## INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

# Cyanide Code Compliance Audit Gold Mining Operations

Summary Audit Report

AngloGold Ashanti Siguiri Gold Mine Guinea

 $20^{th} - 24^{th}$  October 2008 &  $2^{nd} - 3^{rd}$  October 2009



Name of Operation: SAG (Société Ashanti Goldfield de Guinée)

Name of Operation Owner: 85% AngloGold Ashanti & 15% Guinea

Government

Name of Operation Operator: AngloGold Ashanti

Name of Responsible Manager: Michiel Van De Merwe, Process Manager

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## Location detail and description of operation:

The Siguiri mine, operated since 1997, is an open-pit operation, located in the Siguiri district in the north-east of the Republic of Guinea, West Africa, about 850km from the capital city of Conakry. The nearest major town is Siguiri (approximately 50,000 inhabitants), located on the banks of the Niger River. AngloGold Ashanti has an 85% interest in the operation, with the balance 15% held by the government of Guinea. AngloGold Ashanti operates the site under the Société Ashanti Goldfields de Guinea. The site was originally owned by Ashanti, which merged with AngloGold in 2004.

## Mining

Since construction began in January 1997, drilling/blasting, waste and ore loading and hauling and blending of laterite and saprolite ore from a group of open pits (Bidini, Eureka Hill, Kosise and Kami) at the primary crusher have been conducted 365 days a year.



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## **Processing**

Processing began in 1997 via heap leaching and was continued for eight years, after which the long term potential of the site as a heap leach became limited. As the percentage of heap-leachable ore declined (and to be able to exploit saprolitic ores that extended below the base of the existing pits), a CIP plant was built.

On the CIP plant. ROM ore is reduced by a toothed roll crusher and then transported overland to a mill feed stockpile. The crushed ore is withdrawn at a controlled rate, via apron feeders, and conveyed for treatment through a scrubber and conventional ball milling circuit. Mill product is pumped from a common sump through a cluster of 660mm cyclones with the underflow reporting to a 6MW Ball Mill. A bleed of the cyclone underflow is treated in a gravity circuit incorporating a Knelson concentrator and an Intensive Leach circuit which contributes about 25% of the final gold produced.

Overflow from the cyclone cluster gravitates to a leach train consisting of ten tanks where lime, cyanide and hydrogen peroxide are added to effect gold dissolution. Slurry from the leach circuit is then fed into a carbon adsorption train, via a tramp screening step, in between the two tank farms. Carbon is recovered upstream of the adsorption train and eluted through a 12 tonne AARL elution circuit. Pregnant liquors from both the ILR and elution circuits are electrowon in separate cells at the gold room, with the resultant cathode sludge being dried, calcined and smelted. Eluted carbon is regenerated in a diesel fired kiln and returned to the adsorption circuit. Tailings slurry discharges from the last adsorption tank and gravitates to tailings screens for fugitive carbon recovery. Screens underflow then drop into a tank from where the slurry is pumped into a one-sided embankment tailings dam situated 8km south of the plant.



## Auditor's Finding

This	operation	is

This operation is
X in full compliance
☐ in substantial compliance *(see below)
□ not in compliance
with the International Cyanide Management Code.
* The Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.
Audit Company: Eagle Environmental
Audit Team Leader: Arend Hoogervorst
E-mail: arend@eagleenv.co.za
Names and Signatures of Other Auditors:
Name : Dawid L Viljoen Signature Date: 17   2   2010
Dates of Audit: $20^{th} - 24^{th}$ October 2008 & $2^{nd}$ -3 <sup>rd</sup> October 2009
I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.
I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.
AngloGold Ashanti Siguiri Gold Mine
Facility Signature of Lead Auditor Date
$\mathcal{M}_{\mathcal{M}_{\infty}}$
Siguiri Gold Mine Signature of Lead Auditor 17 <sup>th</sup> February 2010

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## Auditor's Findings

# 1. PRODUCTION: Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.

Standard of Practice1.1: Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

## X in full compliance with

The operation is	☐ in substantial compliance with <b>Standard of Practice 1.1</b>
	□ not in compliance with

Basis for this Finding/Deficiencies Identified:

The plant's cyanide manufacturer and supplier, Australian Gold Reagents (AGR), is an ICMI Code Signatory and has achieved full compliance in a certification audit against the ICMI Cyanide Code.

