

**CORRECTIVE ACTION COMPLETION
REPORT
ICMC Audits**

Control No.: GSBPL-ICMC-CAR-03

Date issued: Extension Provided by ICMI until 31 December 2010

Introduction:

This Corrective Action Completion Report presents the evidence to support the successful implementation of the GSBPL-ICMC-CAR-03 to correct the deficiency identified in the ICMI Certification Audit of the Golden Star (Bogoso/Prestea) Limited (GSBPL) mine, conducted 12 to 16 January 2009.

ICMC Standard of Practice Section Reference: 4.3(4).

Description of Deficiency:

The tailings storage facility (TSF) design engineer (Knight Piésold Consulting) indicated in its January 2009 quarterly inspection report regarding TSF II, that the supernatant ponds in cells 1, 2 and 2A remain larger than recommended and need to be reduced. Additionally, the report noted that beach widths were insufficient because of high pond levels, and recommended that an emergency spillway be constructed between Cell 2 and 2A to reduce the risk of overtopping. The large supernatant ponds and narrow beaches are a result of problems GSBPL has been experiencing with its cyanide detoxification plant.

Corrective Action Required (describe/attach supplemental information as necessary):

Provide documentation verifying that the water management issues identified in the January 2009 Knight Piésold Consulting quarterly inspection report, noted above, have been rectified and that the recommendations made in the report have been implemented. Additionally, provide evidence that the cyanide detoxification plant has been re-commissioned (or an alternate treatment system has been commissioned) and is capable of effectively reducing cyanide levels to acceptable discharge standards at the design throughput capacity (400 cubic meters per hour).

Corrective Action:

GSBPL has implemented a strategy that addresses the water management issues associated with TSF II identified by Knight Piésold in January 2009. This has included a combination of engineering works to increase the available freeboard of the tailings facility, providing more capacity, as well as construction of a downstream buttress and toe drain (Embankment 11) and shear key (Embankment 12) to increase the factor of safety of the facility. A spillway has also been constructed between TSF II (Cell 1/2) and TSF II (Cell

2a) to prevent overtopping. GSBPL has also been actively removing water from TSF II (Cells 2 and 2a), initially through pumping water into TSF I and then to TSF II (Cell 3) for plant use. In October 2010, EPA Ghana issued a temporary discharge permit for operation of a mixing reactor, and since October, GSBPL has also been discharging water (approximately 3,000 m³/day) from TSF II to the receiving environment. The discharge permit requires GSBPL to install a P2W Water Treatment Plant within the permit period which expires on February 20, 2011. Pilot tests for the proposed, permanent water treatment plant were conducted in early 2010 and a letter of intent for installation and commissioning the plant was signed between the supplier and GSBPL in July 2010. GSBPL anticipates that the new treatment plant will be installed and fully commissioned by early 2011.

In November 2010 Knight Piésold reported that the total and operational freeboard is being maintained in accordance with the statutory and International Best Practice Guidelines through the increase in embankment heights on all those cells where rising water levels were of concern. They also reported that the design and construction on the embankments of Cell 2A are now much more robust and are able to cope with excess water and high phreatic surfaces. Despite the large pond and the proximity of the pond to the embankments, Knight Piésold indicates that the revised embankment design has resulted in increased factors of safety against slope failure.

Although it will take at least one more year to remove excess water to the required level which was recommended during the initial design, the water management issues identified in January 2009 are now being effectively managed. In December 2010, Knight Piesold reviewed the water balance and, based on current operating conditions and average climatic conditions, predicted there will be no net rise in water level until May 2011. Knight Piésold therefore considers that no additional stresses are likely to be placed upon the confining embankments in that time as long as the mixing reactor/reclaim are maintained at the same levels as currently reported.

With the current use of the mixing reactor permitted until late February 2010, the installation and commissioning of the new water treatment plant in early 2011 and additional measures and changes proposed for 2011 (installation of evaporation canons and possible reduction in oxide tails) the water balance is now considered to be under control.

Evidence Provided to Verify Completion of Corrective Action:

- Photographs showing stability works at Embankment 11, installation of toe drain at Embankment 11, Embankment raises on TSF II and installed spillway between Cells 1/2 and 2a;
- Request letter to EPA Ghana, dated 16 March 2010 for approval to mix TSF II water with pit water from Marlu/Bogo North and discharge into the environment;
- Knight Piésold Technical Memorandum, dated 16 April 2010, regarding Bogoso-Cell 2a Embankment 11 New Toe Drain Design;
- Knight Piésold letter dated 23 June 2010, regarding Bogoso TSF II (Cells 1, 2 and 2a) Emergency Construction/Water Management Issues, that describes the recent embankment raises works;
- Agreement dated July 28, 2010 between P2W and GSBPL for P2W to supply and install a water treatment plant;

- A copy of the analytical results of the P2W water treatment plant pilot test conducted at the site in January/February 2010;
- A copy of the Temporary Grant Permit issued by Ghana EPA on 21 October 2010 allowing discharge from the mixing reactor and stating requirement for construction of permanent 2PW Water Treatment Plant;
- Analytical results (CN-Free concentrations) for period 1 November to 30 November for discharges from Marsh 1 and Marsh 2 (EPA compliance point to the receiving environment);
- Volume of water removed from TSF II since 21 May 2010;
- Knight Piésold letter dated 30 November 2010, regarding Bogoso TSF – ICMC Corrective Action Completion Status Report GSBPL-CAR-03; and
- Knight Piésold clarification letter dated 13 December 2010, regarding Bogoso TSF – ICMC Corrective Action Completion Status Report GSBPL-CAR-03.

Copies of these documents will be retained in GeoEngineers' internal project records.

Closure Verified:



Lead Auditor: John T. Lambert

Date: 24 December 2010