting of the SAS Faurecia facility within the Automotive Supplier Park in Rosslyn, Pretoria (Gauteng Province) 2010 - 2011. *Project Leader.* The Automotive Supplier Park tasked Aurecon to monitor construction of the facility introduced to the Park with respect to the approved EMP – results of which need to be summarised in monitoring reports and submitted to the Client and the provincial authorities on a monthly basis. (Supplier Park Development Company, (Pty) Ltd.).

Haggie Rand (Pty) Ltd, Environmental Management System Audit (Zimbabwe) 2011. *Auditor.* Formed part of external audit team during the independent ISO 14001 EMS annual audit of the Haggie Rand manufacturing facilities. Responsible for auditing the environmental management system and reporting the findings in and audit report submitted to the client. (SABS).

Construction Monitoring and Reporting of the Sunderland Ridge Waste Water Treatment Works upgrade, Pretoria (Gauteng Province) 2010 - 2012. *Project Leader.* The City of Tshwane Metropolitan Municipality undergoes an extensive upgrade of the existing water treatment works servicing Centurion and surrounding developed areas. The project’s environmental authorisation requires environmental compliance monitoring with respect to the approved EMP – results of which need to be summarised in monitoring reports and submitted to the Client and the provincial authorities on a monthly basis. (City of Tshwane Metropolitan Municipality).

Environmental Management Plan for vehicle parts manufacturing facility for MSSL Global RSA (Gauteng Province) 2010. *Environmental Scientist.* Compilation of a construction EMP and conducting an ecological assessment of proposed site for the manufacturing facility. Authorisation granted by provincial authority. Also conducting environmental audits of construction progress based on conditions of the record of decision and approved EMP. Report findings in monthly audit reports to be submitted to provincial authority (MSSL Global RSA).

Environmental Management Plan for the new incubation facility at Ford Motor Company of Southern Africa, Silverton (Gauteng Province) 2010. *Environmental Scientist.* Compilation of a construction EMP required prior to construction of the new facility. Advice provided and conducting legal requirement on management of asbestos waste generated as part of the demolition operations of the site. (Ford Motor Company).

New incubation facility at Ford Motor Company of Southern Africa (Gauteng Province) 2010. Project Leader. Auditing of construction progress and reporting on findings in a monthly audit report. Audit criteria based on EMP. Responsible for report findings in monthly audit reports to be submitted to provincial authority (Ford Motor Company).

Environmental Audits of the Rand Water R5 pipe line phase 1 between Vlakfontein, Benoni and Rietveldam (Gauteng Province) 2010. Project Leader. Overseeing, conducting and reporting of environmental audits of the pipe line construction based on criteria of Record of Decision and approved EMP. Responsible for reporting the findings in and audit report submitted to the client and the relevant provincial authority (Rand Water).

Environmental Assistance to the Olifants River Resources Development Project (Mpumalanga Province) 2010. Environmental Specialist. Responsible for determination of an adequate pipe line route, compilation of Environmental Specifications and site specific Environmental Management Plans which needed to be authorised by the Department of Environmental Affairs. (Trans Caledon Tunnel Authority).

Basic Assessment Report for the relocation of the Orlik Chemicals facility in Bedfordview to the facility in Chloorkop (Bedfordview, Gauteng) 2010. Environmental Scientist. Overseeing and conducting a basic assessment process that would result in delivering a Basic Assessment Report and receiving an authorisation. Responsible for assessing and completing a BAR for the proposed decommissioning of the one chemicals facility to be relocated to an existing operational facility. (Chemserve (Pty) Ltd).

Waste License Audits of Harvey Roofing Tiles manufacturing facility (Johannesburg, Gauteng) 2010 - 2012. Environmental Auditor. Conducted comprehensive audit of sludge pans where the audit criteria was based on the requirements of the authorised Waste Management License. Detailed reports were provided to the Client. (Harvey Roofing Tiles (Pty) Ltd.).

