REPORT

MAY 2016

ICMC RECERTIFICATION SUMMARY AUDIT REPORT

MARLIN MINE GUATEMALA

Submitted to:
International Cyanide Management Institute (ICMI)
888 16th Street, NW-Suite 303
Washington, DC 20006

AND

Montana Exploradora de Guatemala S.A.
Europlaza World Business Center
5ª Avenida 5-55 Zona 14
Torre I, Nivel 6 Oficina 601
Guatemala, C.A.

Project Number: 1543563

Distribution:
ICMI – One PDF and One Hard Copy
Marlin – One PDF and One Word File
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Golder Associates

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1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

Name of Mine:	Marlin Mine
Name of Mine Owner:	Goldcorp Inc.
Name of Mine Operator:	Montana Exploradora de Guatemala S.A.
Name of Responsible Manager:	Christian Roldan
Address:	Europlaza World Business Center 5ª Avenida 5-55 Zona 14 Torre I, Nivel 6, Oficina 601
State/Province:	Department of San Marcos
Country:	Guatemala
Telephone:	(502) 232 92600
Fax:	(502) 232 92610
E-Mail:	Christian.Roldan@goldcorp.com

2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

2.1 Mine Location

The Marlin Mine (Marlin) is operated by Montana Exploradora de Guatemala, S.A. (Montana), a subsidiary of Goldcorp Inc. Marlin is located in the western highlands of Guatemala at an elevation of approximately 2,300 meters above sea level, about 120 kilometers (km) west-northwest of Guatemala City (Figure 1). Marlin is a gold and silver mine and processing facility located in the municipalities of San Miguel and Sipacapa, in the Department of San Marcos. The mining concession is 20 square kilometers Rainfall at the Marlin site is estimated to average approximately 1,000 millimeters (mm) per year and occurs primarily during the wet season when about 90 percent of the annual precipitation occurs. The average annual pan evaporation is 1,708 mm.

