

Appendix H. Details of EAP and expertise

Qualifications

| | | |
|-----|------|---|
| MSc | 2012 | Ecology, Environment and Conservation |
| BSc | 2009 | Ecology, Environment and Conservation |
| BSc | 2008 | Zoology and Ecology, Environment and Conservation |

Key Areas of Expertise

Key areas of Chiara's expertise are summarised below.

| | |
|----------------------------------|--|
| Water use licencing | Countrywide for a wide variety of mines, quarries and plants |
| Environmental impact assessments | Countrywide for a wide variety of operations |
| Auditing | Countrywide for mining and quarrying operations |
| Public participation processes | Countrywide for a wide variety of projects |

Summary of Capability

Chiara has been working in the Environmental Impact Assessment sector since 2012; Chiara is an Environmental Scientist with SLR and is involved with a wide variety of major projects throughout South Africa for major operators in the minerals and waste industry. Chiara has been involved in projects related to underground mining, gold mining, power lines, water management, waste management, waste-to-energy, electricity co-generation, tailings facilities, coke production, ferrosilicon production and char production. Chiara has also been involved with Contamination Assessments, Water Use Licence (WUL) and Environmental Management Programme (EMP) audits and performance assessments.

Chiara has compiled proposals and budgets for a wide variety of projects and has managed small and large scale projects.

Prior to joining Synergistics Environmental Services (now part of SLR) in 2012, Chiara obtained a Master's degree from the University of the Witwatersrand where she focused on the space use of four different species investigating how previous spatial restrictions affected subsequent space use in enlarged areas.

Recent Project Experience

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

| Project | Chiara's Role |
|---|--|
| Taung Gold, Taung gold plan to dewater and refurbish a disused shaft to mine gold and establish additional infrastructure including a new tailings storage facility. | Environmental Scientist, Project Manager |
| Wesizwe Platinum Limited, Bakubung Mine plan to amend their existing authorisation to incorporate changes to the Bakubung Mine including extension of the tailings storage facility, changes to the plant and capacities and inclusion of waste rock into their mining right. | Environmental Scientist, Project Manager |
| Erongo RED, establishment of a new powerline near Swakopmund, Namibia, Scoping report. | Environmental Scientist |
| Exxaro Coal, Super fines tailings, Public Participation Processes, Scoping report, specialist management | Environmental Scientist |
| Lafarge, Assessing Lafarge's compliance with their EMP commitments. | Environmental Scientist, Project Manager |
| Sishen Iron Ore Company, Relocation of residents of Dingleton and establishment of a new residential area in Kathu, Northern Cape. New Kathu cemetery basic assessment process. | Environmental Scientist, Project Manager |
| Kumba Iron Ore, Relocation of a section of the 275 kV Eskom power line for the expansion of the Sishen Mine. | Environmental Scientist |
| Exxaro FerroAlloys, Expansion of the ferrosilicon plant in an industrial area. | Environmental Scientist, Project Manager |
| Kumba Iron Ore, Prospecting on various farms near Kolomela Mine. | Environmental Scientist |
| Aquila Steel, Amendment of the Blackridge Environmental Management Programme. | Environmental Scientist, Project Manager |
| Exxaro Resources, Char Manufacturing facility, Environmental Authorisation Amendment. | Environmental Scientist |
| Kumba Iron Ore, Prospecting of Iron Ore In The Northern Cape near Kolomela Mine, Performance Assessments of the prospecting Environmental Management Programmes. | Environmental Scientist |
| Anglo Inyosi Thermal Coal, Anglo planned to establish a coal mine in the Kriel area to supply coal to Eskom, Alexander Concept Project. | Environmental Scientist |
| Exxaro Resources, Accommodation Construction Facility for the Market Coke and Go-generation Plant, Construction accommodation facility for the construction workers of the Market Coke and Co-generation plant. | Environmental Scientist |
| Total SA, Assessing groundwater and soil contamination at various sites around Gauteng that have Total fuel storage facilities. | Environmental Scientist |
| EnviroServ, Chloorkop Municipal Solid Waste to Energy Project. | Environmental Scientist |
| Exxaro Resources, Auditing of GN R704, Environmental Management Programme and Water Use Licence compliance . | Environmental Scientist |
| Exxaro Resources, Production on market coke and using coke oven flue, hot waste gas for electricity generation . | Environmental Scientist |

| Project | Chiara's Role |
|---|-------------------------|
| Exxaro Resources, The expansion of a facility that manufactures char. | Environmental Scientist |
| EnviroServ, Chloorkop Waste Management Licence. | Environmental Scientist |

