

***INTERNATIONAL CYANIDE
MANAGEMENT INSTITUTE***

***Cyanide Code Compliance Audit
Gold Mining Operations***

Recertification Summary Audit Report

***AngloGold Ashanti
West Gold Plant
South Africa***

12th – 15th June 2017

***For the
International Cyanide Management Code***





Name of Operation: AngloGold Ashanti West Gold Plant
Vaal River South

Name of Operation Owner: AngloGold Ashanti South African Region
Metallurgy

Name of Operation Operator: AngloGold Ashanti South African Region
Metallurgy – Vaal River South

Name of Responsible Manager: Mr Julius Lawrence

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Location detail and description of operation:

AngloGold Ashanti West Gold Plant is situated in the North West Province of South Africa, approximately 4 km west of Orkney.

The plant treats reclaimed marginal ore dumps (MOD) from the No 1, 3, 4, 5 MODs and environmental clean-up material to a treatment capacity of 180,000 tons per month. Residue from the plant is pumped to the Tailings Storage Facilities (TSF) situated at the West Extension. West Gold Plant is the newest of the Vaal River Operations Gold Plants of AGA SARM (AngloGold Ashanti South Africa Region Metallurgy).

The plant utilizes two semi-autogenous, ROM (run of mine) mills in the comminution circuit, which is then followed by a thickening section where lime is added to condition the slurry prior to cyanide dosing in the pre-leach section. The pre-leach section consists of four mechanically agitated, flat-bottomed leach



vessels, into which oxygen is injected to achieve the required dissolved oxygen concentration for gold dissolution. The leach pulp gravitates to the carbon in leach (CIL) vessels.

The CIL section of the plant consists of eight mechanically agitated, flat-bottomed vessels operated in a carousel mode, whereby the carbon is contained in the same vessel. Pulp is fed to the first CIL vessel and gravitates through the circuit to the residue vessel. The plant residue is pumped to the West Extension TSF. Gold loaded carbon is removed routinely from the CIL circuit.

The loaded carbon is washed with diluted hydrochloric acid to remove calcium and base metal impurities from the carbon. The spent hydrochloric acid is discarded into the residue stream. The acid treated, loaded carbon is then transferred to an elution column. The West Gold Plant has opted for the Zadra elution process. Barren eluent with diluted caustic heated to 130°C is used to elute the loaded gold from the carbon. Stripped gold cyanide eluate exiting the elution column as pregnant solution passes continuously through the electro-winning cells, where the gold is stripped from solution and deposited onto the cathodes. The stripped barren solution is recycled back into the elution circuit.

The eluted carbon is regenerated through a regeneration kiln at 700 °C to remove volatile fouling on the carbon. The regenerated carbon is then returned to the CIL circuit. The cathode gold sludge is calcined and smelted to produce gold bullion bars which are refined at the Rand Refinery for sale.



Auditor's Finding

This operation is

- in full compliance
 in substantial compliance
 not in compliance

with the International Cyanide Management Code.

This operation has not experienced compliance problems during the previous three year audit cycle.

Audit Company: Eagle Environmental

Audit Team Leader: Arend Hoogervorst

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Names and Signatures of Other Auditors:

Name : Dawid M. L Viljoen

Signature



Date: 3/01/2018

Dates of Audit: 12th – 15th June 2017

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 Mine Operations and using standard and accepted practices for health, safety and environmental audits.

West Gold Plant



8/01/2018

Facility

Signature of Lead Auditor

Date

West Gold Plant


Signature of Lead Auditor

21st December 2017

Auditor's Findings

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

Standard of Practice 1.1: 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 **Standard of Practice 1.1**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

There is an AngloGold Ashanti (AGA) cyanide supply contract, covering all AngloGold Ashanti Gold Plants, including West Gold Plant, in place with SASOL Polymers, as the sole supplier of liquid sodium cyanide, delivered by bulk tanker. The contract requires that the producer or supplier of cyanide must be a signatory to the ICMI Code and the producer or supplier must be ICMI certified. SASOL Polymers is a signatory to the Cyanide Code and was re-certified as a fully compliant Production Facility with the ICMI Cyanide Code on 29 March 2016.

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

Basis for this Finding/Deficiencies Identified:

The supply contract between SASOL Polymers and AngloGold Ashanti (which includes West Gold Plant) specifically covers the responsibilities and requirements for transport,

safety, security, unloading, emergency response (spills prevention and clean-up), route planning and risk assessments, community liaison, emergency response resource access and availability, training, and communication. SASOL Polymers' cyanide transporter, Tanker Services Specialised Products Division, was re-certified on 17 July 2015 as a fully ICMI Code compliant transporter.

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 **Standard of Practice 2.2**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

The AngloGold Ashanti supply contract (which includes West Gold Plant) requires that the producer/supplier of cyanide must be a signatory to the ICMI Code and the producer supplier and transporter must be ICMI certified. Tanker Services Specialised Products Division, SASOL Polymers' cyanide transporter, was re-certified on 17 July 2015 as a fully ICMI Code compliant transporter, thus meeting all the requirements for appropriate emergency response planning and cyanide management.