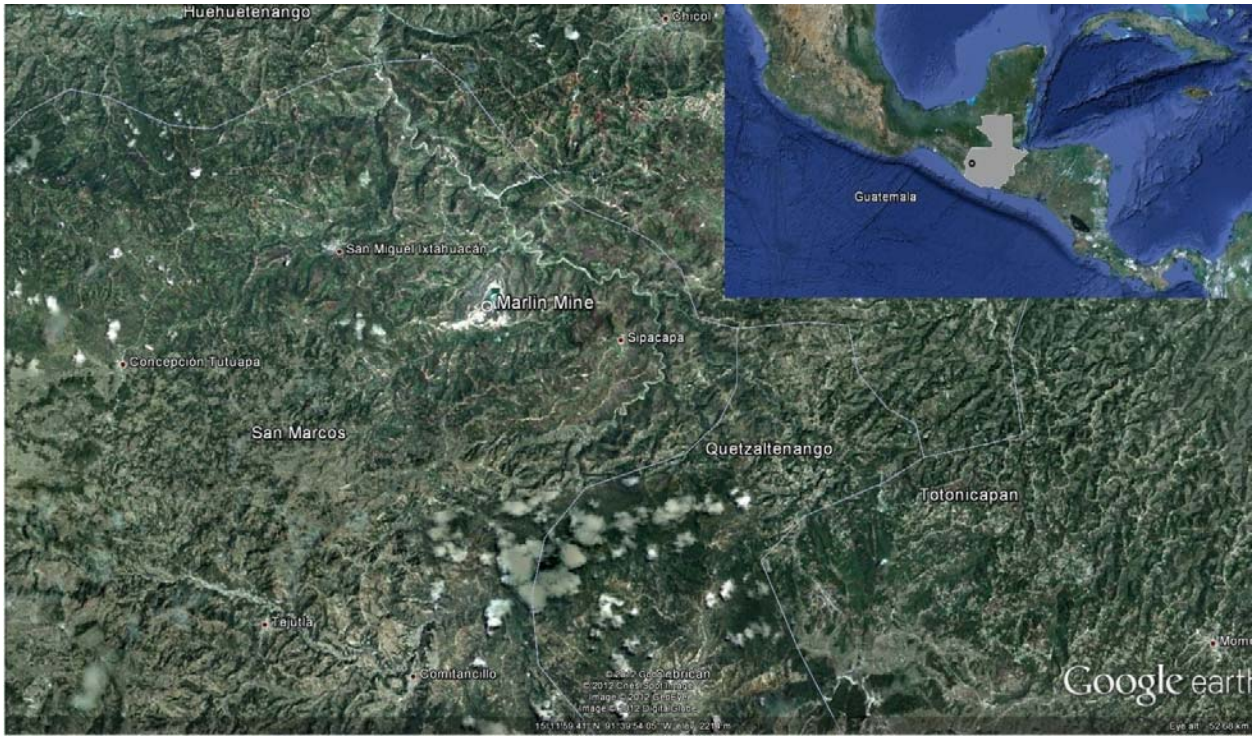

Figure 1: Location Map

2.2 Background

Marlin has been in operation since late 2005. The mine employs approximately 1,000 direct workers and 400 contractors. Fluor Daniel Inc. was the project designer. The mine is currently scheduled for closure in 2016 and some closure activities are already underway.

Mining previously occurred using both underground and open pit methods. However, open pit mining ceased in 2011 and only underground mining continued in 2012. Ore is hauled approximately 2 km from the mine to the crushing and grinding facility. The mill throughput average is approximately 5,000 tonnes per day (tpd).

Marlin receives cyanide in Intermediate Bulk Container (IBC) boxes. Boxes are stored in a warehouse and periodically moved, using first in/first out principles, to a smaller storage area adjacent to the mixing area at the plant. Box components (i.e., plywood, cardboard, and plastic bags) are stored in a secure area at the mixing area for periodic transport to the onsite incinerator where they are burned.

Marlin's cyanide circuit consists of a gravity concentrator and intensive cyanidation reactor (currently inactive), grinding thickener, pregnant solution storage tank, cyanide mixing tank, cyanide storage tank, process water storage tank, six leach tanks, five counter current decantation (CCD) tanks, cyanide recovery thickener and interconnection pipes. The ground ore is processed in tanks by an agitated leach in a cyanide solution. The resulting product is passed through a CCD system and the Merrill-Crowe circuit. Gold and silver are recovered in the onsite refinery.

The process circuits are shown in the process flow diagram in Figure 2. The tailings from the CCD are treated via an Inco/SO_2 system to neutralize the residual weak acid dissociable (WAD) cyanide concentrations to approximately 0.5 mg/L prior to passing to a filter plant or the Tailings Storage Facility (TSF). Tailings directed to the filter plant are filtered to around 85 percent solids and deposited as backfill into the open pit. Water from the filter plant is returned to the leach plant for re-use. Tailings directed to the TSF are being strategically deposited around the perimeter to move the decant pool in the direction of the spillway in preparation for closure. Marlin has a water treatment plant that treats the water from the tailings reclaim and then returns the water back to the TSF for reuse during the dry season or for discharge through the spillway during the wet season. Marlin is permitted to discharge water and is doing so during the wet season to reduce the size of the decant pool in preparation for closure.

The TSF has a phased earth and rockfill embankment. The embankment has an inclined, low-permeability core, a grout curtain to control seepage through the embankment foundation, internal drainage and a dam seepage collection system. Construction of a concrete closure spillway was completed in 2014. Diversion channels were built on either side of the TSF in 2015 to reduce the amount of water reporting to the facility.