The supply contract stipulates states that the contractor and appointed sub-contractors shall at all times abide by the standards and principles of the ICMI Code.

# 2. TRANSPORTATION: Protect communities and the environment during cyanide transport.

Standard of Practice 2.1: Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.

## X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 2.1 ☐ not in compliance with



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Basis for this Finding/Deficiencies Identified:

AGR is responsible for the transport of the solid cyanide from its production facility in Kwinana, Australia to the Siguiri Gold Mine in Guinea. The packaging meets United Nations specifications and is labeled in both English and French. The AGR Transport Management Plan (required by the supply contract) covers all aspects of the cyanide transport through the various stages of the journey.

The supply contract stipulates in detail, the responsibilities and requirements for packaging and labeling, safety, security, escort, emergency response (spills prevention and clean-up), route planning and risk assessments, community liaison, emergency response resource access and availability, training, and communication.

Standard of Practice 2.2: Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

## X in full compliance with

The operation is	☐ in substantial compliance with <b>Standard of Practice 2.2</b>
	$\Box$ not in compliance with

Basis for this Finding/Deficiencies Identified:

The supply and transport contract for AGR stipulates that the transport sub-contractor must be a signatory to the ICMI and must be ICMI Code compliant. TTM, the Guinean Road transport contractor for AGR is certified in terms of the Cyanide Code. The sea transport leg by the MAERSK shipping company from Freemantle, Australia to the Guinean port of Conakry was subject to an internal AGR due diligence review which has been reviewed and approved by an ICMI accredited Transportation auditor. The supply and transport contract also stipulates that there will be appropriate liaison, joint drills and training.

# 3. HANDLING AND STORAGE: Protect workers and the environment during cyanide handling and storage.

Standard of Practice 3.1: Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.

## X in full compliance with

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The operation is	☐ in substantial compliance with <b>Standard of Practice 3.1</b>
	□ not in compliance with

Basis for this Finding/Deficiencies Identified:

Detailed, professionally designed, drawings for the cyanide mixing and storage area were designed by SENET and constructed in 2005. The drawings clearly indicated the structures were specifically designed for cyanide. The facilities (including the dry bulk solid store) are located on concrete and away from people and surface waters. Secondary containments built from concrete provide a competent barrier to leakages and provide adequate and appropriate containment. Cyanide mixing and storage tanks are equipped with level indicators with high and low alarms and there are make-up interlocks with the make up tank pump which display on the control room SCADA system. The solid cyanide storage area is in a roofed structure, allowing for adequate air circulation and prevention of weather impacts. Procedures covering cyanide unloading, mixing, transfer and handling of full and empty cyanide boxes were reviewed and found to be effective. Cyanide areas are fenced and security controlled with adequate controls and separation to prevent mixing with incompatible materials.

Standard of Practice 3.2: Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

## X in full compliance with

The operation is	☐ in substantial compliance with <b>Standard of Practice 3.2</b>
	□ not in compliance with

Basis for this Finding/Deficiencies Identified:

Detailed procedures are in place covering sodium cyanide off-loading, "destuffing" of marine containers, makeup, disposal of empty packaging, and solid and liquid spill responses. A detailed risk assessment was sighted covering the disposal of cyanide packaging. All procedures include step-by-step task and hazard identification and appropriate actions for normal, abnormal and emergency occurrences. PPE requirements are included in procedures. Use is made of the "Buddy" system to optimise safety and safe handling.



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## 4. OPERATIONS: Manage cyanide process solutions and waste streams to protect human health and the environment.

Standard of Practice 4.1: Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.