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

The operation is in substantial compliance with **Standard of Practice 3.1**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

The operation uses only liquid cyanide, delivered by bulk tanker, and no mixing or storage of solid cyanide takes place on site. As confirmed in previous certification audits, the offloading and storage facilities were designed and built, in accordance with sound and accepted engineering practices, with materials appropriate for use with cyanide and are located in concrete bunds away from people and surface waters. Cyanide storage

tanks located within a steel framework above a concrete bunded area. The tanks are each equipped with a ventilation pipe to prevent Hydrogen Cyanide gas build-up. Producer technical audits in 2016 and 2017 scored 99% and 100% respectively. The cyanide offloading and storage area is located across the road from engineering workshops. Special precautions to reduce the exposure risk include the use of fixed HCN (Hydrogen Cyanide gas) monitors with alarms. The area and road is barricaded during offloading operations to prevent people from entering the danger zone. The area is fully contained to prevent potential exposure to workshop users. No risk to surface water exists. The cyanide is also stored away from incompatible materials. The Cyanide Offloading area is concreted and the slope is towards the bund area for the cyanide storage tanks. Any spillage from the tanker into the sloped offloading area drains into the cyanide main bund from where it is pumped either to leach or to the cyanide storage tanks as per procedure. All tanks are equipped with level indicators and high level alarms, automatic air valve is interlocked and closes at 85% of operating level, stopping transfer from road tanker to tanks. Tank levels are taken and recorded before cyanide offloading commences. Management recommendation is to operate the levels at or below 65% prior to offloading of a tanker to provide adequate safety gap. The procedure covering cyanide unloading was reviewed and found to be effective. The cyanide storage and unloading area is contained in a separate fenced, locked area under key control. The area is inside the main plant security area with access control.

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 **Standard of Practice 3.2**
 - not in compliance with

Basis for this Finding/Deficiencies Identified:

Liquid sodium cyanide is delivered in bulk tankers from Sasol Polymers to the Plant and offloaded into cyanide storage tanks. No solid cyanide is used on the plant therefore the only containers are the tankers themselves. The tanker couplings, connection pipe, and offloading couplings are washed before and after offloading. The outside of the tankers are also cleaned on their return to Sasol's premises. The offloading procedure is detailed, spelling out PPE (Personal Protective Equipment) requirements, use of a "buddy" in the process, and opening and closing of valves and connection of couplings are clearly sequenced to prevent spillages and accidental releases during off-loading.

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 West Gold Plant has 50 Cyanide Safe Handling and Emergency Procedures, 24 Environmental Management and Protection Procedures, 12 Emergency Preparedness Procedures, and 16 General Procedures and General Emergency Procedures, supported by 10 TSF(Tailings Storage facility) contractor operating and management procedures and a mandatory Code of Practice covering TSF operation. The procedures cover normal, abnormal and emergency conditions.

Annual Vaal River Operations (VRO) Tailings Facilities Audit Reports, by the AngloGold Ashanti Senior Manager: Geotechnical Engineering, were sighted with the conclusion, "...VRO TSF is generally in good condition and is well managed..." Ongoing issues were identified, prioritised and actioned in regular TSF meetings. The Geotechnical Engineer (AGA South Africa Region Surface Operations) concluding in a note for the record that, "... The TSF's are operated in accordance with the Code of Practice. I conclude that the Vaal River TSF's are stable and possess good factors of safety against major slope failure...". There are procedures in place which cover TSF freeboard, return water pond freeboard, storm event design capacities and elevated WAD cyanide levels.

Routine daily, weekly, monthly and quarterly inspection reports (including operational inspections, SAP (Proprietary name of software company) Planned Maintenance System (PMS) inspections, and Structural Integrity Management Monitoring (SIMM) inspections, legal inspections, and checklists for proactive and reactive management were sampled to confirm the effectiveness of systems. At the TSFs, Pipeline Patrols are undertaken for each shift (3 shifts per day) to spot any leaks and take appropriate action as detailed in the Pipeline Failure Procedure. The strategy to reduce the incidence of pipe failures and leaks is as per the previous re-certification audit and is in the process of being implemented. The note, 'Pipeline Replacement Strategy' by the Production Engineer indicates the scheduling for the replacement of steel pipes with HDPE (High Density Polyethylene)-lined steel pipes, as well as the progress of the replacement of the seven slurry lines with the HDPE-lined pipes. The note confirmed the historical strategy to rotate pipes based on thickness tests results. It includes the "Slurry Pipelines - Lined vs. unlined" discussion, indicating length diagrams. The Wonderware system (the SCADA (Supervisory control and data acquisition" system" –computerised control system) control room system) shows in real time the operation of the pumps so that any



issues can be seen immediately. TSF freeboard is surveyed on a monthly basis (Cyclone West Extension dam), and the other dams are surveyed on a quarterly basis. The return water dams are equipped with ultrasonic level detectors and use is made of telemetry to the central control room to record data. The pumps are controlled either manually or automatically. There is a probabilistic water balance in place, and no scenario has been identified where the need has been highlighted to shut down plant to prevent overtopping. Proactive planning and management of containment dams, dam levels and normal and abnormal conditions contributes to reduction of risk and the unlikely need to temporarily cease plant operations under abnormal precipitation events. The plant is designed to contain any spillages in the anti-pollution ponds and thus no back up power is required in case of power failures.

A SAP planned maintenance system (PMS) is in place including both the plant and TSFs and was reviewed and sampled electronically for all equipment over the three year period since the last recertification. Operational inspections conducted include: daily inspections; cyanide storage facility daily inspections; Legal two weekly inspections; and Shift foreman's daily inspections. Tank thickness testing is done on a planned basis for all high and low strength cyanide tanks. TSF inspections are carried out shiftly, daily, monthly, quarterly and annually. Weekly, monthly, quarterly and yearly inspections are scheduled on the SAP PMS system. The inspection frequencies are deemed adequate to assure and document that cyanide facilities are functioning within design parameters. A change management procedure covering health, safety and environment is in place. The procedure requires sign-off by safety and environmental personnel. However, no change exercises have been carried out involving cyanide since the previous recertification audit.

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
 - not subject to

Basis for this Finding/Deficiencies Identified:

Head samples are analysed by an external laboratory and base recovery results aid in predicting and understanding how much gold is available for cyanide. A report covering January 2016 to May 2017 was reviewed. Samples are taken from deliveries to the plant and cover the different ore sources. Diagnostic leaching was started in 2013 on the residue and results from 2015 and 2017 were reviewed.

