Facility Audited: Golden Star (Wassa) Limited, Level 2, No.1 Milne Close, Airport Residential

Area, Ghana

Audit Date: April 26, 2016 - May 05, 2016

Lead Auditor Credentials

Lead Auditor: Clinton Phaal, IEMA Registered Environmental Auditor, Ramboll Environ
 Africa Physical Phase and Phase Courts Africa

Africa Pty Ltd, Johannesburg, Gauteng, South Africa

Certifying Organization:

Institute of Environmental Management and Assessment (IEMA)

Saracen House, Crusader Road City Office Park, Tritton Park Lincoln, LN6 7AS

United Kingdom Phone: +44 1522 540069 Fax: +44 1522 540090 Email: info@iema.net

Lead Auditor Experience:

Clinton Phaal - Ramboll Environ Africa Pty Ltd

Year	Type of Facility/Type of Audit Led	Country & State/Province
2016	Lead Auditor: On behalf of Flint Group, completed environmental and health and safety compliance audits of eight printing ink facilities located throughout South Africa	Western Cape, Eastern Cape, Kwazulu Natal, Gauteng, South Africa
2016	Auditor: Part of a multidisciplinary team assessing environmental compliance liabilities relating to a large portfolio (approximately 800 sites) of fuel retail sites and depots located throughout South Africa and Botswana	South Africa, Botswana
2015- 2016	Project Manager and Lead Auditor: Environmental Due Diligence review of SunChemical Corporation printing ink facility located in Maitland, Cape Town, to identify any significant environmental liabilities, specifically relating to potential impacts to soil and groundwater.	Cape Town, South Africa
2015	Project Manager and Reviewer: Support to Bauba Platinum Limited for the development of three Greenfield underground platinum mines within the Limpopo Province of South Africa including a scoping process as part of the EIA Phase for the project	Limpopo Province, South Africa

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2015	Project Manager and Lead Auditor: On behalf of Chromaflo, conducted a Phase I Environmental Site Assessment to determine pre-lease baseline conditions for a proposed ink manufacturing facility in Johannesburg, South Africa.	Gauteng, South Africa
2015	Project Manager: On behalf of TOTAL completed compliance audits of 18 fuel retail sites located across Botswana to evaluate and assess the compliance of the current operational activities against Environmental Management Plans (EMPs) developed for the sites.	Botswana
2015	Project Manager and Auditor: Environmental Due Diligence review of SunChemical Corporation's printing ink facility in Robertsham, Johannesburg, to identify any significant environmental liabilities, specifically relating to potential impacts to soil and groundwater and compliance issues.	Johannesburg, South Africa
2015	Project Reviewer: Managed and reviewed an assessment and verification audit of AfriSam's Springvalley Quarry Environmental Management Programme Report (EMPR) in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (MPRDA).	Lichtenburg, South Africa
2015	Auditor: International Cyanide Management Code (ICMC) pre-assessment of the Golden Star Resources Wassa Mine in Ghana in January 2015, in advance of the ICMC recertification audit.	Accra, Ghana
2015	Project Manager: Project managed and reviewed an environmental compliance audit of DB Thermal located in Nigel.	Nigel, South Africa
2015	Project Manager: of pre-acquisition environmental due diligence site assessments and compliance audits of four Nampak packaging facilities located in Durban, Cape Town and Port Elizabeth.	Durban, Cape Town and Port Elizabeth, South Africa
2014	Lead Auditor: On behalf of Kinross Gold Corporations conducted an International Cyanide Management Code (ICMC) re-certification audit of Kinross Gold Mine located in Fairbanks, Alaska. The audit team conducted a detailed examination of cyanide management practices in the nine areas required by the ICMC.	Fairbanks, Alaska
2014	Lead Auditor: Completed an environmental due diligence liability assessment and compliance audit of a carbon black production facility for Orion Engineered Carbons.	Port Elizabeth, South Africa