## X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 4.1 ☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

The site has 79 procedures in place covering operational and maintenance of cyanide facilities and a TSF Code of Practice and operating manual. Annual geotechnical audits of the TSF are undertaken, the TSF pipeline is inspected daily and once per night shift and high risk areas such as bends are periodically thickness tested. A change management procedure is in place and functioning. No regeneration or cyanide destruction systems are in are place or required. Preventative maintenance and inspection in the plant and on the TSF is controlled by an electronic system called "Mainpac". Key pumps, tanks, bunded areas and equipment were checked on the system and found to be systematically maintained through visual and mechanical checks, thickness tests and historical reviews. Routine daily and monthly inspection reports, legal inspections, and checklists were sampled and employees interviewed to check the effectiveness of systems and ensure that ensure proactive and reactive management. There are no circumstances where the plant closure would be required due to water balance upsets but there is a closure procedure include in the contingencies for high WAD cyanide. No scenario is identified where emergency power would be necessary to prevent unintentional releases but the plant has emergency power generators from its second power station which restore power to plant emergency equipment.

Standard of Practice 4.2: Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

## X in full compliance with

The operation is 
☐ in substantial compliance with Standard of Practice 4.2
☐ not in compliance with

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20<sup>th</sup>-24<sup>th</sup> October 2008 & 2<sup>nd</sup>-3<sup>rd</sup> October 2009 AngloGold Ashanti Siguiri Gold Mine  $\square$  not subject to Basis for this Finding/Deficiencies Identified: Ore fed to the gold plant is highly variable. Reagent consumption has been determined for each ore type and the monthly mining plan predicts ore mixes. Daily contact between the Process Manager and the Mineral Resource Manager takes place to check expected daily ore type delivery to the gold plant. Daily leach efficiencies are evaluated to optimise cyanide consumption and gold recoveries. Additional test work includes the effects of lead nitrate, and oxygen addition using hydrogen peroxide. An external laboratory also conducts diagnostic leach tests to determine the gold in residue. A TAC 2000 cyanide addition control and analyser and a Cynoprobe are used to manage cyanide dosing and optimise cyanide consumption. Standard of Practice 4.3: Implement a comprehensive water management program to protect against unintentional releases. X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 4.3**  $\square$  not in compliance with Basis for this Finding/Deficiencies Identified: A comprehensive, computerised probabilistic water balance (GoldSim) is in place which covers both the plant and the TSF. Procedures were sighted which manage process water pond levels, pollution control dam operation and TSF operations to prevent overtopping. Information is available on rainfall, storm events, freeboard, and solution deposition. Precipitation records are available for the site for the last 9 years. Procedures and operating plans for the TSF were developed, based upon the direction given in the design data and studies. Daily plant inspections record all water pond levels as well as rainfall data and phreatic levels at the TSF. Procedures and plans are in place to manage normal and emergency conditions. The minimum freeboards and operating capacities of ponds are identified and documented. All relevant procedures, plans and initiatives were reviewed and found to be appropriate in managing to prevent overtopping and unintentional releases. Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions. X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 4.4** Signature of Lead Auditor 17<sup>th</sup> February 2010 Siguiri Gold Mine

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□ n	ot in complian	ce with
values that average between at the pool are below 50pp are necessary. However, t	r tailings dischen 35 to 45 ppo om WAD. Thu he TSF is fen nide-related bi	ified: harges from November 2008 to Oct 2009 indicate m WAD CN, indicating that WAD cyanide levels as no extra measures to protect birds and wildlife ced and has access control to prevent accidental rd, or wildlife mortalities have been experienced
Standard of Practice 4.5:	•	asures to protect fish and wildlife from direct and narges of cyanide process solutions to surface
	X in full c	ompliance with
The operation is	□ in substa	antial compliance with Standard of Practice 4.5
	□ not in co	ompliance with
place to manage spills an surface and groundwater r	indirect disch d releases to monitoring take and French	arges to surface water. There are procedures in prevent discharge to surface water and ongoing es place. Monitoring boreholes have been drilled drains are in place. All WAD cyanide levels
· ·	•	asures designed to manage seepage from cyanide otect the beneficial uses of ground water.
	X in full c	ompliance with
The operation is	□ in substa	antial compliance with Standard of Practice 4.6
	□ not in co	ompliance with
return water system. The Thave been drilled around to cyanide. Current and history	h finger drain TSF dam main the TSF and thorical data ind	ified is and the water is returned to the plant via the wall is also fitted with a curtain drain. Boreholes the plant and are sampled and analysed fro WAD licates cyanide levels at, or below, the limits of dwater downstream of the plant and TSF have
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been identified and no legal limits have been set by the jurisdictional authority. Best practice standards are used by the site in the absence of jurisdictional standards.