The Remote Operations Control (ROC) system (an advanced data collection system and monitoring station) monitors the instrumentation outputs from the plant, which is stored in a data collector. Control charts are compiled for performance parameters. Upper limits

and lower limits for performance are set. Notification emails and SMSs are sent in an escalation sequence when the upper or lower limit is breached. Graphs for WAD, cyanide addition, and pH graph were reviewed. Cyanide consumption graphs from 2015 to date were reviewed. An increased trend was observed and is mainly due to the surface ore sources cyanide demand increasing.

The cyanide dosing is controlled by a ratio control system based on the individual mass flow systems of the thickeners. The PLC (Programmable Logic Controller) accumulates the total mass fed to the pre-leach which is used for the ratio control. A TAC 1000 on-line free cyanide analyser measures the cyanide in the pre-leach and as a cascade system, adjusts the ratio controller to maintain the free cyanide at the pre-set point. The Remote Operating Centre (ROC) accumulates various operating parameters input from the plant SCADA system and data and will send an SMS message if the control limits are not met.

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**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

A GoldSim Water Balance (a probabilistic water balance (PWB)) was developed in 2010 and incorporates scenario planning to do water demand and water conservation strategy. Water balance input sheets are updated quarterly and fed into GoldSim. Other updates are done when major changes occur such as the recent influx of additional groundwater due to neighbouring shafts that stopped pumping. This model was used until the end of 2014.

Clean dirty separation studies (1:50 year storm event) data is fed into the GoldSim model in terms of dam sizes and overflows. The 1: 50 year storm event model run on GoldSim includes every AGA plant and TSF, dam and catchment areas reviewed post 2009.

A meteorological assessment was conducted by an independent consultant and 1:50 year storm event was revised from 118mm to 130mm of precipitation in 24 hours. From there, the plant specific conditions and requirements were assessed.

The GoldSim model was replaced at the end of 2014. A new, probabilistic, water balance model for the Vaal River Region is being subsequently used. The model (the February 2017 water balance update was sighted) includes evaporation, rainfall, seepage, interstitial water and no allowable discharges in the calculations. The model is updated monthly using actual rainfall, slurry feed rates and standard assumptions and actual measurements for interstitial water, seepage, and evaporation. It includes seepage and evaporation as part of the Losses and Entrainment volume in the inputs.

The return water dams are run at maximum operating levels to cater for power failures (80% and 28% of total capacity). This was confirmed in graphs in the procedure “Surface water management procedure for Vaal River and Mine Waste Solution for

Environmental Department, Vaal River Tailings Management, the ISO procedure. Thus no emergency power is required to prevent overtopping of the return water dams.

Rainfall is measured daily on the plant and via weather stations and rain gauges on the TSFs.

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**
 not in compliance with

Basis for this Finding/Deficiencies Identified:

The West Gold Plant uses an on-line Cynoprobe cyanide analyser producing a result every 20 minutes. The results are logged into an electronic database. The sample is automatically taken from the Residue tank in the plant. This data is sent electronically to the AGA Remote Operations Control (ROC) system which monitors the instrumentation outputs of all AGA plants, and which is stored in a data collector. Control charts are compiled for performance parameters. Upper limits and lower limits for performance are set. Notification emails and text messages are sent in an escalation sequence to plant staff when the upper or lower limit is breached. A recent addition to the control parameters is to include when the Cynoprobe values are unchanged for 8 hours or more. The monthly WAD (Weak Acid Dissociable) cyanide data for the three years since certification starting 2014 to date was reviewed.

-2014: One exceedance of 55 mg/l WAD cyanide was identified on 16 Nov 2014. The incident was investigated and corrective actions applied.

-2015: No exceedance recorded for the year.

-2016: The WAD cyanide appears to be less than 50 mg/l but the Cynoprobe was not functioning for a significant number of periods.

-2017: The WAD cyanide appears to be less than 50 mg/l but Cynoprobe was not functioning for a significant number of periods

The plant takes two hourly manual free cyanide titrations in support of the cyanoprobe on-line measurements. In reviewing the periods when the cyanoprobe was off-line, indications are that, apart from isolated individual spikes relating to control equipment malfunctions, the operation was functioning well below 50 mg/l WAD cyanide. The Production Metallurgist reports that long term correlations between WAD and free cyanide suggest that there is no more than 6mg/l difference between the WAD and Free cyanide levels and WAD cyanide levels very rarely exceed 30 mg/l WAD cyanide. Sampling of the manual titration results confirm these statements. It is therefore concluded that WAD cyanide levels in 2016 and 2017 did not exceed the 50 mg/l limit.

The procedure, "When high cyanide levels are measured in residue", includes actions when cyanide levels reach 30, 40 and 50 ppm (parts per million) WAD cyanide, as well



as manual titration frequency (normal, abnormal and emergency) and Cyanoprobe maintenance frequency.

The TSF daily inspection reports include an item on wildlife mortalities and the inspections were sampled over the three year period since the last recertification and no wildlife mortality incidents on the Vaal River TSFs were recorded. It is thus concluded that maintaining a WAD cyanide concentration of 50 mg/l or less in open water is effective in preventing significant wildlife mortalities.

Standard of Practice 4.5: Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.5**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

There are no direct discharges to surface water from these cyanide facilities. Two legal discharge points exist that are allowed to discharge seepage water to the Vaal River. However, these discharges are not from any of the cyanide facilities and do not form part of the scope of the audit. Seepage from the tailings facilities are intercepted by a system of trenches and boreholes and this water is pumped to storage facilities before being used in the gold plants (including West Gold Plant) for the Vaal River area as process water. This includes water from the Eye Dam sump and the Boat Club sump. Monitoring is conducted upstream and downstream of the gold plants and associated infrastructure on the Vaal River and the Schoon Spruit (Schoon River).