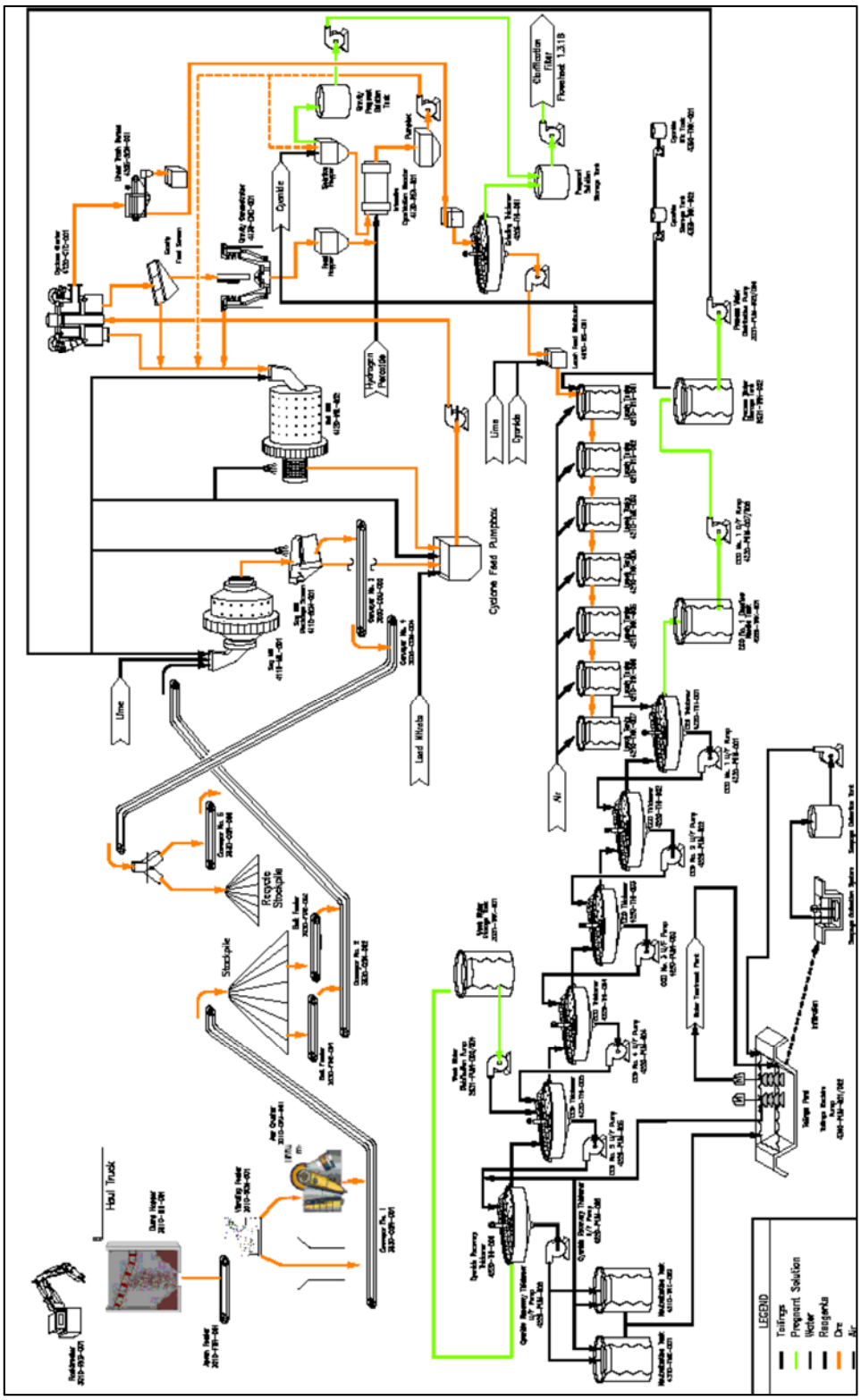

Figure 2: Process Flow Diagram (supplied by Marlin)

SUMMARY AUDIT REPORT

Auditors findings

Marlin is:

☒ **in full compliance with**

☐ in substantial compliance with

☐ 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: Golder Associates

Audit Team Leader: Kent R. Johnejack, Lead Auditor and Mining Technical Specialist

Email: kjohnejack@golder.com

Name of Other Auditors

Name, Position	Signature
Juan Cartajena, Support Auditor	

Dates of Audit

The site visit for the recertification audit was undertaken over 3 days from January 20 to 22, 2016.

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

Marlin Mine
Name of Facility

Signature of Lead Auditor

May 12, 2016
Date

PRINCIPLE 1 – PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers that 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**

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 1.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 1.1, requiring the operation 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.

Marlin's cyanide supply has been managed under the same contract conditions as the previous recertification period. Cyanide was produced by Chemours Company (formerly E.I. DuPont de Neumors and Company [DuPont). DuPont at its plant located in Memphis, Tennessee, which has maintained its certification during the period covered by Marlin's recertification audit. Marlin has maintained a contract with DuPont throughout the recertification period that requires DuPont to maintain its Code certification. Cyanide used by Marlin has been provided exclusively by DuPont.

PRINCIPLE 2 – TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

Transport 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.**

☒ **in full compliance with**

Marlin is ☐ in substantial compliance with **Standard of Practice 2.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 2.1, requiring that the operation establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.

