
FINAL COMPLETION REPORT

Harmony **Moab Khotsong Operations** **Noligwa Gold Plant** **South Africa**

Introduction

This Final Completion Report presents the evidence to support the successful implementation of the Corrective Action Plan, to correct the deficiencies identified in the recertification audit held from 10th – 14th February 2020, to enable the Substantial Compliance to advance to a Full Compliance.

Corrective Action Plan - 1

Principle 4 – OPERATIONS - Manage cyanide process solutions and waste streams to protect human health and the environment.

Standard of Practice 4.3 Implement a comprehensive water management program to protect against unintentional releases.

Deficiencies

- The Environmental Manager reported that procedure ISO 14001/4.6/00/2014/8 and procedure ISO 14001/4.4.6/01/2015(1) PCD are AngloGold Ashanti (AGA) procedures and could only be used by Harmony for one year from the purchase date (1 July 2018.) He further reported that no Harmony procedures were in place to replace the AGA procedures once the one year transitional period had expired. Thus, it is not clear what procedure, process or system, would be used to implement the water balance and prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment.
- Whilst there may be informal practices in place to implement this currently, these are person-driven and need to be formalised to ensure that the appropriate information is incorporated into the Harmony Corporate Memory for continuity and training purposes.

Corrective Actions

- Review the current practices being used on the pond and water bodies by the Noligwa plant to prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment.
- Identify if these practices are appropriate for Noligwa Gold Plant and if



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- they are optimally documented for operational, training and Planned Task Observation purposes.
- Write or amend procedures, according to systems requirements, that ensures that the water balance is being utilised to prevent overtopping of ponds and impoundments, and unplanned discharge of cyanide solutions to the environment.

Evidence Sighted by the Auditors

- Since the publication of the Noligwa Corrective Action Plan, there has been formal confirmation of the sale of the remaining AngloGold Ashanti (AGA) South Africa and Mine Waste Solutions assets to the Harmony Gold Mining Company. Those assets include the AngloGold Ashanti procedures covering water management in the Vaal River area (which includes that of the Noligwa Gold Plant).
- Subsequently, Harmony has reviewed, revised and re-published procedures with Harmony and Contractor document headings and controls. These procedures include the Harmony Moab Khotsong Operations Environmental Water Key Performance Indicators Procedure (ISO 14001:8.1/MHO/002018). This procedure is based upon the previously functioning AGA water management procedures which were found previously to be Cyanide Code compliant.
- Having studied the procedure above, the Lead Auditor is satisfied that the procedure to be used on the pond and water bodies by the Noligwa plant for water balance purposes, and to prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment, is sufficient and Code compliant. Furthermore, they are deemed appropriate for operational, training and Planned Task Observation purposes.

Corrective Action Plan - 2

Principle 4 – Operations: manage cyanide process solutions and waste streams to protect human health and the environment.

Standard of Practice 4.9 Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

Deficiencies

- Environmental sampling, including borehole and surface water samples for cyanide speciation, is done by an external consultant and sent to an external certified laboratory for processing.
The Environmental Manager reported that the external consultant had a process, but no written procedure, covering cyanide sampling tasks. The Cyanide Code Mining audit protocol specifically asks for written standard procedures.



The lack of a procedure in place for the external consultant taking samples made it difficult to make: -

- o a judgement on whether appropriate measures were being taken to ensure the integrity and accuracy of any cyanide samples taken;
- o Assess whether external cyanide monitoring frequencies were adequate to characterise the medium being monitored and to identify changes in a timely manner; and
- o Further, specifically, relating to procedural or formal responses to temporarily elevated cyanide levels in two monitoring quarters (i.e. relating to trigger for sample repeats to verify variance accuracy) reported in the Annual Water Quality Monitoring Report for the Moab Khotsong Mining Operations: 2018/2019 Monitoring Period Report Version – Final 08 January 2020.

Corrective Actions

- Review the current process used by the external consultant for the cyanide sampling (under normal, abnormal and emergency conditions), preservation and chain of custody tasks.
- Check that these tasks comply fully with the Cyanide Code requirements itemised in Standards of Practice 4.9.1 to 4.9.4 and 4.9.7.
- Ensure that an appropriate and Code Compliant procedure is written to ensure that the external contractor takes cyanide samples and delivers them to the external laboratory according to Cyanide Code requirements.

Evidence sighted by Auditors

- The following documents were sighted and reviewed: - The Harmony Moab Khotsong Operations Environmental Stormwater Sampling Operating Procedure (ISO 14001:8.1/MHO/00/20180); the GCS Groundwater and Surface Water Sampling Procedures for Moab Khotsong (Final Version, dated 19 November 2020); and the Harmony Moab Khotsong Operations: Noligwa Plant Management Responses in the case of Elevated Cyanide Levels in Samples Procedure (ISO 14001: NGP/00/2020).
- The review indicated that the Stormwater Sampling Operating procedure clearly identifies the importance of clean and dirty water management and the roles and responsibilities and management and sampling by the Business Units in the area. The surface and groundwater sampling locations are also clearly identified, as is the frequency of sampling. The frequency of sampling is deemed adequate for Code compliance purposes.
- The GCS (contractor) Groundwater and Surface Water Sampling



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- Procedures for Moab Khotsong is a detailed document on ground and
- surface water sampling methodology, including cyanide sample analysis, cyanide sample preservation, quality control, and chain of custody.
 - The Harmony Moab Khotsong Operations: Noligwa Plant Management Responses in the case of Elevated Cyanide Levels in Samples Procedure, includes a flow chart on actions to be taken if elevated levels of cyanide are detected in ground or surface water samples. This includes repeat sampling and investigation of causes.

Conclusion

The Lead Auditor is satisfied that the appropriate reviews, revisions and corrective actions taken, meet the requirements of the corrective action plans and thus enable substantial compliance in the Operations Practices to be revised to Full Compliance.



Arend Hoogervorst
Lead Auditor

Date: 19th December 2020