## Practice 4.7: Provide spill prevention or containment measures for process tanks and pipelines. X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 4.7** $\square$ not in compliance with Basis for this Finding/Deficiencies Identified: The site's layout includes bunding and containment for all cyanide tankage and piping. Return water tanks overflow will drain back to the TSF, which acts as a spill prevention and secondary containment. Spill prevention is also managed through the use of procedures, planned maintenance and risk assessment. Solutions and liquids in secondary containment are pumped back into the circuit and all secondary containment areas are maintained empty. The leach, CIP and Tails bund areas are connected to the Pollution Control Dam and thus the total bund capacity is adequate for the required '110% capacity of largest tank'. Bund containment for all other tanks meets code requirements. The leach and CIP tanks are installed on ring beams. As the tanks are not monitored within the tanks or ring beams, the site has used a formal, risk based inspection (based upon the 12 principles of API Recommended Practice 580) to evaluate the risk and potential cause of tank releases and has modified and enhanced its tank inspections, based upon the results of the calculations and assessments. TSF pipelines are inspected daily and the TSF pipeline is overdesigned for its current usage. Cyanide tanks and pipelines are manufactured from materials compatible with cyanide and high pH conditions. Standard of Practice 4.8: Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications. X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 4.8** $\square$ not in compliance with Basis for this Finding/Deficiencies Identified:

Quality control/quality assurance documentation was not available for the site and no new facilities have been added since Code signature. A Professional Engineer's report for

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the reagent strength facilities declared them fit for purpose and a subsequent Fit for Purpose Inspection Report by the site's Professional certificated Engineer verified that all cyanide facilities were fit to continue functioning as currently operated. Geotechnical inspections by a Geotechnical Engineer are conducted regularly on the TSF and an annual TSF audit is conducted by a Geotechnical consultant.

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Standard of Practice	4.9: Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.
	X in full compliance with
The operation is	☐ in substantial compliance with <b>Standard of Practice 4.9</b>
	$\Box$ not in compliance with
cyanide, which was rev custody procedures wer functioning. Sampling discharge points and w monthly. Detail on sar circumstances. The site	Deficiencies Identified: itoring plan is in place to sample both surface and groundwater for riewed. Monitoring, sample preservation and custody and chain of re developed internally by a competent person and are in place and maps were sighted which indicated sample sites, boreholes, rater points. Sampling frequencies range from daily, to weekly to mple points was reviewed and found adequate for sample point it's Environmental Department investigates all wildlife mortalities, hed procedure, should they occur.
5. DECOMMISSIONI	ING: Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities
Standard of Practice 5.	1: Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

## X in full compliance with

The operation is ☐ in substantial compliance with **Standard of Practice 5.1**  $\square$  not in compliance with

Basis for this Finding/Deficiencies Identified:

A cyanide decommissioning procedure is in place which includes a implementation schedule for decommissioning activities. Cyanide decommissioning would be also be

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undertaken with consideration of the internal, AngloGold Ashanti corporate Cyanide Management Guidelines. The mine closure plan, which includes cyanide decommissioning, is reviewed annually, as is the cyanide decommissioning procedure. Plant closure is only planned in 20 years time.

Standard of Practice 5.2: Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

## X in full compliance with

The operation is 

☐ in substantial compliance with Standard of Practice 5.2

☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

The mine closure estimates, including cyanide decommissioning, were prepared by a third party and include closure and decommissioning costs undertaken by a third party. These are currently in the process of being revised. The cost estimates are reviewed annually. Legislation requires that adequate funding must be available for rehabilitation of the Mine and proof of the funding availability was sighted.

## 6. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.

Standard of Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce or control them.