The downstream values for the Vaal River are sampled monthly and results between 2014 and to date are below limits of detection of 0.02 mg/l WAD cyanide. The downstream values for the Schoon Spruit between 2014 and to date are also below limits of detection of 0.02 mg/l WAD cyanide.

Standard of Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.6**

 not in compliance with

Basis for this Finding/Deficiencies Identified



Mining processing plants' process water is the only beneficial use of groundwater in the immediate area and all other water for domestic and livestock use is supplied in pipes by the Midvaal Water Company.

Various water management measures to manage seepage to protect the beneficial uses of ground water beneath and/or immediately down gradient of the operation are in place and they include:- lining of trenches for the transportation of process water; boreholes adjacent to Vaal River to intercept seepage from TSF's; sub surface perforated pipelines that discharges into the Boat Club sump before being pumped to the plants; and various areas of woodland adjacent to TSF's planted to undertake phytoremediation of shallow groundwater.

The plant is equipped with bunds, concrete lined trenches and tarred and paved surfaces, and lined containment dams to assist with managing seepage to protect beneficiary use of groundwater.

There is no backfill operation associated with the plant in operation.

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**

not in compliance with

Basis for this Finding/Deficiencies Identified:

The reagent strength cyanide tanks are placed on legs inside a concreted bund. The pre leach and CIL tanks are placed on impervious solid concrete foundations and the original drawings were sighted and confirmed during the 2007 certification audit. All other solution tanks are placed on impervious solid concrete bases. The WAFU(West Acid Float & Uranium Plant) residue tanks are conical tanks on steel legs.

It was confirmed during the site visit that all tanks, including the WAFU tanks are placed inside competent secondary containment. Within the Gold Plant, all reagent strength pipelines are within secondary containment launders or inside the cyanide storage bund. Slurry pipelines containing cyanide are placed above concreted and tarred surfaces, running down into the pollution control dams, from where it can be returned to the process. All unlined slurry pipelines are part of the SAP PMS system and the Pipeline Patrol system. Pipelines have been replaced with HDPE-lined steel pipelines as an additional spill prevention measure.

The secondary containment areas for the liquid cyanide storage tanks and the leach tanks are constructed of concrete. The bund calculations for the cyanide storage tank were as follows:- tank volume = 178 m³, bund volume = 180 m³ (101%). However, both tanks are only operated at 85% of their physical capacity therefore giving a volume of 151 m³ (the bund volume is therefore 119%). The largest Pre-leach tank is 1,378 m³ with the banded area being 596 m³. The plant is equipped with two containment dams. The interconnected dams are linked to all the bunds in the plant and in cases where there is a



shortfall in bund volume, these dams are used to make up the required 110% of the largest tank in the respective bunds. In the event of a tank leak, the material will flow via lined trenches to the pollution control dams. Each Dam has a capacity of 3,300 m³ giving a total capacity of 6,600m³ which is more than sufficient to meet the Code requirement.

A high level alarm is installed on the containment dams. The alarm is connected to the SCADA. A pop-up will come up on SCADA when the level of Dam B reaches 20%, the high level alarm will be activated when the Dam B level reaches 65%. During high rainfall, if the containment dam were to reach this level and a tank failed, any over flow would go to the Queen Mary Reservoir connected to the overflow of the containment dams. The Queen Mary dam is much larger than the pollution control dams and is maintained empty. The WAFU (residue pump station outside the plant boundary) bund capacity is 699 m³ and largest tank is 675m³ and only operated at 90% maximum operating level (607.5m³), giving 115%. The functional specifications including tank level alarms were sighted and confirmed.

All cyanide-containing slurry and solution pipelines are installed over bunds, concreted surfaces with all spillages outside a bunded area being routed to the lined containment dams or back into the bunds. The slurry pipelines were replaced with HDPE-lined steel pipelines as a spill prevention measure. It was confirmed during interview with PMS Engineering Planner that no leaks had been reported since the installation. Thickness testing is done on the remaining steel pipelines and managed via the SAP PMS. Pipe patrols are conducted twice per day to identify any leaks timeously.

One area where the slurry lines cross the 9 shaft bridge (Kopanang bridge) was identified as a potential risk. Special protection measures include the lining of all lines, before and after, crossing the bridge and an associated containment paddock.

Cyanide tanks and pipelines are manufactured from materials compatible with cyanide and high pH conditions, as per engineering design specifications in Chapter 46 of the South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines document.

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**
 not in compliance with

Basis for this Finding/Deficiencies Identified:

There were no new additions or extensions to the process plant. Detailed Quality Control/Quality Assurance documentation is available for the TSFs and for the plant and has been audited previously.



AngloGold Ashanti has in place an on-going SIMM (Structural Integrity Management Monitoring) system report which is a corporate risk monitoring system for plant structures) for all mines which regularly reviews and re-prioritises all structures and recommends repairs and maintenance. This replaces the need to keep original QA/QC records and covers where records are not available.

The SIMM report of the West Gold Plant for December 2015 by Principal Engineer (Civil, Structural and Infrastructure), V Prasada Rthalla stated, "...The condition of the plant has been improved considerably due to repairs and maintenance compared to that of June 2013 inspection. The condition of the plant as a whole can generally be inferred to be satisfactory except for ball mill platforms and elution lower area..." The SIMM report of the West Gold Plant, dated February 2017 prepared by Civil and Structural Engineer Werner Reynecke, Pr. Eng. reported on the cyanide facilities, only identifying corrosion on the lower level of the elution building as an issue. The asset integrity review reports of 2015, 2016 and 2017 demonstrate an ongoing priority-based review of repairs and maintenance of structural assets.