Basic Assessment Report for the Rand Water R5 pipeline phase 2 between Rietveld Dam and Mamelodi (Pretoria, Gauteng) 2009-2010. Environmental Specialist. Overseeing and conducting a basic assessment process that will result in delivering a Basic Assessment Report and authorisation. Responsible for the assessing and completing a BAR for the proposed upgrading and installation of potable water pipelines between Rietveld Dam and a reservoir in Mamelodi, Pretoria (Rand Water).

Environmental audit of decommission of boilers at the Rand Water Zwartkopjes Pump station (Gauteng Province) 2010. Environmental Auditor. Assisting with the environmental audit of the decommissioning of boilers at the Zwartkopjes facility. Reporting the findings in and audit report submitted to the client and the relevant provincial authority. (Rand Water).

Environmental Management Plan (EMP) and site monitoring for the Koedoespoort Laboratory upgrade project (Pretoria, South Africa) 2009 - Date. Environmental Specialist. Responsible for providing environmental assistance to the Gauteng Department of Public Works (DPW) by compiling and monitoring a construction EMP for the department's laboratory upgrades. (Gauteng Department of Public Works).

Environmental Management Plan for the construction phase of the Eros-Vuyani-Neptune 400kV overhead transmission line (Eastern Cape, South Africa) 2009 - 2010. Environmental Scientist. The EMP focus on the transmission line alignment in detail and includes specialist input in terms of ecological, heritage and visual aspects. Certain pylon relocations were also suggested in the EMP. Authorisation for the EMP was granted by the National Department of Environmental Affairs. Responsible for overseeing, managing, assessing and compiling the EMP for the construction phase of the transmission line between Harding and Mthata. (Eskom).

Environmental Management Plan (EMP) for a 132kV overhead power line between Liphobong and Kao Diamond Mines (Lesotho) 2009. Environmental Scientist. Electricity supply to two diamond mines in Lesotho. Responsible for on-site assessments culminating in the development and compilation of an EMP for a 132kV overhead power line linking two diamond mines in Lesotho. (Lesotho Electricity Commission).

Environmental performance audit of ArcelorMittal South Africa, Vanderbijlpark Works' galvanising line number five (Gauteng, South Africa) 2009. Environmental Auditor. The project conducted reported on the environmental performance and compliance of ArcelorMittal South Africa in terms of its Record of Decision (RoD) for the galvanising line number five. Responsible for an on-site and systems audit of the facility, which culminated in the compilation of an audit report describing the client's environmental compliance and performance in terms of its RoD. (ArcelorMittal South Africa).

Water use licence applications for two proposed open cycle gas turbine peaking power plants in KwaZulu-Natal and the Coega Industrial Development Zone (IDZ) (Port Elizabeth, South Africa) 2009 - 2011. *Environmental Specialist.* As Independent Power Producer (IPP), the client, GDF Suez, intends constructing an Open Cycle Gas Turbine power plant to generate electricity to feed the national grid. Responsible for determining which applications were required for the peaking power plants and completing and submitting these to the Department of Water and Environmental Affairs (DWEA). Continuous overall environmental assistance provided to the client (Merz & MacLellan on behalf of GDF SUEZ).

Environmental Impact Assessment (EIA) for the Siphofaneni Road and Bridge upgrade in Swaziland (Swaziland) 2009. *Environmental Scientist.* The project involved upgrading the road from a gravel surface to a tar surface, as well as new bridge structures. Responsible for assisting with the initial stages of an EIA for the road upgrade. (Delegation of the European Union to Swaziland).

Resource management plans for the Fika Patso and Metsimatsho Dams (Orange Free State, South Africa) 2009. *Environmental Specialist.* Responsible for compiling resource management plans for the Fika Patso and Metsimatsho Dams in the Orange Free State. (Department of Water and Environmental Affairs (DWEA)).

Basic Assessment Report (BAR) process for the Rand Water Zuikerbosch pump station upgrade works (Vereeniging, South Africa) 2009 - 2010. *Environmental Scientist.* Installation of a duplicate pipeline of 8 km on Rand Water's largest water purification facility. Responsible for the assessing and completing a BAR for the proposed upgrading and installation of water and sludge pipelines between Rand Water's Zuikerbosch water abstraction and treatment facility and the Panfontein sludge disposal facility. Responsible for reporting the findings in and audit report submitted to the client and the relevant provincial authority. (Rand Water).