## X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 6.1 ☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

The site has 79 procedures in place covering operational and maintenance of cyanide facilities and a TSF Code of Practice and operating manual with associated procedures. Plant procedures include key offloading, unloading and mixing tasks, equipment decontamination, power outages, lock-outs, and confined entry. All procedures include PPE requirements and pre-work inspections to be carried out. The change management procedure require signoff by the Safety, Health & Environment Manager. Worker input is received from production tool box meetings (held in the local language), engineering tool box meetings, feedback from training sessions and worker inputs into risk assessment processes.



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Standard of Practice 6.2: Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

## X in full compliance with

The operation is ☐ in substantial compliance with **Standard of Practice 6.2**  $\square$  not in compliance with

Basis for this Finding/Deficiencies Identified:

The plant pH set point is 10.2 to 10.4. Automatic pH control is done by adding lime to the No 1 leach tank and using pH metering in the No 2 or 3 tanks. The cyanide dosing system is interlocked with the pH monitors, which trip the cyanide pumps at pH 9.5. Cyanide "Hot spots" were identified as the Gold Room electro-winning area, cyanide mixing area, leach dosing points, residue and Gecko intensive leach reactor area. Ongoing inspections and checks are also used to monitor and check facilities and emergency response equipment functioning. Safety equipment such as safety showers, low pressure eye wash stations, and dry powder fire extinguishers are numerous and adequately signposted. A site wide pipe colour coding system is in operation which includes cyanide pipe colour coding and directional flow signage. Tanks are colour coded and/or labeled. Six fixed and twenty mobile HCN gas monitors are used on site and are calibrated and maintained according to procedures using manufacturers recommendations. The language of the workforce is Malinke (not a written language), French and some English. MSDSs were sighted in French and English. Use is made of signage and pictograms and cyanide training is done using pictures. Formal employee interviews were used to check awareness and sensitivity to health and safety measures and the response from employees was found to be appropriate and acceptable. An accident and incident reporting and investigation procedure was found to be in place and effective.

Standard of Practice 6.3: Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

## X in full compliance with

The operation is ☐ in substantial compliance with **Standard of Practice 6.3**  $\square$  not in compliance with



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Basis for this Finding/Deficiencies Identified:

The site has seven cyanide emergency boxes located strategically throughout with Emergency first aid equipment, medical oxygen and SCBA sets. Antidote kits are readily available and stored in fridges according to manufacturer's recommendations. Emergency communications in carried out using radios and telephones. All safety showers are connected to the alarm system in the SCADA and are supported by man down alarms. Cyanide emergency procedures form part of the site-wide emergency preparedness plan which covers the whole site and includes the cyanide facilities. Equipment is regularly checked and tested and cyanide related mock drills are held on site and in conjunction with the mine clinic (regarded as the best available to deal with on-site cyanide emergencies) and the mine hospital (13.5 kms from site). Interviews confirmed employee knowledge of cyanide hazards, and emergency response.

# 7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.

Standard of Practice 7.1: Prepare detailed emergency response plans for potential cyanide releases.

## X in full compliance with

The operation is	☐ in substantial compliance with <b>Standard of Practice 7.1</b>
	$\square$ not in compliance with

Basis for this Finding/Deficiencies Identified:

The mine-wide Emergency Preparedness and Response Plan includes cyanide emergency procedures and the process Emergency Preparedness and Response Plan is in place and summarised in the Mine Plan. The site has used a risk assessment to develop site-specific emergency scenarios and responses for its emergency response plan. The emergency preparedness plan combines existing procedural responses and emergency provisions to deal with the various scenarios. The site has procedures in the event that there are upsets on the cyanide transport convoy. Emergency response is also covered thoroughly in the AGR Transport Management Plan used by AGR's local transport contractor in Guinea. In addition, communities along the tailings line have been identified in the event that evacuation becomes necessary.

Standard of Practice 7.2: Involve site personnel and stakeholders in the planning process.