Year	Type of Facility/Type of Audit Led	Country & State/Province
2013	Lead Auditor: on behalf of Albemarle Corporation completed an environmental compliance audit of the Jordan Bromine Company UBC facility located in the Safi region of Jordan and storage and shipping facility at Aqaba on the Red Sea.	Safi, Jordan
2013	Lead Auditor: Environmental Health and Safety compliance audit of a Givaudan flavours production facility located in Tulisa Park, Johannesburg.	Johannesburg, South Africa
2013	Lead Assessor: Completed a high level environmental risk assessment (ERA) of over 5000 fuel retail forecourt and commercial properties located throughout South Africa. The objective of the assessment was to prioritise sites for further investigations.	Nationwide, South Africa
2013	Project Manager: Environmental Site Assessments of 89 fuel retail stations throughout north eastern South Africa. The scope of work included targeted soil and groundwater sampling and interpretation of analyses.	North East, South Africa
2013	Project Manager: for a high level environmental site assessment of approximately 2000 hectares of land formally associated with a chemical facility on behalf of a prospective developer. The purpose of the assessment was specifically to identify any contaminated land liabilities.	Gauteng, South Africa
2013	Project Manager: for pre-acquisition environmental due diligence (EDD) on behalf of buyer. Site activities included industrial pump assembly and the manufacture of urethane pipe lining for Clyde Blowers in Richards Bay, South Africa.	Richards Bay, South Africa
2012- 2013	Lead Auditor: On behalf of Total South Africa, managed and completed environmental reviews and site assessments including contamination audits of 13 fuel retail stations located throughout 4 Provinces in South Africa.	Gauteng, Mpumalanga and Limpopo Provinces, South Africa
2011-2012	Lead Auditor: Environmental review, site assessment and project brief prepared in support of an Environmental Authorisation in accordance with Ugandan regulations for Environmental Impact Assessments.	Uganda

Year	Type of Facility/Type of Audit Led	Country & State/Province
2012	Project Manager and Lead Auditor for pre-acquisition due diligence assessments of 14 storage warehouses, a pasta production plant and flour mill in Abidjan.	Abidjan, Cote d'Ivoire.
2012	Technical Auditor: Involved in the pre-acquisition EDD assessment of a former steel foundry site and soap production plant in Abidjan and Bonoua, Cote d'Ivoire, included managing an intrusive ground investigation. Abidjan and Cote d'Ivoire.	
2012	Project Manager and Auditor: Environmental and compliance assessment of three ink packaging and mixing facilities as part of a divestiture process in Cape Town, Durban and Johannesburg, South Africa. The scope of work consisted of a site visit and review of site operations and existing documentation to identify potential environmental liabilities.	Cape Town, Durban and Johannesburg, South Africa
2012- 2013	Conducted an environmental assessment of a site for the proposed construction of a fertiliser blending plant in Tema, Ghana. The scope of work included a review of permitting requirements through the environmental impact assessment (EIA) process and identification of environmental restrictions to development.	Tema, Ghana
2010- 2013	Project Manager and Lead Auditor: overseeing compliance audits of three oil and gas industry support and service centres located in Luanda.	Luanda, Angola
2011	Project Manager: Pre entry environmental site assessment (ESA) of the ABS Alloys and Metals SA facility located in Isando, South Africa.	Johannesburg, South Africa
2011	Manager: Pre acquisition EDD audit and site investigation of an industrial facility manufacturing specialist submersible pump parts for the offshore oil and gas industry in Chonburi Province, Thailand.	Chonburi, Thailand
2011	Prepared environmental registers and a compliance review for a communications network provider with on area of operations in South Africa	Johannesburg, South Africa
2011	Project Manager: Managed and completed a high level ESA of the Zincor (Exxoro) electrolytic zinc refinery located near Springs, South Africa.	Gauteng, South Africa

Year	Type of Facility/Type of Audit Led	Country & State/Province
2009- 2010	Lead staff overseer: Provision of support to aluminium processing facilities in a number of international locations for environmental, health and safety (EHS) audits.	International
2009	Project coordinator: Environmental Due Diligence audits of over 30 chemical facilities servicing the offshore drilling industry in Canada. Work comprised site visits, soil sampling and reporting within three weeks of commission.	Canada
2009	Project Manager and Lead Auditor: Pre-acquisition environmental audits of facilities fabricating specialised oil drilling equipment within the Russian Federation.	Russia
2008- 2010	Integral to establishing an environmental management team seconded to the client during the construction phase of a new coal fired power station in the Limpopo province for Eskom South Africa. Completed benchmarking audits and provided ongoing auditing services and strategic environmental support during construction. Additionally, seconded over a short period as environmental manager for the project.	Limpopo Province, South Africa
2009	Completed pre-acquisition environmental due diligence audits of a food production and vegetable oil plant in the Kherson Oblast, Ukraine for a confidential client.	Kherson Oblast, Ukraine
2009	Project Manager: Environmental due diligence audit process for the establishment of oil and gas support services and storage yard in Erbil, Kurdistan	Erbil, Kurdistan
2008	Project Manager: EHS audits of facilities located in Pakistan, France and Tunisia for a confidential client.	Pakistan, France and Tunisia
2008	Project Manager: Environmental audit of an oil and gas industry service centre located in Luanda and prepared an environmental impact statement for a proposed base expansion and blend plant installation on behalf of Baker Hughes Angola.	Luanda, Angola

