

Corrective Action Completion Report

**Golden Star (Wassa) Limited
Wassa Mine, Ghana**

(A Golden Star Resources Ltd., Operation)

Wassa
Name of Mine

November 12, 2013
Date



**CORRECTIVE ACTION REQUEST
ICMC Audit – Wassa Mine**

Control No.:
GSWL-ICMC-CAR-01

Date issued: March 1, 2013

ICMC Standard of Practice Section Reference: 4.1(7)

Introduction: This Corrective Action Completion Report presents the evidence to support the successful implementation of the **GSWL-ICMC-CAR-01** to correct the deficiency identified in the ICMC Certification Audit of the Wassa Mine, operated by Golden Star (Wassa) Ltd. (GSWL), a Golden Star Resources Ltd. company. The audit was conducted September 3 through 7, 2012.

Description of Deficiency: During the field inspection conducted during the onsite audit, the auditor observed several issues requiring attention, listed below.

- Areas with damaged concrete requiring repair were observed on the floor of the concrete containment bund at the carbon-in-leach (CIL) tank farm. Other areas of the CIL bund were full of slurry due to ongoing maintenance at the plant (i.e., the CIL Tank 3 agitator was being replaced). Therefore, the auditor could not evaluate the physical integrity of the entire containment structure during this field audit. Additionally, a valved drainpipe, which allows potential spillage from the nearby, overhead Pipe Reactor Feed (PRF) pipeline to flow into the CIL bund for secondary containment was full of debris and required cleanout and modifications to prevent future clogging.
- The containment for the acid wash and elution circuit was in poor condition. GSWL recently constructed a new containment for the acid wash circuit, but had not yet relocated the process facilities to the new containment. In addition to the poor condition of this containment, the bund contained miscellaneous trash and debris, which required removal. GSWL must take positive measures to keep all secondary containments clean to ensure that adequate capacity is available and to assist with visual inspections of the concrete.

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

To achieve full compliance under this Standard of Practice, GSWL must complete the following corrective actions:

- Remove water, slurry and sediment from the concrete containments

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provided for the CIL tanks and the acid wash and elution circuit. Additionally, remove equipment parts, trash and debris from the acid wash and elution circuit bund system. This action is necessary to ensure that the full capacity of the containment system is available and so that GSWL can visually inspect the physical integrity of the containment system.

- Repair the damaged concrete on the floor of the concrete containment bund at the CIL tank farm.
- Cleanout the valved drainpipe at the CIL containment bund and provide an inlet box with a grated cover (or similar structure) to prevent trash and debris from entering and clogging the pipe.

Evidence Required for Verification of Corrective Action Completion:

- Photographs demonstrating completion of the requested Corrective Actions, including: 1) cleanout and repair of the concrete containments provided for the CIL tanks and the acid wash and elution circuit; and 2) cleanout and necessary modifications to the drainpipe at the CIL containment bund.

Evidence Provided to Verify Completion of Corrective Action:

GSWL provided the required evidence described above. Specifically, this evidence includes:


- Photographs demonstrating cleanout of the concrete containment provided for the CIL tank farm and completion of repairs to the damaged containment floor, and written confirmation that the photographs submitted show repairs inclusive of all damaged areas identified by GSWL following cleanout and thorough inspection of the entire CIL containment area.
- Photographs demonstrating clean out and redressing of the “now old” acid wash concrete containment area, which is no longer in use.
- Photographs of the new acid wash facility.
- Photographs demonstrating cleanout and repair of the concrete containment provided for the elution circuit, and written confirmation that the photographs submitted show repairs inclusive of all damaged areas identified by GSWL following cleanout and thorough inspection of the entire containment area.
- Photographs demonstrating cleanout of the valved drainpipe at the CIL containment bund and installation of gravel drain material and a grated

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cover to prevent trash and debris from entering and clogging the pipe.
Copies of these documents will be retained in Environ's internal project records.