Environmental Impact Assessment for the Oranje-Riet Canal Balancing Dam S1 near Jacobsdal (Orange Free State, South Africa) 2009-2010. *Environmental Specialist.* A balancing dam and reject canal constructed on an existing open water canal which requires an environmental impact assessment and authorisation. Responsible for overseeing, managing and conducting a scoping and EIA process for the balancing dam S1 on the Oranje-Riet Canal to attain environmental authorisation from the National Department of Environmental Affairs. (Department of Water Affairs).

Atmospheric scheduled processes permit applications for two proposed open cycle gas turbine peaking power plants in KwaZulu-Natal and the Coega Industrial Development Zone (IDZ) (Port Elizabeth, South Africa) 2009 - 2011. *Environmental Specialist.* As Independent Power Producer (IPP), the client, GDF Suez, intends constructing an Open Cycle Gas Turbine power plant to generate electricity to feed the national grid. Responsible for compiling and completing atmospheric pollution applications for emission release permits for the peaking power plants and submitting these to the Department of Water and Environmental Affairs (DWEA). (GDF SUEZ).

Firebreak policy and plan for the facilities, water storage and transfer schemes of the Department of Water Affairs and Forestry (DWAF) (Gauteng, Mpumalanga and North West, South Africa) 2008. *Environmental Scientist.* Responsible for developing and compiling a firebreak policy and plan for all DWAF-controlled facilities in the provinces of Gauteng, Mpumalanga and the North West. (Department of Water Affairs and Forestry (DWAF)).

Basic Assessment Report (BAR) process for the installation of underground 11kV electricity feeder cables for the Sunderland Ridge waste water treatment works (Gauteng, South Africa) 2008 - 2009. *Environmental Specialist.* In this project, a positive Record of Decision (RoD) was granted by the provincial authorities. Responsible for assessing and completing a basic assessment report for the proposed installation of 11kV electricity cables that formed part of the City of Tshwane's wastewater treatment works upgrade project in Sunderland Ridge, Centurion, Pretoria. (City of Tshwane).

Environmental Management Plan (EMP) for an open cycle gas turbine peaking power plant at the Avon site (KwaZulu Natal, South Africa) 2008 - 2009. *Environmental Specialist.* In this project, a construction EMP was compiled on behalf of the developer, GDF Suez, which is one of the leading energy providers in the world. The EMP was compiled as a guideline for the mitigation and management measures to be implemented to avoid, reduce and minimise potential environmental impacts arising from the development of a peaking power plant and ancillary structures. In the compilation of this EMP, cognisance of environmental best practice was taken and the principles of Integrated Environmental Management (IEM) were applied. (Merz & MacLellan on behalf of GDF SUEZ).

Environmental Management Plan (EMP) for an open cycle gas turbine peaking power plant at the Coega site (Port Elizabeth, South Africa) 2008 - 2009. *Environmental Specialist.* In this project, a similar construction EMP was compiled on behalf of the developer, GDF Suez, for the mitigation and management measures to be implemented to avoid, reduce and minimise potential environmental impacts arising from the development of a peaking power plant and ancillary structures. In the compilation of this EMP, cognisance of environmental best practice was taken and the principles of Integrated Environmental Management (IEM) were applied. (Merz & MacLellan on behalf of GDF SUEZ).

Environmental Management System (EMS) implementation at the Automotive Supplier Park (ASP) in Rosslyn (Pretoria, South Africa) 2008. *Environmental Specialist.* The Supplier Park Development Company (Pty) Ltd was established in 2002 to develop and manage the ASP. The project was one of the Gauteng Provincial Government's Blue IQ initiatives aimed at delivering strategic infrastructure in the South African automotive industry to stimulate sustainable economic growth and job creation in the province. All requirements of the ISO 14001:2004 international standards were used as a basis for this project. Responsible for compiling and planning an EMS for the client and assisting in the implementation thereof. Project was later placed on hold. (Supplier Park Development Company).