The cyanide supply chain (global and within Guatemala) used by DuPont for cyanide deliveries to Marlin is certified by the ICMI. DuPont's global supply chain has been continuously certified since 2010. Likewise, DuPont's supply chain within Guatemala (Transportes Piman) was certified in 2012 and recertified in 2015.

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

☒ **in full compliance with**

Marlin is ☐ in substantial compliance with **Standard of Practice 2.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 2.2, requiring that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

A review of the cyanide supply contract between DuPont and Goldcorp stipulates that it is DuPont's responsibility to ensure that the cyanide transportation services comply with the Code. Marlin maintains electronic and physical records of cyanide deliveries, which include cyanide shipping documents from DuPont's plant, customs documents and receipt of cyanide in Guatemala, Marlin's chemical importation license, complete reports of the shipping logistics, and a Marlin internal report which summarized the supply chain for every shipment of cyanide to the mine. All elements of the supply chain identified in the records are certified in compliance with the Code.

PRINCIPLE 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.**

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 3.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Handling and Storage Practice 3.1, requiring that cyanide handling and storage facilities are designed and constructed consistent with sound, accepted engineering practices, quality assurance/quality control (QA/QC) procedures, spill prevention and spill containment measures.

Marlin receives solid cyanide in IBC “bag-in-box” plywood boxes. These boxes are stored in a warehouse and are transferred a few at a time to a small interim storage shed at the mixing area. The facilities for unloading, mixing and storing cyanide have been designed and constructed in accordance with existing accepted engineering practices. No changes or modifications were made to these facilities since the initial certification audit in 2009 and the recertification audit in 2013. The auditors visited the unloading, storing and mixing facilities during the site visit and observed them to be as previously described and still in good condition.

The cyanide storage warehouse is located by itself in an area without offices or other places where people may congregate. A small interim storage shed for several cyanide boxes is located next to the cyanide mixing area. The cyanide mixing area, including the interim storage shed, is located within secondary containment for the leaching tanks at the process plant. These facilities are all located within the fenced and guarded plant area.

The auditors also observed that the warehouse, interim storage shed, and valves at the mixing area were locked. As such, all storage and mixing areas are secure and located away from areas where people may congregate.

The cyanide warehouse, interim storage shed, and mixing area are all located away from surface water. They are located within the watershed reporting to, and are uphill from, the TSF.

Marlin has installed level sensors in the preparation tank, storage tank, SAG mill box, pregnant solution tank, and process water storage tank. These sensors are set with high alarms and high-high alarms that report to the control room. The Marlin electrical maintenance staff inspect these level sensors every 15 days and calibrate them every 90 days. To verify compliance, the auditors observed readings and alarm settings on screen shots of the control room software and reviewed electrical maintenance records from throughout the recertification period.

The cyanide mixing tank and storage tank are located within the concrete secondary containment for the leaching tanks. This concrete floor is an adequate barrier to prevent seepage to the subsurface. The concrete is also an adequate barrier to leakage. No modifications have been made to the concrete tank bases and secondary containment since the initial certification audit in 2009 and the recertification audit in 2013. The auditors observed the concrete floor to still be in good condition with cracks and joints properly sealed.

The cyanide storage warehouse is open at the top of the walls underneath the overhanging roof. The small interim storage shed at the mixing area has chain-link fencing in the front for ventilation. The cyanide mixing and storage tanks are located in the open air. Therefore, all cyanide storage and mixing areas have adequate ventilation.

The roofed warehouse has a concrete floor with curbing at the base of the walls. The small interim storage area at the mixing area is roofed with a concrete floor (part of the secondary containment for the leach tanks). According to the written procedure, Marlin does not allow cyanide unloading, transfer, and mixing in the rain. Therefore, Marlin has adequate measures to prevent contact of solid cyanide with water.

The cyanide storage warehouse and the interim storage shed are locked with keys limited distribution of the keys. All storage and mixing areas are located within the fenced and gated area of the process plant. Therefore, Marlin stores cyanide in a secure area where public access is prohibited.

No other types of chemicals are allowed to be stored in the cyanide storage warehouse. The small storage shed is located by itself with no other chemicals in the vicinity. Abundant signage prohibits smoking, drinking or eating near either of the cyanide storage areas. Therefore, Marlin has isolated the cyanide mixing and storage tanks away from incompatible chemicals such as acids, oxidizers and explosives.