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X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 7.2**  $\square$  not in compliance with Basis for this Finding/Deficiencies Identified: Representatives of the workforce (employees, Health & Safety Representatives and Union representatives) were involved in the risk assessment to develop the emergency scenarios and response in the emergency response plan and procedures. Emergency planning is also raised during tool box talks and meetings. Full cycle drills are used to involve hospital and clinic staff in planning and feedback processes. Communities are made aware of emergency planning through dialogue and community communications. Standard of Practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response. X in full compliance with The operation is ☐ in substantial compliance with **Standard of Practice 7.3**  $\square$  not in compliance with Basis for this Finding/Deficiencies Identified: The Mine Emergency Preparedness Plan details clear duties, roles and responsibilities for the various emergency scenarios and for an on-scene commander and his deputy (Shift supervisor, Process Manager and/or Engineering Manager). Authority to commit resources is by virtue of the job description and operational responsibilities. The Plan includes contact references (telephone, cell phone, etc.) of internal and external resources for the various scenarios, particularly with detail where external resources and skills might be needed. Contact lists are also held by Heads of Departments, the control room, entrance, and Security and updated by the Process Manager. Emergency equipment lists were checked and site inspections confirmed availability and readiness. Emergency Team members were checked and training records and assessments showed the individuals to be well prepared and well equipped for cyanide emergencies. Periodic full scale drills involving internal and external stakeholders ensure that roles and responsibilities are understood and clearly implemented, training is appropriate, and that equipment was available. Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting. Signa.... f Lead Auditor

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	X in full compliance with
The operation is	☐ in substantial compliance with <b>Standard of Practice 7.4</b>
	$\square$ not in compliance with
The mine-wide Emerg notification and report are updated regularly.	Deficiencies Identified: ency Response Plan includes full details for appropriate emergency ing and the call-out procedure and contact information lists which Media communication is done via a formal procedure. Community responsibility of the Community Affairs Manager.
Standard of Practice	7.5: Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.
	X in full compliance with
The operation is	☐ in substantial compliance with <b>Standard of Practice 7.5</b>
	$\Box$ not in compliance with
The mine-wide Emerg procedures which cov and spills, as appropr processes and material and the use of treatm	Deficiencies Identified: gency Response Plan refers to remediation measures and specific er clean-up and remediation relating to releases, pipeline failures tate to the site-specific identified scenarios. Use of neutralization is is covered in procedures, as is disposal of contaminated materials tent chemicals, such as ferrous sulphate, in surface water being procedures also cover remediation issues.
Standard of Practice 7 revise them as needed.	.6: Periodically evaluate response procedures and capabilities and
	X in full compliance with
The operation is	☐ in substantial compliance with <b>Standard of Practice 7.6</b>
	$\Box$ not in compliance with
The current Emergence emergency requiring r	Deficiencies Identified:  cy Response Plan was reviewed recently and no cyanide related eview of the plan occurred since becoming signatory to the Code.
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Emergency drills are conducted regularly and evaluated with recommendations being made for improvement to training emergency procedures and plan, as appropriate. The change management process also requires that where appropriate, the Emergency Response Plan be reviewed to tie in with any changes.

# 8. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use.

## X in full compliance with

The operation is 

☐ in substantial compliance with Standard of Practice 8.1

☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

All plant staff and contractors that will be on site for more than five days receive induction training for cyanide awareness and basic cyanide first aid, followed by a written test or pictogram test. Verbal training is given in Malinke (local language) and oral testing conducted for illiterate staff. Refresher training is given annually and controlled using a badge system. Training records have been kept since 2005 and will be kept for 40 years. Training and training records were checked during random employee interviews.

Standard of Practice 8.2: Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

## X in full compliance with

The operation is 
☐ in substantial compliance with Standard of Practice 8.2
☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

The site's Training Matrix details training requirements for all cyanide workers in the plant. On the job training is provided by supervisors using operational procedures. New employees are trained and passed out before being allowed to work in the Plant. Training is provided by an experienced production person who is qualified as a trainer. The Trainer assesses employees after training and also carries out on-the-job observations and

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AngloGold Ashanti Siguiri Gold Mine

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Planned Task Observations (PTOs) to test training effectiveness and application. Written tests are conducted, including pictogram tests and oral tests are used to evaluate illiterate staff. Training records have been kept since 2005 and will be kept for 40 years.