Environmental Management System Audit of the Pretoria Portland Cement (PPC) mine and manufacturing facility, Dwaalboom (Limpopo Province) 2009 & 2015. *Environmental Auditor.* Formed part of team to audit the company EMS based on the ISO 14001 requirements. Role in audit was to assist with auditing company's system and processes and activities i.e. system's and process audit. (SABS).

Environmental Management System (EMS) audit, reporting and recommendations on Pecanwood Golf Estate, Hartbeespoort Dam (North West, South Africa) 2007 - 2008. *Environmental Auditor.* The existing EMS used for Pecanwood Golf Estate required further revision and improvement. An audit was conducted to ascertain the status quo of the system and recommendations were provided in the audit report. Additional assistance was given as part of continual improvement of the system. (Pecanwood Golf Estate).

Basic Assessment Report (BAR) for the Vaal Marina access road as part of the Vaal River Eastern Sub-system Augmentation Project (VRESAP) (South Africa) 2007. *Environmental Specialist.* The VRESAP was an emergency water transfer scheme and the primary bulk consumers served by the project are Eskom and SASOL. Water is abstracted from the Vaal Dam and pumped into the Knoppiesfontein division structure over a distance of 115km. From the division structure, the water gravitates to the Bosjesspruit and Trichardsfontein Dams near Secunda. An upgraded access road was required to the Vaal Dam abstraction works. Responsible for the basic assessment process and the compilation of basic assessment reports required for construction of the proposed road. Authorisation for construction of the road was attained. (Trans Caledon Tunnel Authority).

Vaal River Eastern Sub-system Augmentation Project (VRESAP) (South Africa) 2006 - 2008. *Environmental Monitor.* The VRESAP was an emergency water transfer scheme and the primary bulk consumers served by the project are Eskom and SASOL. Water is abstracted from the Vaal Dam and pumped into the Knoppiesfontein division structure over a distance of 115km. From the division structure, the water gravitates to the Bosjesspruit and Trichardsfontein Dams near Secunda. Responsible for overseeing all environmental aspects of the project, which included conducting site inspections; preparing reports and records of inspections; preparing reports for authorities and the client as required; chairing and attending site, environmental and liaison meetings; and effectively communicating with the client, authorities, engineering teams and site staff. (Trans Caledon Tunnel Authority).

Environmental Management Plan (EMP) for the Gautrain Rapid Rail Link (Gauteng, South Africa) 2005 - 2006. *Environmental Specialist.* Responsible for reviewing the environmental Record of Decision (RoD) for the proposed Gautrain Rapid Rail Link project in the Gauteng Province of South Africa. Also responsible for draughting a construction EMP framework for the Bombela Consortium to use in its bid for the project and assisting with specialist environmental management aspects throughout the bidding process. Subsequent EMP development and refinement followed the announcement of Bombela Consortium as the preferred bidder, through revising two EMPs, the initial works EMP and the draft final EMP. (Bombela Consortium).

Noordwyk sewer pipeline (Gauteng, South Africa) 2005 - 2006. *Environmental Scientist.* The project included the underground installation of approximately 330m of a 200mm diameter sewer pipeline to connect with an existing collector sewer across Lever Road in Noordwyk, Midrand. This project formed part of Johannesburg Water's capital expenditure (CAPEX) projects. The Midrand sewer master plan, concluded in February 2001, recommended deviation of the sewer from Erand Gardens and Noordwyk to accommodate anticipated future developments within the drainage basin. Responsible for compiling the environmental exemption application. (Johannesburg Water).

Hofmeyer Road and Bridge (Gauteng, South Africa) 2005 - 2006. *Environmental Scientist.* The project involved the construction of a new bridge and road linking Hofmeyer Street on the west bank and Algeria Drive on the east bank. The proposed Hofmeyer Bridge crosses the Jukskei River in an east-west direction. The proposed bridge and road provide a linkage between the east and west banks' residents in Alexandra Township. This project formed part of the Alexandra Renewal Project, a joint initiative, which included the involvement of larger groups from national government, the private sector and community-based organisations, and was implemented over a seven-year period. The development was compatible with the environmental management framework, spatial planning and road master plan of the area. Responsible for compiling the environmental exemption application. (City of Johannesburg).