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

☒ **in full compliance with**

Marlin is ☐ in substantial compliance with **Standard of Practice 3.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Handling & Storage Practice 3.2 requiring that cyanide handling and storage facilities are operated using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

Marlin receives solid sodium cyanide in boxes that are tracked according to written procedures to ensure that all boxes are accounted for from entry to the warehouse through incineration. The boxes consist of (from exterior to interior) wooden pallet, plywood sides, cardboard, plastic bag, and supersack. After mixing, the plant operators rinse the plastic bag and supersack four times and the outer components once. The rinsed components are temporarily stored in designated receptacles at the mixing area prior to transport to the onsite incinerator for burning.

Marlin has assigned an identification number to all cyanide tanks and critical valves. The Marlin mixing procedure describes how to operate valves during the mixing and transfer of the solution from the mixing to storage tank. The procedure also specifies the minimum level of 5 percent in the mixing tank and a pH of at least 11.5 to allow the start of mixing. The Marlin mixing procedure requires that warehouse personnel and mixing operators wear PPE including Tyvek® suits, full face shield, rubber boots, gloves and dust respirators while handling and mixing cyanide. The Marlin mixing procedure requires that two operators be present for the mixing. Marlin has also developed a procedure that requires prompt clean-up of solid and liquid cyanide spills during mixing.

The auditors observed a mixing event to verify compliance. The auditors also reviewed the checklists for receipt of cyanide deliveries to the warehouse, checklists for transfer from the warehouse to the interim storage shed at the mixing area, mixing checklists, and incineration control lists from throughout the recertification period to verify compliance.

According to the warehouse procedure, the maximum stacking is three high for cyanide boxes in the warehouse. Marlin also unloads each truck delivery in its own quadrant of the warehouse to allow them to implement first in – first out usage. During the site visit, the auditors observed stacking of three layers, as well as boxes stored by lot in different quadrants of the warehouse.

PRINCIPLE 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 including contingency planning and inspection and preventative maintenance procedures.**

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.1, requiring that the operation implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures.

The cyanide facilities at Marlin with WAD cyanide concentrations greater than or equal to 0.5 milligrams per liter (mg/L)] are:

- Mixing and storage tanks
- Grinding circuit
- Intensive leach circuit (Gekko – inactive at the time of the site visit)
- Mill thickener
- Leach tanks
- Counter-current decant (CCD) tanks
- Merrill - Crowe plant
- Cyanide neutralization circuit (i.e., INCO/SO_2 treatment).
- Tailings storage facilities (TSF) including the seepage collection pond at the toe of the embankment
- Water treatment plant (WTP) associated with the TSF

As defined in Code guidance, the following facilities are also considered cyanide facilities:

- Cyanide warehouse and small interim storage shed at the mixing area
- Diversion channels on either side of the TSF

The Filtered Tailings Storage Facility (FTSF) is not a cyanide facility. Marlin has developed a written procedure (PP-PRO-35 Cyanide Neutralization Failure) that specifies that the FTSF will only receive tailings with WAD cyanide concentration less than 0.5 ppm. In the event WAD cyanide concentrations are greater

than or equal to 0.5 mg/L, tailings are directed to the TSF. The auditors reviewed analytical data that showed the WAD cyanide concentrations for the FTSF were largely non-detect and were always less than 0.5 mg/L throughout the recertification period.

Marlin operates the cyanide facilities under environmental, health, and safety (EHS) management systems, operating plans, and standard operating procedures (SOPs). The two EHS management systems are the Goldcorp Sustainability Excellence Management System (SEMS) and OHSAS 18001:2007. The Marlin operating plans provide the regulatory requirements, assumptions and parameters on which the design was based and the facilities are operated. The original 2004 operating manuals for the process plant were still present in a bookcase at the process plant. These operating manuals detail the operating parameters and design capacities of for the milling, intensive leaching, leaching, CCD, Merrill-Crowe, and neutralization circuits. Marlin has developed a set of SOPs that describe the practices necessary for the safe and environmentally sound operation of the facility, including the specific measures needed for compliance with the Code and regulatory requirements. The SOPs are largely unchanged since the previous recertification audit except for renumbering and updating in 2014 and 2015.