Qualifications

| | | |
|------------|------|--------------------------|
| BSc | 1998 | Biological Sciences |
| BSc (Hons) | 1999 | Zoology |
| MSc | 2004 | Environmental Management |

Professional affiliations and registrations

Registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist (PrSciNat) in Environmental Science (Reg. No. 400183/05)

Registered with the Environmental Assessment Professionals of Namibia (EAPAN) as a Lead Practitioner (Membership No. 121)

Member of the International Association for Impact Assessments (IAIA), South African Affiliate

Summary of Key Areas of Expertise

Management and facilitation of permitting and licensing processes

Management of stakeholder engagement processes

Overall Project Management

Due Diligence, Reviews

Summary of Experience and Capability

Alex is the Operations Manager: Environmental Management, Planning and Approvals (EMPA) with SLR Africa and is responsible for co-ordinating SLR's environmental management team. Alex has 16 years' experience in the field of Environmental Management.

Alex has managed a wide range of permitting and licensing projects including environmental assessments, water use license applications and waste management license applications, mainly in the exploration, mining and industrial sectors. These included project management and co-ordination; specialist and engineering team management; co-ordination, facilitation and undertaking of stakeholder engagement processes including for contentious projects, and environmental assessment. She has experience in addressing both in-country legislation and Equator Principles and International Finance Corporation (IFC) requirements.

Alex has provided environmental specialist input on a number of pre-feasibility studies linked to the exploration/development/expansion of mining operations. She has also been involved in environmental due diligence processes and environmental reviews for financing institutions.

In her early career years, Alex held a position within Anglo Platinum's Waterval Smelter as Assistant to the Chief Environmental Officer. In 2002, she joined Metago Environmental Engineers (Pty) Ltd (Metago). Metago was acquired by SLR Consulting (UK) in March 2011.

Project Experience

Key aspects of Alex's project experience are summarised below.

| Project | Date | Alex's Role |
|--|-----------|-------------------|
| Chrome | | |
| EMPs (including an EIA) for prospecting on the farms Beestekraal 290 JQ, Boschpoort 284JQ, Nooitgedacht 289JQ and Noointgedacht 287JQ near Rustenburg in the North West Province: Bakgatla Ba Kgafela Tribal Authority | 2007 | Project Manager |
| EMPs (including EIA) for two prospecting projects on the town and town lands of Rustenburg 272JQ in Rustenburg Magisterial District, North West Province: Xstrata South Africa (Pty) Ltd | 2005 | Project Manager |
| EIA/EMP for a chrome mine and concentrator in the Rustenburg / Boshhoek region: SA Ferrochrome and Mining (Pty) Ltd | 2003-2004 | Project Assistant |
| Coal | | |
| EIA/EMP for a greenfields coal mine in northern Kwa-Zulu Natal: Commissiekraal Coal (Pty) Ltd | Current | Project Manager |
| Copper | | |
| EIA-EMP amendment for the Kinsenda operations in the DRC | 2014 | Project Reviewer |
| EIA for a greenfields copper oxide project (Omitiomire project) (Namibia): Craton Mining and Exploration (Pty) Ltd | 2013 | Project Reviewer |
| Ferrochrome | | |
| EIA/EMP amendment for the exclusion of smelter activities at Bokfontein Chrome Mine: Hernic Ferrochrome | 2013 | Project Manager |
| EIA/EMP amendment for a concentrator and smelter complex at Bokfontein Chrome Mine: Hernic Ferrochrome | 2012 | Project Manager |
| EIA for Project Lion, a new smelter complex near Steelpoort: Xstrata South Africa (Pty) Ltd | 2003-2004 | Project Assistant |
| EIA/EMP for Transvaal Ferrochrome Project (a ferrochrome smelter complex in the Rustenburg/Brits region): | 2002-2003 | Project Assistant |
| EIA/EMP amendment for a pelletizing plant at Xstrata Wonderkop: Xstrata South Africa (Pty) Ltd | 2002-2003 | Project Manager |
| Gold | | |
| EIA for a filtration plant at Navachab Gold Mine (Namibia): AngloGold Ashanti Namibia (Pty) Ltd | 2012 | Project Manager |
| Basic Assessment for Diesel storage facilities at its South Deep Mine Operations: God Fields (South Africa) (Pty) Ltd | 2011 | Project Reviewer |