January 2000 – July 2005 **Pretoria Metal Pressings (a division of DENEL (Pty) Ltd., Environmental Management Specialist**

Responsibilities and activities included:

- Responsible for successful completion, implementation and continual improvement of an integrated and comprehensive Environmental Management System compliant with ISO 14001.
- Internal auditing of all areas of the company including foundry & mill, manufacturing plants, explosive areas, water treatment plants and nature reserve to manage and maintain environmental performance.
- Auditee during ISO 14001 and NOSA external compliance audits.
- Attendance and participation in company Safety, Health and Environmental (SHE) Committee meetings.
- Representing company at NOSA regional meetings and the National Institute for Explosives Technology (NIXT) conferences.
- Presentations of 1-Day Environmental Training Courses as well as awareness training for all employees including middle line management.
- Investigating and controlling environmental incidents.
- Updating of permits issued by the then Dept. of Environmental Affairs and Tourism as well as the Dept. of Water Affairs and Forestry.

July 1999 – December 2000 **Kentron (a division of DENEL (Pty) Ltd., Environmental Management Assistant**

Responsibilities and activities included:

- Identifying environmental aspects and possible environmental impacts in order to compile an environmental significance register for the implementation of an Environmental Management System compliant with ISO 14001.
- Investigating environmental incidents.

Education

2004 : M.Sc. in Environmental Management, Rand Afrikaans University, South Africa
2000 : B.Tech (4 years) in Environmental Management, Pretoria Technikon

Career enhancing courses

0 : South African Waste Laws and Waste Classification Course, EnvirSus, Johannesburg
0 : ISO 14001:2015 Transition Course
Wetland Assessment Tools course, Rhodes University, South Africa
0 : Water Quality Assessment techniques, principles and reporting, North-west University, North-West University Potchefstroom Campus
0 : Environmental Impact Assessment principles and legislation, North-west University, North-West University Potchefstroom Campus
0 : ISO 14001 EMS Auditor's Course and Exam
0 : First Aid Level 1 and 2 courses.

Professional affiliations

Founder Member of Environmental Assessment Practitioners Association of South Africa (EAPASA).
Registered ISO 14001 Environmental Management System Lead Auditor, Southern African Auditor & Training Certification Authority (SAATCA).
SAATCA Environmental & Energy Scheme Committee Member since 2011 - 2014.
In the process of being registered as a Professional Natural Scientist, South African Council for Natural Scientific Professions (SACNSP).
Member of the South African affiliate of the International Association for Impact Assessment (IAIAsa).

Languages

	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

Papers & Presentations

Nawn, R (September 2019). "Integrated ISO 14001:2015 conforming Environmental Management Systems – or so we think. A critical synopsis of the reality – four years on". Presentation at IAIAsa Conference, Bela-Bela, Limpopo Province, South Africa.

(September 2017). Formed part of Conference Panel of Experts consisting of five individuals. Questions & Answers session of 2 ½ hours with approx. 200 delegates as the audience. South African Auditors and Training Certification Authority (SAATCA) Conference, CSIR, Pretoria, Gauteng Province, South Africa.

Nawn, R (April 2014). "Environmental Impact Assessment and Waste Management." Presentation delivered at the National Institute of Explosives Technology (NIXT) Conference, Pretoria Metal Pressings, DENEL, Gauteng Province, South Africa.

Nawn, R and Punt. M (August 2012). "Green Building in South Africa – The bigger picture." Paper presented at the IAIAsa Conference, Somerset-west, Western Cape Province, South Africa.

Braid, S and Nawn, R (August 2009). "Integrated water resource management and co-operative governance: A proposed strategy forward." Paper presented at IAIA Conference, Wilderness, Western Cape Province, South Africa.

Nawn, R (August 2006). "The water quality and associated problems of the Hennops River." Paper presented at the IAIAsa Conference, Kwa Maritane, Pilanesberg National Park, North-west Province, South Africa.

Nawn, R (2004). "The water quality and associated problems of the Hennops River and proposed rehabilitative measures". M.Sc. Dissertation. Rand Afrikaans University.

Nawn, R (2000). "Implementation of the ISO 14001 Environmental Management System at Pretoria Metal Pressings, a division of Denel (Pty) Ltd." Research paper.