Marlin has developed a mine-wide procedure for the management of change (SI-PRO-06), as well as a plant-specific procedure for the management of changes in the process parameters (PP-PRO-24). Both procedures use the same evaluation form that includes sections for change details, risk assessment, review and approval, implementation, completion review, and final formal review. The departments involved depend on the nature of the proposed change. The auditors reviewed three completed evaluation forms related to cyanide management from the recertification period to verify compliance.

Marlin has developed a series of eight contingency plans for the process plant that cover tank overflows; inundation of secondary containments; broken reagent grade cyanide pipelines; seepage collection failure; cyanide neutralization failure; tank overtopping; startup and operation of the WTP; and startup and operation of the filters and plant. The startup and operation plans for the plant and WTP also apply in the event of temporary closure or cessation of operations.

Marlin has also developed a contingency plan for the TSF that covers dam failures due to earthquake or inundation from heavy rains. This contingency plan contains emergency alert levels; evacuation routes; contact information; and responsibilities for emergency identification, community and government notification, evacuation, and termination of the emergency. An important feature of Marlin's contingency plan is the distribution of mine radios to key members of the communities within the potential inundation area and mock drills to test their evacuation skills. The contingency plan requires evacuation drills with the communities every 2 years. The auditors reviewed the contingency procedures and mock drill records to verify compliance.

Marlin inspects the cyanide facilities on a daily, weekly, monthly, and per event basis, depending on the type of facility or activity. This frequency is sufficient to ensure that the cyanide facilities are functioning as intended. The inspections include tanks, pipelines, secondary containments, sumps, and valves. The forms note cracks, leaks, salts, fluids, deterioration, and corrosion, as well as flow rates and water levels as applicable. Non-destructive testing (NDT) is conducted annually on the mixing and storage tanks. As of 2015, all tanks were judged suitable for their intended use. The TSF is visually inspected on a daily basis for condition of the barge pumps, spillway, embankment, and water levels. Water level is also monitored continuously via the level sensor that reports to the plant control room. The diversion channels are inspected monthly. In addition, Marlin conducts monthly bathymetry measurements, weekly settlement monument monitoring, weekly piezometer monitoring, and real-time accelerometer monitoring. Annual dam inspections are conducted by a third party engineer. The auditors reviewed inspection records from throughout the recertification period to verify compliance.

The inspection forms contain the date/time of inspection, the inspectors' names, and a place for comments at the bottom of each form. Marlin maintains a spreadsheet for tracking the completion of cyanide related repairs and maintenance. The auditors reviewed the inspection forms and tracking spreadsheet from throughout the recertification period to verify compliance.

Marlin has established a maintenance program to ensure the safe operation of equipment for managing cyanide. Marlin uses the SAP software to manage mechanical and electrical maintenance by identifying, assigning, scheduling, and tracking tasks through completion. The program consists of preventative and corrective maintenance. Queries for randomly selected pieces of equipment showed a continuous record of maintenance throughout the recertification period. Marlin has also installed standby pumps for critical cyanide circuits and maintains an inventory of critical parts in their warehouse.

Marlin maintains eight generators at the mine with a total capacity of 10.5 MW, which is sufficient to run the entire process plant. Marlin staff conduct inspections, including generator startup, every 7 days. A contractor, Gentrac Caterpillar, conducts preventative maintenance annually with corrective maintenance as needed. The auditors observed these generators during the site visit, as well as reviewed the inspection and maintenance records from throughout the recertification period, to verify compliance.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.2, requiring that the operation limit the use of cyanide to that optimal for economic recovery of gold so that the waste tailings material has as low a cyanide concentration as practical.

Marlin conducts an internal laboratory program consisting of agitation tests to evaluate and adjust cyanide dosification. As described in the initial certification report in 2009 and the recertification report in 2013, the initial test work for the feasibility study resulted in an optimized rate of approximately 400 parts per million (ppm) free cyanide. Marlin has continued the testing program throughout the recertification period. The auditors observed spreadsheets of these data during the interview with the mine metallurgist to verify compliance.

As a result of this testing program, Marlin determined that ores being processed during the recertification period required that the dosification rate be increased to 600 ppm free cyanide. Given that the cyanide destruction circuit continued operation throughout the recertification period, this increase in dosification had no effect on the concentrations of WAD cyanide in the tailings reporting to the TSF.