The Geotechnical Engineer (AGA South Africa Region Surface Operations) concluded that, "...The TSF's are operated in accordance with the Code of Practice. I conclude that the Vaal River TSF's are stable and possess good factors of safety against major slope failure..." The Senior Manager: Geotechnical Engineering, AngloGold Ashanti concluded, "...VRO(Vaal River Operations) TSFs are generally in good condition and are well managed..."

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 **Standard of Practice 4.9**

not in compliance with

Basis for this Finding/Deficiencies Identified:

Procedures for environmental monitoring (including sample preservation and chain of custody procedures and Code compliant sampling sheets) of surface water and borehole water, developed by A MINTEK cyanide specialist chemist originally. These were subsequently reviewed by the Vaal River TSF Production Metallurgist, Production Engineer and Full-time Safety Representative. Boreholes are placed and sampled upstream and downstream of the plant, The Vaal River and Schoon Spruit (Stream) are sampled up and downstream of the mine. Boreholes are sampled twice yearly, the Vaal River and Schoon Spruit are sampled monthly, wildlife is monitored daily, water dams are sampled monthly and plant boreholes are sampled twice per year. The auditors deem the frequency with which the surface water and groundwater is monitored to be adequate to characterise the medium being monitored and identify any changes in a timely manner.



5. DECOMMISSIONING: *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**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

A decommissioning procedure is in place which includes a cyanide decommissioning schedule for actions to be taken 12, 6 and 3 months prior to decommissioning of cyanide facilities and spells out time sequence and timing of events involved in cyanide decommissioning.

. Use would also be made of the South Africa Region Metallurgy (SARM), Cyanide Code Implementation Guidelines, which describe the process to be followed during decommissioning in Chapter 38: Basic Demolition Practices. The decommissioning procedure was revised in 2016 and the next revision date is May 2019.

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 environmental liability estimates accounting 2016, West Gold Plant document, which contained provisions to fully fund third party implementation of the cyanide-related decommissioning measures identified in its site decommissioning plan, was reviewed. The estimates include line item estimates which are:- decontamination of storage and dosing system, decontamination of SASOL tanker, chemical cleaning of storages, and associated medicals, induction, screening training and travel. Closure liabilities are updated annually to take account of any changes at the facilities. The AngloGold Environmental Rehabilitation Trust Annual Financial Statements 2015 were sighted which were signed off by a Director of Nexia SAB & T (Auditors) on 30 March



2016. The financial assurance mechanism is sufficient to cover cyanide-related decommissioning activities.

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 West Gold Plant has 50 Cyanide Safe Handling and Emergency Procedures, 24 Environmental Management and Protection Procedures, 12 Emergency Preparedness Procedures, and 16 General Procedures, supported by 11 TSF contractor operating and management procedures and a mandatory Code of Practice covering TSF operation. All procedures require the appropriate use of Personal Protective Equipment (PPE).

Annual Vaal River Operations Tailings Facilities Audit Reports, by the AngloGold Ashanti Senior Manager: Geotechnical Engineering, were sighted with the conclusion, "...VRO TSF is generally in good condition and is well managed..." On-going issues were identified, prioritised and actioned in regular TSF meetings. The Geotechnical Engineer (AGA South Africa Region Surface Operations) concluding in a note for the record that, "... The TSF's are operated in accordance with the Code of Practice. I conclude that the Vaal River TSF's are stable and possess good factors of safety against major slope failure...".

Routine daily, weekly, monthly and quarterly inspection reports (including operational inspections, SAP Planned Maintenance System (PMS) inspections, and Structural Integrity Management Monitoring (SIMM) inspections, legal inspections, and checklists for proactive and reactive management were sampled to confirm the effectiveness of systems. At the TSFs, Pipeline Patrols are undertaken for each shift (3 shifts per day) to spot any leaks and take appropriate action as detailed in the Pipeline Failure Procedure. The strategy to reduce the incidence of pipe failures and leaks is as per the previous re-certification audit and is in the process of being implemented. The note, 'Pipeline Replacement Strategy' by the Production Engineer indicates the scheduling for the replacement of steel pipes with HDPE-lined steel pipes, as well as the progress of the replacement of the seven slurry lines with the HDPE-lined pipes. The note confirmed the historical strategy to rotate pipes based on thickness tests results. It includes the "Slurry Pipelines - Lined vs. unlined" discussion, indicating length diagrams. The Wonderware system (the SCADA control room system) shows in real time the operation of the pumps



so that any issues can be seen immediately. TSF freeboard is surveyed on a monthly basis (Cyclone West Extension dam), and the other dams are surveyed on a quarterly basis. The return water dams are equipped with ultrasonic level detectors and use is made of telemetry to the central control room to record data. The pumps are controlled either manually or automatically. There is a probabilistic water balance in place, and no scenario has been identified where the need has been highlighted to shut down plant to prevent overtopping. Proactive planning and management of containment dams, dam levels and normal and abnormal conditions contributes to reduction of risk and the unlikely need to temporarily cease plant operations under abnormal precipitation events. The plant is designed to contain any spillages in the anti-pollution ponds and thus no back up power is required in case of power failures.

A SAP planned maintenance system (PMS) is in place including both the plant and TSFs and was reviewed and sampled electronically for all equipment over the three year period since the last recertification. Operational inspections conducted include: daily inspections; cyanide storage facility daily inspections; Legal two weekly inspections; and Shift foreman's daily inspections. Tank thickness testing is done on a planned basis for all high and low strength cyanide tanks. TSF inspections are carried out shiftly, daily, monthly, quarterly and annually. Weekly, monthly, quarterly and yearly inspections are scheduled on the SAP PMS system. A change management procedure covering health, safety and environment is in place but no change exercises were carried out involved cyanide since the previous recertification audit.