Year	Type of Facility/Type of Audit Led	Country & State/Province
2008	Project Manager: Pre-acquisition due diligence assessment and targeted intrusive investigation of a metal recycling facility in Chorzow, Poland for Celsa.	Chorzow, Poland
2008	Manager: Environmental due diligence audit of an industrial oil and lubricant target company in Germany for a US client.	Germany
2007	Project Manager: Pre acquisition due diligence audit of a steel works in Donetsk, Ukraine for Celsa.	Donetsk, Ukraine
2007	Manager: Environmental due diligence audit of a proposed gas pipeline onshore reception facility near Ashkelon, Israel for BG Group in accordance with IFC guidelines. Ashkelon, Israel	
2006- 2007	Project Manager: Pre-acquisition and developmental environmental assessment for the construction of a nitrogen plant and a watching/auditing brief during subsequent construction phase.	UK
2006	Undertook pre-acquisition due diligence audits of cotton processing sites located in South Africa, Malawi and Zambia for a cotton commodities business.	South Africa, Malawi and Zambia
2005	Project Manager: Managed and completed environmental due diligence audits and subsequent intrusive investigations of a vegetable oil refinery in Podari and an oil bottling plant in Craiova, Romania for Cargill. Provided input to subsequent remedial works.	Craiova, Romania
2003	Completed Phase I Environmental due diligence assessments of more than 50 sites in Romania for a confidential client. Subsequent Phase II intrusive investigations were completed on a further seven facilities.	Romania

Cyanide-related Operations and Other Auditing Experience - Technical Auditor

Glenn Mills

Type of Facility/Type of Audit Led	Country & State/Province
Lead auditor, ICMC recertification audit, Eldorado Gold Kisladag Mine, Turkey	Turkey
Lead auditor, ICMC certification audit, Kinross Gold, Tasiast mine, Mauritania	Mauritania
Technical auditor, preliminary ICMC audit, Golden Star Resources, Bogoso/Prestea mine, Ghana	Ghana
Lead/technical auditor, preliminary ICMC audit of mineral separation operations, Aurora Gold Project, Guyana	Guyana
Lead/technical auditor, preliminary ICMC audit of barge and roadway cyanide transporation links, Aurora Gold Project, Guyana	Guyana
Environmental and social due diligence auditor for Tulu Kapi gold mining project, Ethiopia	Ethiopia
Environmental and mining practices specialist, environmental and social due diligence audit of coal mine and power plant, Turkey	Turkey
Environmental and mining practices auditor, environmental and social due diligence audit of iron mining operations, ore transport railway, and ship loading facility, Amapa State, Brazil	Brazil
Environmental and mining practices auditor, environmental and social due diligence audit of Freeport McMoRan Copper & Gold Cerro Verde mine, Arequipa, Peru	Peru
Kinross Gold, Chukotka Mining and Geological Company (CMGC). Technical auditor for ICMC recertification audit, for the Kupol Mine	Chukotka A.O., Russian Federation
Lead auditor and project manager for International Cyanide Management Code (ICMC) certification audit of Eldorado Gold Kisladag Mine, Turkey	Turkey
	Lead auditor, ICMC recertification audit, Eldorado Gold Kisladag Mine, Turkey Lead auditor, ICMC certification audit, Kinross Gold, Tasiast mine, Mauritania Technical auditor, preliminary ICMC audit, Golden Star Resources, Bogoso/Prestea mine, Ghana Lead/technical auditor, preliminary ICMC audit of mineral separation operations, Aurora Gold Project, Guyana Lead/technical auditor, preliminary ICMC audit of barge and roadway cyanide transporation links, Aurora Gold Project, Guyana Environmental and social due diligence auditor for Tulu Kapi gold mining project, Ethiopia Environmental and mining practices specialist, environmental and social due diligence audit of coal mine and power plant, Turkey Environmental and mining practices auditor, environmental and social due diligence audit of iron mining operations, ore transport railway, and ship loading facility, Amapa State, Brazil Environmental and mining practices auditor, environmental and social due diligence audit of Freeport McMoRan Copper & Gold Cerro Verde mine, Arequipa, Peru Kinross Gold, Chukotka Mining and Geological Company (CMGC). Technical auditor for ICMC recertification audit, for the Kupol Mine Lead auditor and project manager for International Cyanide Management Code (ICMC) certification audit