Marlin staff stated that they had evaluated automatic titrators for continuous measurement of cyanide concentrations, but discarded them as impractical. As with the previous audit cycles, Marlin has continued using a manual control strategy consisting of collecting samples every 2 hours for analysis at their internal metallurgical laboratory. Samples are collected every 2 hours at six locations in the plant and analyzed for free cyanide. Results are recorded on a form and communicated via phone to the control room operator. The operator changes the cyanide dosification rate as needed. The auditors reviewed the laboratory forms from throughout the recertification period to verify compliance.

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

Marlin is

- ☒ **in full compliance with**
- ☐ in substantial compliance with **Standard of Practice 4.3**
- ☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.3, requiring the operation to implement a comprehensive water management program to protect against unintentional releases.

Marlin has developed a comprehensive and probabilistic water balance. This is the same GoldSim model that was evaluated and found compliant in the initial certification audit in 2009 and the recertification audit

in 2013. The model is comprehensive in that it contains the applicable inflows and outflows, and assigns them reasonable values. The inflows are precipitation, runoff, tailings, treated sewage, seepage return flows, and pit dewatering (wet season only). The outflows are natural evaporation, forced evaporation, spillway discharge, water treatment plant discharge, seepage losses, and diverted run-on. Since the previous audit in 2013, Marlin has updated the model to reflect the ongoing preparations for closing the TSF: (a) redirection of the underground mine water to the WTP rather than to the TSF; (b) addition of forced evaporation; and (c) construction of run-on diversion channels around the TSF. The model is probabilistic in that it incorporates the 100-year, 24-hour storm. The model has also been used to evaluate three scenarios for filling the TSF prior to closure, as summarized in a presentation dated January 2016.

Marlin implements the water balance via inspections and automated monitoring. Plant staff conduct daily inspections and environmental staff conduct monthly inspections. Inspections include the dam crest, embankment, toe, and run-on diversion channels. Marlin installed a level sensor in 2013 that allows continuous, real-time water level monitoring for the TSF. Other monitoring includes piezometers, settlement monuments, bathymetric surveys, accelerometers. Marlin also commissions consultants to summarize these data in an annual monitoring report. A third-party also conducts an annual dam safety review. The auditors reviewed these data and reports to verify compliance.

Marlin manages the TSF with available capacity for 100-year 24-hour storm plus 2 meters (m) freeboard, and an additional 1 m of freeboard for wave run-up. The auditors reviewed a time series graph that showed that the measured water levels had not encroached into the freeboard during the recertification period.

Marlin has measured precipitation and evaporation since 2005 and 2007, respectively, at an automated meteorological station located on the crest of the TSF. These data are incorporated into the GoldSim water balance on a monthly basis according to a written procedure. The auditors reviewed spreadsheets to verify the data were collected throughout the recertification period.

Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

Marlin is

- ☒ **in full compliance with**
- ☐ in substantial compliance with **Standard of Practice 4.4**
- ☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.4, requiring the operation implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

The only open water at Marlin is the decant pool on the TSF and the seepage collection pond at the toe of the TSF embankment. Otherwise, solutions and tailings are managed with pipelines and vessels. Destruction of cyanide to less than 50 mg/l WAD via the INCO circuit at the plant is Marlin's primary measure to protect wildlife and livestock from exposure to open water with cyanide.

Marlin demonstrated that the open waters at the TSF and the seepage collection pond did not have concentrations of WAD cyanide that exceeded 50 mg/l during the recertification period. Marlin provided time series graphs of daily WAD cyanide concentrations measured at the onsite laboratory. These graphs showed that the maximum WAD cyanide in the discharge to the TSF was approximately 19 mg/l during the recertification period. Marlin also queried their database of the WAD cyanide data from monthly samples analyzed at an external laboratory that showed the maximum concentrations at the TSF and the seepage collection pond were well less than 50 mg/l throughout the recertification period.

Maintaining WAD cyanide at less than 50 mg/l has been effective in preventing significant wildlife mortality at Marlin throughout the recertification period. Marlin staff queried their "Enablon" database during the interview to show that there had been no cyanide-related mortality during the recertification period.

Marlin does not have a heap leach pad, so the issue of ponding and overspray is inapplicable.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.5**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.5, requiring the operation implement measures to protect fish and wildlife from direct or indirect discharges of cyanide process solutions to surface water.