| Project | Date | Alex's Role |
|---|---------------|---|
| Participation in an integrated environmental management review – technical workshop for new projects at Gold Fields: Gold Fields (South Africa) (Pty) Ltd | 2009 | Part of a peer review delegation for an ongoing EIA |
| Consolidating South Deep Min's various EMPR documents into one document and in turn bringing the mine's EMPR in line with the requirements of the Mineral and Petroleum Resources Development Act and supporting regulations : Placer Dome Westonaria Joint Venture – South Deep Mine | 2005-2007 | Project Manager |
| EIA and EMP amendment for a new tailings dam development: Placer Dome Westonaria Joint Venture – South Deep Mine | 2005-2007 | Project Manager |
| Iron | | |
| EIA and EMP for the Jenkins and Driehoekspan greenfields mining operations in the Northern Cape: Coza Iron Ore | 2016 | Project Reviewer |
| EIA/EMP for greenfield iron ore mine development near Lephalale (Ellisras) (Moonlight iron ore project) in the Limpopo Province: Turquoise Moon Trading (Pty) Ltd | 2012 | Project Manager |
| Amendment to existing prospecting EMP to cater for changes in prospecting operations: Nelesco 684 (Pty) Ltd | 2010 | Project Manager and Reviewer |
| Amendments to existing prospecting EMPs (Cascade 442IT and Delft 22HU) to cater for changes in prospecting operations: Mkhombi Mining (Pty) Ltd | 2010 | Project Manager and Reviewer |
| Management of the consultation process for a prospecting EMP on the farms Sterkfontein 419IT and Wolvernkop 427IT, near Piet Retief in Mpumalanga Province: Mkhombi Mining (Pty) Ltd | 2009 | Project Manager and Reviewer |
| EMP (including EIA) for prospecting on the farms Moabsveld 248IR and Rietkuil 249IR, near Delmas in Mpumalanga Province: Spirapix Mining (Pty) Ltd | 2009 | Project Manager |
| Manganese | | |
| EMP amendment and rectification processes for Tshipi é Ntle Manganese Mining operations in the Northern Cape | Current | Project Reviewer |
| EMP amendment process for UMK Manganese Mine in the Northern Cape | Current | Project Reviewer |
| EIA and EMP for a greenfields mining right application in the Northern Cape: Ntsimbintle Mining (Pty) Ltd | Current | Project Reviewer |
| EMP performance assessment and financial provision re-assessment for prospecting right in the Northern Cape: Ntsimbintle Mining (Pty) Ltd | 2008 and 2016 | Project Reviewer |
| Platinum | | |
| Various EMP performance assessments and financial provision re-assessments for prospecting rights held by Impala in the North West, Mpumalanga and Limpopo Province: Impala Platinum Limited (Impala) | Ongoing | Project Manager and Reviewer |

| Project | Date | Alex's Role |
|---|-------------|------------------------------|
| Various EMP performance assessments and financial provision re-assessments for prospecting rights held by Afplats in the North West Province: Afplats (Pty) Ltd | Ongoing | Project Manager and Reviewer |
| Various amendments to existing prospecting EMPs to cater for the changes in prospecting operations: Impala Platinum Limited (Impala) | Ongoing | Project Manager |
| Various EMP performance assessments and financial provision re-assessments for prospecting rights held by Inkosi and Imbasa in the North West Province | Ongoing | Project Manager and Reviewer |
| EIA and EMP amendment including WML for changes to surface infrastructure and operations at Bakubung Platinum Mine, North West Province | 2015 - 2016 | Project Reviewer |
| EIA and EMP amendment for changes to surface infrastructure and operations at Tharisa Mine, North West Province | 2012 - 2015 | Project Reviewer |
| EMP Compliance Audit for Leeuwkop Mine | 2014 | Project Reviewer |
| EIA/EMP amendment for changes to surface infrastructure at Marula Platinum Mine: Marula Platinum (Pty) Ltd | 2013 | Project Manager and Reviewer |
| EIA/EMP for the extension of underground mining activities at Everest Platinum Mine (Fairway project): Aquarius Platinum (South Africa) (Pty) Ltd | 2013 | Project Reviewer |
| EIA/EMP for the extension of mining activities at Everest Platinum Mine (Hoogland project): Aquarius Platinum (South Africa) (Pty) Ltd | 2013 | Project Manager |
| Supply and co-ordination of interim on-site environmental manager to assist with general management of environmental aspects at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2011 | Project Co-ordinator |
| Compilation of environmental documents (including a public consultation process) in support of a closure application for the Turffontein 263JQ and Kookfontein 265JQ prospecting right and Reinkoyalskraal 278JQ and Elandsheuwel prospecting right: Impala Platinum Limited (Impala) | 2010 | Project Reviewer |
| 2010 Annual Re-Assessments of Everest Platinum Mine's closure cost estimate: Aquarius Platinum (SA) (Pty) Ltd | 2010 | Project Reviewer & Auditing |
| EMP (including EIA) for prospecting on the farm Rooikraal 118JS in the Limpopo Province: Braggite Resource (Pty) Ltd | 2010 | Project Reviewer |
| 2009 Annual Re-Assessments of Everest Platinum Mine's closure cost estimate: Aquarius Platinum (SA) (Pty) Ltd | 2009 | Project Manager |
| EIA/EMP amendment for the north and south boxcuts at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2009 | Project Manager & closure |
| EIA/EMP amendment for the production expansion of Eland Platinum Mine: Xstrata South Africa (Pty) Ltd | 2009 | Project Reviewer |
| Assistance with the consultation with landowners to input into closure of a prospecting right: Impala Platinum Limited (Impala) | 2008-2009 | Project Manager |