Examples of ISO 14001 EMS Audits conducted for Certification Bodies since 2014:

- 2 days Eskom Matimba Power Station Audit
- 1 day Kendal Power Station Observer
- 2 days Eskom Middelburg & Bosloop Pump Station
- 3 days MA Automotive Rosslyn & East London
- 1 day Afrisam, Jhb
- 4 days Coca-Cola, Mozambique
- 1 day ZF Sacks Alrode, Jhb

- 2 days Interwaste, Germiston
- 2 days Afrisam Brakpan & Roodepoort
- 2 days Air Products Springs & Edenvale
- 3 days Ricoh Centurion, Vereeniging & Bedfordview
- 2 days Robor, Germiston
- 5 days Eskom Distribution Gauteng & KZN
- 3 days Ricoh Stage 2, Bedfordview
- 2 days PPC, Dwaalboom
- 2 days ICC Paints, Clayville
- 2 days Nashua Port Elizabeth & Midrand
- 4 days Interwaste, Beira Mozambique
- 1 day Eskom PTM Matimba Power Station, Ellisras
- 1 day Eskom PTM Lethabo Power Station, Vereeniging
- 4 day Ingula Pumped-Storage Scheme, Ladysmith
- 1 day Powertech, Midrand & Centurion
- 1 day Eskom Corporate, Sunninghill
- 2 day HL Matlala Centurion & Germiston
- 1 day Harvey Roofs, Springs
- 1 day Forkman, Silverton
- 1 day Gerotek, Pelindaba
- 3 days Middelburg Mines, Mpumalanga
- 4 days PMP Audit, Pretoria Lotus Gardens
- 2 days PMP Audit, Pretoria Lotus Gardens
- 1 day Closure of Findings Audit HL Matlala, Centurion
- 2 days Chemical Initiatives, Chloorkop, Johannesburg
- 2 days Rotek Industries, Germiston, Johannesburg
- 2 days Kaefer, Germiston, Johannesburg
- 2 days Majuba Power Station, Standerton, Johannesburg
- 4 days Kusile Power Station, Bronkhorstspuit
- 2 days Hendrina Power Station, Hendrina
- 2 days Medupi Power Station, Lephalale
- 2 days Komati Power Station, Ogies
- 2 days Lethabo Power Station, Vereeniging
- 2 days Waste Group, Johannesburg

ISO 14001 EMS Courses facilitated:

- 2 Day Introduction to Environmental Management Systems / Pre-requisite Courses
- 5 Day Implementation of the ISO 14001:2004 & ISO 14001:2015 versions of the Standard
- 2 Day Transition Courses on the existing ISO 14001:2004 vs ISO 14001:2015 versions of the Standard
- 5 Day ISO 14001 Lead Auditor Courses

Facilitated on behalf of organisations such as:

- SABS
- Risk ZA
- WTH Management & Training
- Prism Environmental Management Services

Curriculum Vitae: Mrs V Stippel

Name : **STIPPEL, VANESSA JEAN**
Date of Birth : 30 August 1984
Profession/Specialisation : Senior Environmental Consultant
Nationality : South African
Years' experience : 12

Key Experience

Vanessa Stippel has ten (10) years' working experience as a senior environmental consultant and is registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist (Pr.Sci.Nat. Reg No. 116221) in the field of Environmental Science. She is also registered as an Environmental Assessment Practitioner (EAP) in terms of Section 24H of the National Environmental Management Act, 1998 as amended. She also has two (2) additional years' experience in research and training.

Key environmental experience includes managing large Environmental Impact Assessments (EIAs) for Strategic Infrastructure Projects including the Berth 203 to 205 Expansion EIA and the NATREF Clean Fuels II EIA as well as Resource Management Plans (RMPs) for prioritised State Dams. She is well versed in environmental legislation and has been involved in the compilation of legal registers for organisations such as the Johannesburg City Parks and Zoo. Additional experience comprises of environmental auditing for projects such as Mooi Mgeni Transfer Scheme Phase 2 and the Orange River Water Resource Development Project –Phase 2c as well as the Technical Audit of the Sasol Chemical Industries and Sasol Mining Waste Storage Facilities in Sasolburg. As an Institutional Researcher, she was responsible for the management and compilation of a number of surveys. She also has experience in training facilitation.