Standard of Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

# X in full compliance with The operation is □ in substantial compliance with Standard of Practice 8.3 □ not in compliance with

Basis for this Finding/Deficiencies Identified:

All employees receive basic cyanide awareness training. A separate emergency response team will deal with incidents. The plant emergency response team are trained in basic cyanide first aid, intermediate cyanide training (including the "buddy" system), use of SCBA sets, administering of medical oxygen and the emergency response plan. Periodic mock drills are undertaken and training personnel attend these drills and formally evaluate response and performance. Training records were checked to confirm attendance and successful completion. General cyanide worker refresher training is conducted annually. No local responders apart from mine clinic and mine hospital staff are involved in the Emergency Response Plan. Training records have been kept since 2005 and will be kept for 40 years.

## 9. DIALOGUE: Engage in public consultation and disclosure.

Standard of Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern.

# X in full compliance with The operation is □ in substantial compliance with Standard of Practice 9.1 □ not in compliance with

Basis for this Finding/Deficiencies Identified:

All employees are aware of cyanide. Meetings with communities were arranged following pipe failures in 2005 which included information on cyanide. The following communities were identified: Sigitigia, Kintinia, Fatoya, Balato, Koron Boukaria, Kofilani, Koron Koba, Fenserkole, Samani and annual training and awareness sessions

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for communities on basic cyanide and basic cyanide first aid were held with the community representatives, focusing on the best communicators and community leaders. (Community stakeholders are not part of the Emergency response process but are informed about actions through "training" and are encouraged to raise questions and commence dialogue.) Feedback included concerns about the water boreholes and pipelines which were responded to. Specific meetings addressing incidents and problems are held. Feedback is obtained during meetings. The influx of non-locals, attracted by the mining activities, are creating certain problems. Communication highlights the danger of bringing any cyanide containers into village or houses. Communication is also with teachers to spread the information to the children.

Standard of Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

## X in full compliance with

The operation is	☐ in substantial compliance with <b>Standard of Practice 9.2</b>
	$\Box$ not in compliance with

Basis for this Finding/Deficiencies Identified:

Dialogue is designed to be two way and thus the opportunity to raise concerns and receive information is undertaken at the same time. Meetings with communities were arranged following pipe failures in 2005 which included information on cyanide. The following communities were identified: Sigitigia, Kintinia, Fatoya, Balato, Koron Boukaria, Kofilani, Koron Koba, Fenserkole, Samani and annual training and awareness sessions for communities on basic cyanide and basic cyanide first aid were held with the community representatives, focusing on the best communicators and community leaders. (Community stakeholders are not part of the Emergency response process but are informed about actions through "training" and are encouraged to raise questions and commence dialogue.) Feedback included concerns about the water boreholes and pipelines which were responded to. Specific meetings addressing incidents and problems are held. Feedback is obtained during meetings. The influx of non-locals, attracted by the mining activities, are creating certain problems. Communication highlights the danger of bringing any cyanide containers into village or houses. Communication is also with teachers to spread the information to the children.

Standard of Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

## X in full compliance with

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The operation is		☐ in substantial compliance with <b>Standard of Practice 9.3</b>
		$\Box$ not in compliance with

Basis for this Finding/Deficiencies Identified:

Mine incident announcements are made, followed by a detailed investigation, signed by the MD, and reported to Accra, from where further reporting is determined. The Government, as a shareholder, attends quarterly sessions where incidents are reported. Community communication is done where it concerns the Community by the Mine Public Relations department. This was undertaken when a pipe failure occurred in 2005. Level one environmental and safety incidents are recorded in the annual reports and sustainable development report.

Mine legislation requires the reporting of accidents. Regulation 144 (Part 1) of the Mining Act 1998 is followed. AngloGold Ashanti Corporate requirements indicate that level 1 incidents are reported in the annual report. Cyanide usage and management, including incidents, features in the AngloGold Ashanti Report to Society 2007 appearing on the AGA website, which indicated no incidents to report for Siguiri but other AngloGold Ashanti mines incidents were sighted in the report.

Environmental releases reporting is required in terms of Guinean legislation ("The code for protection of environment and environmental values ordinance number 045/PRG/87 with 022/PRG/89 Ch2 article 85).