| Project | Date | Alex's Role |
|---|-----------|----------------------------|
| Compilation of environmental posters linked to the seismic EMP for the use in environmental awareness training: Impala Platinum Limited (Impala) | 2008 | Project Manager |
| EMP performance assessment of Marula Platinum Mine's EMP report: Marula Platinum (Pty) Ltd | 2008 | Project Manager & Reviewer |
| EIA/EMP for a new platinum mine and concentrator Plant (Mphahlele Project) in the Limpopo Province: Tameng Mining and Exploration (Pty) Ltd | 2007-2008 | Project Manager |
| EIA/EMP amendment for additional infrastructure at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2006-2009 | Project Manager |
| EIA/EMP for seismic survey activities near Impala's Rustenburg operations: Impala Platinum Limited (Impala) | 2006-2008 | Project Manager |
| EIA/EMP amendment for a new shaft and associated facilities and Marula Platinum Mine. This project also included the consolidation and updating of the mine's EMP to cater for the changes in mining legislation: Marula Platinum (Pty) Ltd | 2006-2008 | Project Manager |
| EMP (including an EIA) for prospecting on the farms Turffontein 263JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala) | 2005 | Project Manager |
| EMP (including an EIA) for prospecting on the farm Reinkoyalskraal 278JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala) | 2005 | Project Manager |
| EMP (including and EIA) for prospecting on the farms Klipgatkop 115JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala) | 2005 | Project Manager |
| EMP (including and EIA) for prospecting on the farms, Doornspruit 84JQ and Roodekraalspruit 113JQ near Impala's Rustenburg Operations: Impala Platinum Limited (Impala) | 2005 | Project Manager |
| EIA/EMP for a mining right application (The Fingers Project) at Marikana Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2005 | Project Manager |
| Assisted in the facilitation of the public involvement process for the Shaft 20 EMP amendment: Impala Platinum Limited (Impala) | 2004 | Project Assistant |
| EMP amendment for the Maandagshoek Winze Project (re-establishment of an underground shaft): Modikwa Platinum Mine | 2003-2004 | Project Manager |
| EIA/EMP amendment for the Opencast Mining Project at the Rustenburg operations: Impala Platinum Limited (Impala) | 2002-2005 | Project Manager |
| EMP amendment for The Hills Project (establishment of additional infrastructure for mining purposes): Modikwa Platinum Mine | 2002-2003 | Project Manager |
| EIA and EMP for a greenfields mine – Everest South Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2002-2003 | Project Assistant |
| Drilling and bulk sampling EMPs for the Everest South Project: Aquarius Platinum (SA) (Pty) Ltd | 2002 | Platinum |