Key Qualifications

MASTER OF SCIENCE IN ANIMAL, PLANT AND ENVIRONMENTAL SCIENCE (2013)

University of the Witwatersrand

BACHELOR OF SCIENCE (HONOURS) IN ECOLOGY, ENVIRONMENT AND CONSERVATION (2006)

University of the Witwatersrand

BACHELOR OF SCIENCE (2005)

University of the Witwatersrand

Employment Record

September 2016 – Current	Prism Environmental Senior Environmental Consultant and Unit Head
August 2011 – August 2016	Nemai Consulting Senior Environmental Consultant
March 2010 – July 2011	Boston City Campus and Business College Braamfontein SAQA Certifications Facilitator and Senior Training Advisor
June 2009 – February 2010	University of Witwatersrand: Strategic Planning Division Institutional Research Assistant

Project Experience

Environmental Authorisation Process (BA, EIA, WL, WULA):

- Steyn City Properties: WULA for Steyn City Phase 2: 2018
- Steyn City Properties: EIA and WULA for the Development of Riverside View Ext 84: 2018
- WSP Africa: WULA for the Development of the K56: 2018
- 4 Wheel Drive Properties (Pty) Ltd: Basic Assessment for A Car and Truck Dealership on Portion 168 of Farm Bultfontein 533 JQ: 2018
- Cream Magenta 273 (Pty) Ltd: EIA and WULA for an Equestrian Estate on Portion 73-76 of Farm Zwartkop 525 JQ: 2018
- Renico Construction: WULA for Weltevreden Park Ext 166: 2017
- Steyn City Properties: Amendment Riverside View Extension 72 to 75: 2017
- Steyn City Properties: Amendment of Steyn City WULA: 2017
- South Africa Happy Island Water World (Pty) Ltd: EIA and WULA for the Proposed Development of a Water Park in Rietfontein, Mogale City. 2016 – 2017.
- Gauteng Department of Human Settlements: Scoping and EIA and WULA for the proposed Syferfontein Mixed Use Housing Development, 2014 – 2016.
- Proplan: Scoping and EIA for the proposed Rustenburg Waste Treatment Facility, 2013 – 2016.
- Ekurhuleni Metropolitan Municipality: Scoping and EIA for the proposed Esselen Park Housing Development, 2015- 2016.
- Ekurhuleni Metropolitan Municipality: Basic Assessment for the proposed Esther Park Housing Development, 2015 – 2016.
- Ekurhuleni Metropolitan Municipality: Basic Assessment for the proposed Pomona Estates Housing Development, 2015 – 2016.
- RBIDZ SOC: Scoping and EIA and WULA for the proposed Richards Bay Industrial Development Zone Phase 1F. 2014- 2016.
- Mangaung Metropolitan Municipality: Scoping and EIA for the proposed Relocation of Bloemfontein Zoo, 2015 – 2016.
- Transnet Capital Projects: Scoping and EIA for Deepening, Lengthening and Widening of Berth 203 to 205, Pier 2, Container Terminal, Port of Durban, 2012 – 2015.
- Wesizwe Platinum Resources: Basic Assessment and WULA for the proposed Ledig Water Supply Pipeline, 2014 – 2015.
- City of Tshwane Metropolitan Municipality: Scoping and EIA for the proposed new Hennops Wastewater Treatment Works (WWTWs), 2012.
- City of Tshwane Metropolitan Municipality: Scoping and EIA for the Upgrade of the Sunderland Wastewater Treatment Works, 2012.
- Transnet Freight Rail: Basic Assessment and Waste License Application for the proposed remediation of 600km of asbestos contaminated land on Transnet Properties – Group A (Port Elizabeth to De Aar), 2011 - 2012.
- Mpumalanga Department of Sports and Recreation: Scoping and EIA for the proposed High Altitude Training Facility in Mpumalanga, 2011 - 2012.
- Sasol Chemical Industry: Waste License Applications for Sasol Chemical Industries sites in Sasolburg, 2012 - 2013.
- Sasol Chemical Industry: Scoping and EIA for the Proposed NATREF Clean Fuels II, 2012 – 2013.