Corrective Action Completion Date: August 23, 2013

Closure Verified  Lead Auditor: John T. Lambert	Date: 12 November 2013
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ENVIRON
CORRECTIVE ACTION REQUEST
ICMC Audit – Wassa Mine

Control No.:
GSWL-ICMC-CAR-02

Date issued: March 1, 2013

ICMC Standard of Practice Section Reference: 4.1(8)

Introduction: This Corrective Action Completion Report presents the evidence to support the successful implementation of the **GSWL-ICMC-CAR-02** to correct the deficiency identified in the ICMC Certification Audit of the Wassa Mine, operated by Golden Star (Wassa) Ltd. (GSWL), a Golden Star Resources Ltd. company. The audit was conducted September 3 through 7, 2012.

Description of Deficiency: During this onsite recertification audit, the auditor reviewed inspection records over the three-year period between the 2009 ICMC verification audit and this ICMC recertification audit. Although GSWL is conducting comprehensive inspections of its cyanide facilities, the inspection records provided over the period between audits were incomplete with records missing over extended periods. Additionally, the inspection checklists reviewed suggest that personnel performing the inspections are not consistently recording all information, and in some cases, issues identified are not rectified in an expeditious manner.

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

To achieve full compliance under this Standard of Practice, GSWL must complete the following corrective actions:

- Review the effectiveness of the inspection program for cyanide facilities and implement measures to ensure that all inspections are conducted on established schedules and that inspection records are retained.
- Provide refresher training regarding the requirements for performing established inspections and for documenting corrective actions through to completion.

Evidence Required for Verification of Corrective Action Completion:

- Cyanide facility inspection records completed over a one-year period following this 2012 ICMC recertification audit (auditors will request representative samples on a monthly basis.
- Relevant training records (i.e., refresher training and task training for any

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updated inspection procedures).

Evidence Provided to Verify Completion of Corrective Action:

GSWL provided the required evidence described above. Specifically, this evidence includes representative samples of inspection records completed during the months January through August 2013 for the Tailings Storage Facility (TSF) and other cyanide facilities as follows:

TSF inspections:

- Daily Planning Sheet;
- Daily Inspection Sheet – Shift Supervisor;
- Daily Inspection Sheet – Tailings Supervisor; and
- Quarterly Inspection Reports prepared by Knight Piésold.

Process area inspections:

- Checklist PM No. 002 – Daily Inspection Checklist for Cyanide Valves, Pumps and Pipes;
- Checklist PM No. 003 – Weekly Crusher Gate Antipollution Pond Discharge Monitoring Checklist;
- Checklist PM No. 004 – Weekly Process Plant and Cyanide Storage Areas Checklist;
- Checklist PM No. 005 – Mill Daily Cyanide Mixing Safety Checklist;
- Checklist PM No. 007 – Supervisor's Weekly Housekeeping Checklist for Cyanide and Reagents Areas;
- Checklist PM No. 010 – Reagent Operators Daily Housekeeping Checklist for Cyanide and Reagent Areas;
- Checklist PM No. 017 – Shift Supervisors' Pipe Reactor Feed Line and Tailings Line to Y- Piece (Daily);
- Checklist PM No. 018 – Inspection of Physical Integrity of the Secondary Containments for All Cyanide Facilities (Daily);
- Checklist PM No. 019 – Daily Inspection Checklist for the Integrity of Process Water Ponds, Pipes, Leak Detectors, Pumps and Valves; and
- Checklist PM No. 020 – Weekly Inspections of CIL Piezometers.

Additionally, GSWL provided records demonstrating “Cyanide Facility Inspection

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Training” completed by personnel that perform the inspections. The inspection records are dated 27 September 2012 and 11 January 2013.

Copies of these documents will be retained in Environ’s internal project records.

Corrective Action Completion Date: November 4, 2013

Closure Verified

Date: 12 November 2013



Lead Auditor: John T. Lambert

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