Worker input on health and safety and procedures comes through monthly Health & Safety meetings, including the Health and Safety Representatives. Further worker input comes via mock cyanide drills, Green Area Meetings, One Team Meetings (OTMs) and involvement in risk assessment teams.

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**

not in compliance with

Basis for this Finding/Deficiencies Identified:

The pH of the slurry is controlled automatically at 10.0 and monitored by the ROC. The pH level is interlocked with the cyanide pumps so that when the pH dips to 9.7, the cyanide pumps will stop and will only restart again at a pH of 10.0.

The plant uses 3 Fixed Polytron HCN gas monitors at the cyanide off-loading area, cyanide dosing point and the residue tank, 6 PAC 7000 personal HCN monitors and 3 X-am 5000 personal HCN monitors.

The monitor alarm settings were confirmed during an interview with the Occupational Hygienist as being set to alarm at 4.7 parts per million continuously over an 8-hour

period and first alarm at 7.5 ppm HCN and then at 10 ppm on an instantaneous basis. Evidence of on-going maintenance of the monitors was sighted. Calibration records were sighted for the past 12 months for all monitors. Quarterly calibration frequency exceeds manufacturer's requirements. Procedures require appropriate use of Personal Protective Equipment based upon risk assessments and monitor readings.

The use of warning signs throughout the operation was confirmed during the site inspection. The signage included advising workers that cyanide is present, and that smoking, open flames and eating and drinking are not allowed, and that, if necessary, suitable personal protective equipment must be worn at the Cyanide offloading and cyanide dosing areas. Signs are placed at TSF sides and at the penstock prohibiting the drinking of the water, instructing on what PPE must be worn, prohibiting unauthorised entry and no swimming. Signage was observed on slurry lines at the bridge crossing and other road crossings where the public are passing, advising that poisonous water is present and indicating flow direction.

The use of safety showers and low pressure eye wash stations at the identified strategic positions where cyanide is used was confirmed during site inspections. The placement of powder fire extinguishers at strategic areas in the plant was also confirmed. Fire extinguisher inspections are done monthly. On-going inspections and checks are also used to monitor and check facilities and emergency response equipment functioning and checklists covering three years since the last certification were sampled.

It was confirmed during the site inspection that unloading storage and mixing, and process tanks are labelled and colour coded as per the plant standards. Reagent strength cyanide lines painted dark violet and cyanide tanks signal red with 400mm dark violet bands. The leach and CIL tanks and slimes pipes are painted light admiralty grey as per the West Gold Plant colour coding board. All plant staff are made aware that slimes could contain cyanide during the induction sessions.

MSDSs (Material Safety Data Sheets) and first aid information is available in English. Chapter 42 of the South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines includes information on cyanide first aid and emergency procedures and the Chapter availability was confirmed in the emergency trailer and first aid cabins. Formal employee interviews were used to check awareness and sensitivity to health and safety measures and the response from employees and contractors alike, was found to be appropriate and acceptable. Accident and incident reporting and investigation procedures, based upon the AGA safety reporting requirements, were 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**
 not in compliance with



Basis for this Finding/Deficiencies Identified:

There is a West Gold Emergency Preparedness Plan (EPP) in place and this is supported by the Vaal River Tailings Emergency Preparedness Plan, the Mandatory Code of Practice on Emergency Preparedness and Response, and the FAT (Fraser Alexander Tailings) Emergency Preparedness and Response Planning Guidelines. Fully equipped first aid rooms were sighted at the first aid station (opposite the offices), the Cyanide Storage first aid station, and the at the top of Leach, all of which contain potable water, oxygen, and antidote kits in fridges. The fully equipped (except for antidote kit which is available in a nearby fridge) emergency trailer is parked adjacent to the Plant's offices. All Foremen and Senior Operators have radios for communication. ER24 (ambulance and paramedics service providers) is part of the emergency response for AngloGold Ashanti. The ER24 headquarters for the Vaal River area is located at Nologwa Gold Plant. ER 24's 24 hour Emergency Response have oxygen, resuscitator, radio and qualified personnel available to assist with any cyanide exposure incident. The nearby West Vaal Hospital (AGA-dedicated hospital) has water (outside shower), oxygen, antidote kits, and resuscitator available to accept patients exposed to cyanide at West Gold plant. The Hospital staff are specifically trained to handle cyanide emergencies. This was verified during the hospital site visit.

Daily inspection checklists including the cyanide antidote kits, medical oxygen cylinders, safety showers and eye washes, plant cyanide first aid boxes and the cyanide emergency trailer were sighted and sampled in 2015 and 2017. At the West Vaal Hospital Casualty Ward TriPac and Hypo Solution were observed kept in a fridge.

The Plant Emergency Response Team, consisting of Cyanide Appointees, is available 24 hours per day for cyanide emergency response. All Cyanide Appointees are fully trained in cyanide emergency response and first aid.

Vaal River Tailings does not have cyanide emergency equipment or a cyanide emergency response team. In the event of an emergency at the TSF, the Shift Forman will be immediately informed who will then call ER24 and, at the same time, inform the Tailings Production Metallurgist who then informs the nearest Plant Production Metallurgist who will send their Emergency Response Team. The Shift Foreman/ Tailings Production Metallurgist will also inform the Occupational Health Doctor and Occupational Health Sister. A Procedure for Notification of Cyanide Exposures to Vaal River Tailings Employees details that the ER24 emergency ambulance service will be called, in the event of a cyanide exposure, and the patient will be taken to the West Vaal hospital for treatment.

Man down drills at the plant and the TSFs are used to assure that the medical facility is competent and equipped to handle emergencies. Hospital staff are specifically trained to handle cyanide emergencies.