Section 24G Applications:

- Ekurhuleni Metropolitan Municipality: Weltevreden Material Recycling Facility, 2013.

Mining/Prospecting Applications, EMPLans and Amendments:

- Transnet National Port Authority: Mining Right and EIA for Offshore Sandwinning for developments within the Port of Durban, 2016.

Audits (Legal, RoD Compliance / Internal):

- Letamo Game Farm: Environmental Compliance Audit for Letamo Game Farm. 2016.
- TCTA: Environmental Audit of the Orange River Water Resource Development Project –Phase 2c, 2013 – 2016.
- Johannesburg City Parks and Zoo: Compilation of the Legal Register and Legal Compliance Audit for Johannesburg City Parks and Zoo, 2015.
- University of Mpumalanga: Environmental Legal Compliance Audit for the University of Mpumalanga. 2015.
- Sasol: Technical Audit of the Sasol Chemical Industries and Sasol Mining Waste Storage Facilities; Sasolburg, 2014.
- TCTA: Environmental Audit of the Mooi Mgeni Transfer Scheme – Phase 2, 2012.
- MSW: Environmental Control Officer – Joe Slovo Low Level Bridge, Modimolle, 2012.

Other:

- Halewood International South Africa: Industry Waste Management Plan: 2018
- Kiepersol: Integrated Waste Management Plan for an Egg Packaging Facility and Depot: 2017
- Consolidated Power Projects (CONCO) Group: Vision Document: Effects of Climate Change: 2017
- Dr Kenneth Kaunda District: Dr Kenneth Kaunda District Environmental Management Framework, 2014 – 2015.
- uMzinyathi District: uMzinyathi District Environmental Management Framework, 2015.
- Transnet Capital Projects: Berth 203 to 205 Expansion Integrated Waste Management Approach, 2015.
- Department of Water and Sanitation: Climate Change Specialist Study for Foxwood Dam EIA, 2015.
- Transnet Capital Projects: Climate Change Adaptation Monitoring and Evaluation Plan for Berth 203 to 205 Expansion, 2015.
- Department of Water and Sanitation: Boskop Dam Resource Management Plan and Business Plan, 2013.
- Department of Water and Sanitation: Midmar Dam Resource Management Plan and Business Plan, 2013.
- Department of Water and Sanitation: Craigieburn Dam Resource Management Plan and Business Plan, 2013.
- Department of Water and Sanitation: Theewaterskloof Dam Resource Management Plan and Business Plan, 2013.
- Department of Water and Sanitation: Vanderkloof Dam Resource Management Plan and Business Plan, 2013.
- Department of Water and Sanitation: Vygeboom Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Pongolapoort Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Inanda Dam Resource Management Plan and Business Plan, 2015.
- Department of Water and Sanitation: Hazelmere Dam Resource Management Plan and Business Plan, 2015.
- Department of Water and Sanitation: Grootdraai Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Gariep Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Voelvlei Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Wriggleswade Dam Resource Management Plan and Business Plan, 2014.

- Department of Water and Sanitation: Vaal Dam Resource Management Plan and Business Plan, 2014.
- Department of Water and Sanitation: Mthatha Dam Resource Management Plan and Business Plan, 2015.
- Department of Water and Sanitation: Allemenskraal Dam Resource Management Plan and Business Plan, 2015.
- Department of Water and Sanitation: Greater Brandvlei Dam Resource Management Plan and Business Plan, 2015.
- Department of Environmental Affairs: Mapungubwe Culture Landscape Environmental Management Framework, 2014.
- Nkomati Anthracite Mine: Social Impact Assessment for the Nkomati Anthracite Mine, Mpumalanga, 2011.

Professional Affiliations

- Professional Member of Southern African Institute of Ecologists and Environmental Scientists: 2015 - 2016.
- SACNASP– Pr. Sci. Nat.(116221): 2016 (Current)
- Professional Member of the International Association for Impact Assessment: South Africa (IAIASa): 2018
- EAPASA - Registered EAP (2019/175)