| Project | Date | Alex's Role |
|--|----------------|--------------------------|
| Revised bulk sampling EMP for the Everest South Project: Aquarius Platinum (SA) (Pty) Ltd | 2002 | Project Assistant |
| EMP amendments for re-positioning of infrastructure for Marikana Platinum Mine: Aquarius Platinum (SA) | 2001 | Project Manager |
| Residential | | |
| Provision of environmental management support to Kumba Iron Ore for the relocation of Dingleton town | 2016 | Project Manager |
| Basic Environmental process for the Pilanesburg Platinum Mine Housing Development, in the North West Province | 2015 | Project Reviewer |
| EIA for a village and cemetery for non-landowners to be relocated from the site of Marikana Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd | 2001-2002 | Project Assistant |
| Silica | | |
| EIA/EMP for mining right application at Rietvly Silica Mine: Xstrata South Africa (Pty) Ltd | 2005-2006 | Project Manager |
| Uranium | | |
| ESIA for a greenfields Uranium and Coal Mine in Botswana (Lethakane Project): A-Cap Resources Limited | Current | Project Manager |
| Alternative energy | | |
| EIA/EMP amendment for the use of alternative fuels at its Lichtenburg Cement Plant: Lafarge Industries SA (Pty) Ltd | 2012 | Project Manager |
| EIA for cogeneration power plants at Xstrata's operations in the North West and Mpumalanga Provinces: Power Tech IST/ Xstrata South Africa (Pty) Ltd | 2008 – on hold | Project Manager |
| Bioremediation | | |
| EIA for a waste management license for the bioremediation operation at TransHex Baken Diamond mine in the Northern Cape | 2013 - 2015 | Project Manager |
| Other: Expert Consultant, due diligence, reviews, risk assessment | | |
| Environmental management services in fulfilment of the environmental legal obligations for the Dingleton Resettlement Project, near Kathu in the Northern Cape | 2016 | Environmental specialist |
| Environmental input into various pre-feasibility studies linked to the exploration/development/expansion of mining operations. | Ongoing | Environmental specialist |
| Legal compliance review of Everest Platinum Mine (Mpumalanga) in support of re-commencing operations | 2015 | Environmental specialist |
| Update to Tharisa Mine's Competent Persons Report | 2015 | Environmental specialist |

| Project | Date | Alex's Role |
|--|-------------|--------------------------|
| Alfred Knight Lab Due Diligence | 2015 | Project Manager |
| Due diligence on compliance, water, waste and air related aspects as part of an investment investigation at Silicon Technology (Pty) Ltd | 2012 & 2013 | Environmental specialist |
| A number of due diligences of gold exploration projects in Tanzania: New African Mining Fund | 2013 | Environmental specialist |
| Input to a legal environmental register for African Barrick Gold's operations in Tanzania | 2012 | Environmental specialist |
| Peer Review of baseline specialist studies for Gold Fields Damang Gold Mine | 2012 | Environmental specialist |
| Afplats Shaft Risk Assessment Update for Inkosi - Imbasa | 2011 | Environmental specialist |
| Review of Barrick Tulawaka Tailings EIA | 2011 | Environmental specialist |
| Environmental input into the ESIA for the expansion of the Morupule Colliery in Botswana: Ecosurv Environmental Consultants | 2010 | Expert Consultant |
| Policy drafting | | |
| Assistance with drafting a policy, guideline document and procedure for stakeholder participation during explorations operations for the Implats Group: Impala Platinum Limited (Impala) | 2008 | Project Manager |
| Water | | |
| Assistance in compilation of water use license application (WULA) and integrated water and waste management plan (IWWMP) for a new platinum mine and concentrator plant (Mphahlele Project) in the Limpopo Province: Tameng Mining and Exploration (Pty) Ltd | 2013 | Project Manager |
| Co-ordination of integrated water and waste at Everest Platinum Mine: Aquarius Platinum (South Africa) (Pty) Ltd | 2012 | Project Reviewer |
| Water Supply Study for the Moonlight Iron Ore Project: Turquoise Moon Trading (Pty) Ltd | 2011 | Project Manager |
| ESIA for a greenfields wellfield development in Botswana (to supply the Letlhakane Project): A-Cap Resources Limited | 2011 | Project Manager |
| Re-registration of waste-related water uses at Everest Platinum Mine: Aquarius Platinum (South Africa) (Pty) Ltd | 2010 | Project Reviewer |
| Assistance with addressing water use license related issues: Marula Platinum (Pty) Ltd | 2010 | Project Reviewer |
| Water use license application (WULA) for the South Deep Doornpoort tailings dam | 2010 | Project Manager |
| Compilation of water use license application (WULA) and integrated water and waste management plan (IWWMP) for South Deep Mine: | 2006 | Project Manager |

| Project | Date | Alex's Role |
|---|-----------|------------------|
| Basic assessment for a water supply project to the Pilanesberg Platinum Mine Operations: Pilanesberg Platinum Mines (Pty) Ltd | Cancelled | Project Reviewer |

Publications

Onderstepoort Journal of Veterinary Science, 2005. "Aspects of the ecology of the Asian tapeworm *Bothriocephalus acheilognathi* Yamaguti, 1934 in yellow fish in the Vaal dam, South Africa"