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 **Standard of Practice 7.1**
 - not in compliance with

Basis for this Finding/Deficiencies Identified:

There is a West Gold Plant Emergency Response Plan in place and the Plan includes the following: Statement of Strategic Intent; Management Roles and Responsibilities; Plan Maintenance and Change Management; Escalation Points and Incident Levels; Plan Training and Testing; Emergency Scenario Response Plan; Plant Process Description; Crisis Management Plan; and Command Centres. The Mandatory Code of Practice on Emergency Preparedness and Response Plan includes the Vaal River Tailings Emergency Preparedness Plan. The TSF Plan includes Emergency Situations listed under Situation A, Situation B, Situation C Situation D. A response table covers various aspects including tailings dam wall failure under Level A Evacuation. These preparations are regularly reviewed in the light of changes, mock drill learning points and employee feedback.

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

X in full compliance with

- The operation is**
- in substantial compliance with **Standard of Practice 7.2**
 - not in compliance with

Basis for this Finding/Deficiencies Identified:

The plant conducts Monthly Health and Safety Meetings, which are attended by the Plant Management, Section Safety representatives and Full Time Safety representatives who represent the workers. These meetings include discussions on any changes to cyanide emergency response planning

Emergency drills are used to involve the workforce in the response planning process and drill reports indicated evaluation and feedback. The community is not directly involved in the Plan but is informed on its contents during dialogue sessions. Drills are used to involve hospital and ambulance staff in emergency response planning processes.

A Cyanide Management Brochure for Processing Plants explaining:- what Cyanide is, its effects on people and the environment, reasons for use and ICMI certification has been produced. This brochure is distributed electronically or in paper format on request. Brochures were distributed during community meetings and at taxi rank visitations in 2016.



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**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

The Emergency Response Plan details clear duties, roles, training and responsibilities for the various emergency scenarios. The emergency equipment inventory was checked and site inspections confirmed availability and readiness. 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. Periodic drills involving internal and external stakeholders ensure that roles and responsibilities are understood and clearly implemented.

Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.4**

 not in compliance with

Basis for this Finding/Deficiencies Identified:

The Emergency Preparedness Plan includes details for appropriate emergency notification and reporting (internal and external) and the call-out procedure and contact information lists which are updated regularly. Furthermore, emergency contact details are also listed on noticeboards throughout the plant. Internal and external communication (including the Media) is dealt with in the Plan and via specific procedures which only permit the General Manager to communicate with the Media.

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 **Standard of Practice 7.5**

 not in compliance with



SHE issues in the event of cyanide poisoning, first aid equipment for cyanide, First Aid training, emergency response chain, warning alarm systems, emergency response by control room, buddy system requirements, cyanide PPE requirements and use, cyanide PPE for hospitals, gas detection instruments, cyanide first aid and antidote kit (regulation 24.8.2), contents of medical aid kit details, cyanide exposure and symptoms, consequence of cyanide poisoning, generation of HCN, first aid procedure for cyanide poisoning, cyanide patient to be transported to the hospital directly, and emergency response in case of incident including taking TriPac and Chapter 42 Medical Treatment Procedure (Cyanide Guidelines), in the ambulance transport to the hospital. Written tests are conducted for the induction and refreshers with a pass mark of 80%.

Contractors that spend more than 3 days on the plant or if the contractor is on the plant for less time but will perform high risk work, will receive the same Induction Training as the employees. Contractors that work less than 3 days on the plant (under direct supervision of a plant employee) will receive plant specific induction.

A training matrix is in place for all employees per plant/area showing the individuals and the various training modules including job specific training. The training matrix highlights the training employees have completed (green), where the training is due to expire within 3 months (yellow), and where the training is out of date (red). The permanent contractors, FAT and Cyclone Projects, who work on the Vaal River TSF keep their own training matrix. Inductions for various groups of people were sampled and reviewed. Training is done at Vaal River by qualified trainers. Confirmed that records of all training are retained electronically for at least the life of the plant (EduCos). Hard copy records per person per plant and per contractor are also kept for at least the life of the plant and archived in a container at the Metallurgy Central Training Centre.

Training records of interviewees were reviewed to sample record keeping of training and this was found to be accurate and complete.

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:

Workers are trained to perform their normal production tasks, including unloading, mixing, production and maintenance with minimum risk to worker health and safety and in a manner that prevents unplanned cyanide releases. The training matrix was observed that defines what training each worker is to receive based on their position and the tasks required of that position. The cyanide matrix covers all disciplines including Engineering (Maintenance), and Metallurgy (Plant Operations).



Sighted minimum generic standards for positions and sampled signed off standard for Plant Attendant. This standard is included in the live training matrix where site specific training requirements are detailed.

The training requirements of Senior Operator, West Gold, was sampled and included the following modules: Operations of Ore Receiving, Thickeners, Leach, Absorption, Elution. Modules also included basic cyanide first aid, AGA first aid, Metallurgy Induction, preparation for maintenance, PAC 7000 or Xam 5000, safety harness, SCBA, and Cyanide Appointee requirements.

The West Gold Plant Trainer is a Registered Assessor and Moderator, and has completed courses in Best Practice in Training, and Trainer Accountability.

It was confirmed that records of all training are retained electronically for at least the life of the plant (EduCos). Hard copy records per person per plant and per contractor are also kept for at least the life of the plant. Training records of interviewees were reviewed to sample record keeping of training and this was found to be accurate and complete. All hardcopy training records are archived in containers at the Metallurgy Training Centre.

TSF contractor. Fraser Alexander Tailings (FAT) have an issue-based risk index and a task inventory with 10 procedures which list all tasks required to perform the TSF operations. These Safe Work procedures are used as on-the-job training materials. Training is scheduled monthly and training schedules for 2015 to 2017 were reviewed. Copies of training records were sighted.