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2013	ICMC review of draft Cyanide Management Plan and cyanide facility engineering drawings – Midway Gold, Pan Mine, Ely, Nevada	Nevada, USA	
2012	Lead auditor and project manager for independent environmental audit of Thompson Creek Metals Company, Inc. Endako, BC molybdenum mine and Mt. Milligan, BC copper/gold mine project		
2012	Lead auditor and project manager for audit of Environmental Management System (EMS) to ISO 14001 and US EPACF-EMS, for Agrium/NuWest Conda Phosphate Operations, Soda Springs, Idaho		
2012	Kinross Gold Corporation, Ghana. Lead auditor for the ICMC certification audit of the Kinross Chirano mine	Ghana	
2012	Technical auditor/project manager for ICMC recertification audit, Kinross Gold, Maricunga Mine	Chile	
2011	Lead auditor, EHS audit of early works construction activities, Guyana Goldfields, Inc., Aurora Gold Project	Guyana	
2011	Project Manager, ICMC pre-audits, Eldorado Gold Eastern Dragon, White Mountain, Tanjianshan, and Jinfeng mines and multiple cyanide transporters and producers	Heilongjiang, Jilin, Qinghai, and Guizhou provinces, Peoples' Republic of China	
2011	Technical auditor member/ project manager for ICMC recertification audit, Kinross Gold, Ft. Knox Mine	Alaska, USA	
2010	Technical auditor/project manager for ICMC certification audit, Kinross Gold, Mantos de Oro (La Coipa) Mine	Chile	
2010	Technical auditor/project manager for ICMC recertification audit, Kinross Gold/Barrick Gold, Round Mountain Mine	Nevada, USA	
2010	Technical auditor/project manager for ICMC recertification audit, Cripple Creek & Victor Gold Mining Company, Cripple Creek Mine	Colorado, USA	
2009	Technical auditor/project manager for ICMC certification audit, Kinross Gold, Kupol Mine	Chukotka A.O., Russian Federation	

Year	Type of Facility/Type of Audit Led	Country & State/Province
2008	Technical auditor/project manager for ICMC certification audit, Kinross Gold, Kettle River Operations	Washington, USA
2008	Technical auditor/ project manager for ICMC certification audit for Kinross Gold, Maricunga Mine	Chile
2007	Technical auditor/project manager for ICMC certification audit, Kinross Gold, Ft. Knox Mine	Alaska, USA
2007	Technical auditor/project manager for ICMC Colorado, U certification audit, Cripple Creek & Victor Gold Mining Company, Cripple Creek Mine	
2006 and 2007	Conducted ICMC preassessment for Kinross Gold, Maricunga Mine	Chile
2006	Conducted ICMC preassessment for Kinross Gold, Ft. Knox Mine (2006)	Alaska, USA
2006	Technical auditor/project manager for ICMC audit, Kinross Gold/Barrick Gold, Round Mountain Mine	
2006	Conducted ICMC preassessment for Kinross Gold/Barrick Gold, Round Mountain Mine	Nevada, USA
2005	Lead auditor, PT Freeport Indonesia 2005 External Environmental Audit	Papua, Indonesia
2004- 2006	Lead Consultant/ Project Manager/ Lead Author for Environmental and Social Impact Assessment (ESIA) for the Rosia Montana Project	Transylvania, Romania
2000	EMS Auditor, PT Freeport Indonesia, 2000 Internal Environmental Audit	Papua, Indonesia

Statement of No Conflict

I certify that I have not audited any component of this facility for which I was responsible for design or development; nor have I within the past year been an employee of the facility, its parent company, or associated affiliates. Excluding audits, I have not derived more than 30% of my income within the past 5 years from the facility, its parent, or associated affiliates. I have not participated in more than two consecutive Cyanide Code audits of this facility. I have participated in at least 3 health, safety, and/or environmental audits in the past 7 years and am familiar with standard audit procedures as well as with the protocols developed by the International Cyanide Management Institute for implementation of the Code.

Title	<u>Name</u>	<u>Signature</u>	<u>Date</u>
Lead Auditor *	Clinton Phaal	Mul.	September 16, 2016
Technical Auditor	Glenn Mills	Shill	September 16 , 2016

* Notarized as indicated