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 and contractors receive Basic Cyanide First Aid training during the induction training. Cyanide Appointees form the Emergency Response Team in each plant. The Cyanide Appointee training unit standard on cyanide releases covers basic first aid treatment for cyanide exposure, entering in confined spaces, cyanide neutralisation and spillage disposal. The training matrix also specifies training as per the Emergency Preparedness Plan (EPP).

Intermediate Cyanide First Aid is assessed every 12 months as part of the training for Cyanide Appointee and Off-loaders. Advanced Cyanide First Aid (including SCBA) is refreshed every 2 years. Fire Incident Command is refreshed every 2 years. Cyanide Appointee and Off-loading training is refreshed every year. In addition, Cyanide Emergency drills (covering man down and spills) are undertaken monthly.

It was confirmed that training and refresher training are up to date and accurate and complete in the training matrix. The West Vaal Hospital and ER24 staff receive cyanide first aid intermediate training and are assessed for competency. They are also involved in



drills for training purposes. It was confirmed that records of all training are retained electronically for at least the life of the plant (EduCos). All hardcopy training records are archived in containers at the Metallurgy Training Centre where the hardcopies are being scanned using ScanCo system from 2017. Drills are also attended by the Training Officer who reviews drill reports and training procedures and revises training when deficiencies are identified.

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:

Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide. A walk-about at the Taxi Rank and Spa shops at Wedela Township on 22 August 2016 involved members of the pipe patrol, the cyanide champion, and the Production Metallurgist Tailings, to inform community members about the Mines activities and raise cyanide awareness.

Members of the Community can raise any mine-related concerns (including cyanide) at the Vaal River and West Wits environmental Forums. Attendance lists sighted showed attendance by Community members, local businessman, Government Officials, and Councillors.

The minutes of the West Wits Operations Forum meeting held on 9 March 2017 in the municipal boardroom, Carletonville and the Vaal River Operation meeting held on 18 May 2017 at the Peacock Guesthouse, Stilfontein were also sighted. Minutes of a 15 July 2015 KOSH (Klerksdorp, Orkney, Stilfontein, Hartebeestfontein) meeting included the mention of presence of toxic chemicals on the TSF which was of interest to cattle owners. The meeting was held at the offices of Department of Mineral Resources (DMR), Klerksdorp.

A presentation to Umsizi (running the AGA Livestock Management Plan-LMP) dated May 2017 was sighted. The presentation detailed the LMP which was developed as a result of problems with free ranging livestock (e.g. accidents and drinking of contaminated water and destruction of veld). The initiative is aimed at the owners of livestock which might affect, or be affected by, the mining operations.

The AGA West Wits Fire Captain liaises with the Municipal Fire Department on a regular basis on all fire matters related to the mines (including, where appropriate, cyanide.) The AGA West Wits Fire Department is also a member of the Fire Protection



Association (FPA) where relevant topics are discussed. The Fire Captain also discusses emergency planning with neighbouring land owners to ensure there is a co-ordinated response. This includes the neighbouring game farm. Chemical HAZMAT, including cyanide truck accidents, are also discussed with the municipal fire department.

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 **Standard of Practice 9.2**
 not in compliance with

Basis for this Finding/Deficiencies Identified:

Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide. A walk-about at the Taxi Rank and Spa shops at Wedela Township on 22 August 2016 involved members of the pipe patrol, the cyanide champion, and the Production Metallurgist Tailings, to inform community members about the Mines activities and raise cyanide awareness.

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

X in full compliance with

- The operation is**
- in substantial compliance with **Standard of Practice 9.3**
 - not in compliance with

Basis for this Finding/Deficiencies Identified:

The Cyanide Management Brochure for Processing Plants explaining what cyanide and ICMI are, the possible effects on the environment, and reasons for its use was sighted. This brochure is available for distribution by the Plant either electronically or in paper form. This is displayed as a poster inside the plant. The majority of the community in the vicinity of the AGA Gold Plants in the Vaal River Region and West Wits Region are literate. The presentation to the taxi rank was done in the local languages (Xhosa and Sotho). The brochure is made available publically and is posted at the Vaal Reefs Supermarket and Take-A-Ways, the Orkney Library and has been made available at the Vaal Reefs Technical High School.

No cyanide exposure, hospitalisation or fatalities occurred or were reported in the last three years at either the TSF's or the Gold Plant. Any cyanide exposure is reported to the Department of Minerals within 14 days, when confirmed to be inhalation of poisonous gas. Fatalities are reported immediately.

An AGA Group-wide Workforce Management Reporting System (WMRS) is used as an electronic reporting platform for all safety and environmental incidents, inspections and deviations. Accidents are classified as Minor, Moderate, High, Major and Extreme and are reported to the national Department of Mineral Resources and the Department of Water Affairs and Exposure reports are available on the AngloGold Ashanti public web site.

The following were observed on the AGA website:

AGA Sustainability Report published 2016 - page 42 - reporting on ICMI certification for AngloGold Ashanti - report on incident Cocoruto in Brazil, p 46. Cyanide usage is reported on in the report. (<http://www.aga-reports.com/16/sdr>). The AGA Sustainability Report for 2014 - p 25 reporting on cyanide usage. 20 AGA cyanide plants are certified under the ICMI Cyanide Code. (<http://www.aga-reports.com/14/sdr/>). The AGA Sustainability Report for 2015 - p 38 mentioning 4 sites were recertified, p 39 reporting on 2 Obuasi incidents, and one Vaal River 2015 incident when the slurry pipeline failed at Kopanang resulting in a spillage to the storm water trench. Cyanide Code and cyanide consumption were covered (<http://www.aga-reports.com/15/sdr/home>). No cyanide exposures, hospitalisation or fatalities occurred or were reported during the period since the last certification.