Marlin has two direct discharges to surface water, although they both discharge at the same point to the Quebrada Seca ("Dry Wash" in English), which is an intermittent tributary to the Quivichil River. Decant water from the TSF discharges via the spillway and treated water from the WTP discharges via a pipe to the spillway. Sampling station (D7SP) immediately downstream of the spillway represents the combined discharge from these two sources. Samples are collected daily when discharging and monthly when not discharging. The maximum result during the recertification period was 0.468 mg/l WAD cyanide, based on a query of the Marlin database that the auditors observed during the site visit. Therefore Marlin did not have a direct discharge to surface water greater than 0.5 mg/L WAD cyanide during the recertification period.

Marlin has established sampling stations downstream of the discharge point from the TSF spillway to the Quebrada Seca. Twelve-hour composite samples are collected monthly. The maximum results from stations SW8, SW3, and SW5 were less than 0.022 mg/l free cyanide throughout the recertification period, based on a query of the Marlin database that the auditors observed during the site visit. Marlin has contracted with SVL Analytical Laboratory, a US-based laboratory in Kellogg, Idaho, to analyze surface water samples. The free cyanide results were determined with Method 4500-CN-4.

Marlin does not have an indirect discharge to surface water. The plant and TSF are located in the headwaters of the watershed of the Quebrada Seca and therefore the embankment for the TSF is the collection point for any surface or subsurface pathways. The TSF was designed with seepage control measures, such as a low permeability core keyed into bedrock and a grout curtain, to reduce the potential for indirect discharges.

Marlin is not engaged in surface water remediation because cyanide concentrations in surface water have not exceeded the applicable levels.

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

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 4.6**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.6, requiring the operation implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

Marlin has implemented water management measures to protect the beneficial uses of groundwater beneath and downgradient of the cyanide facilities. No changes or modifications were made to these measures since the initial certification audit in 2009 and the recertification audit in 2013. The primary measures to reduce the potential for groundwater impacts are INCO/SO_2 cyanide destruction in the tailings before deposition in the TSF and hydrogen peroxide treatment for water in the decant pool before discharge from the TSF. In addition, the embankment and saddle dam of the TSF were constructed with an inclined, low-permeability core, a grout curtain to control seepage through the embankment foundation, internal drainage, and a seepage collection system at the toe of the embankment. In addition, the concrete floors and secondary containments at the plant also limit the potential for seepage to groundwater. The auditors visited these areas during the site visit and observed the measures to be as previously described and still in good condition.

Marlin staff stated that there is no beneficial use for groundwater designated by the regulators, nor is there an applicable groundwater standard. However, there is an actual point of use at an intermittent spring located approximately 1 km downgradient of the TSF. Approximately 30 persons in the village of Siete Platos use this intermittent spring. Marlin samples this spring. All results for WAD cyanide were non-detect at less than 0.001 mg/l throughout the recertification period, based on a query of the Marlin database that the auditors observed during the site visit.

Marlin has installed groundwater monitoring wells (i.e., MW10, G11, MW11, MW3B, GW3, G13, GW6, GW7, and GW8) to measure groundwater quality along the perimeter of the TSF, as well as downgradient of the TSF. Marlin samples these wells quarterly. All results for WAD cyanide from these wells were non-detect at less than 0.001 mg/l throughout the recertification period, based on a query of the Marlin database that the auditors observed during the site visit.

Marlin does not use mill tailings as backfill in their underground mine.

Groundwater monitoring data indicate that Marlin has not caused increases in concentrations of WAD cyanide in groundwater below or downgradient of the cyanide facilities, and therefore is not engaged in groundwater remediation to prevent further degradation or restore beneficial use.

Standard of Practice 4.7: **Provide spill prevention or containment measures for process tanks and pipelines.**

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.7**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.7 requiring that the operation provide spill prevention or containment measures for process tanks and pipelines.

Marlin has provided secondary containment measures for the cyanide preparation, storage, and process tanks and vessels, as well as for pipelines bearing cyanide solutions. Marlin does not have cyanide-related tanks, vessels, or pipelines without secondary containment. The tank and vessel secondary containments have been sized to contain at least 110 percent of the single largest tank. No changes or modifications were made to these facilities since the initial certification audit in 2009 and the recertification audit in 2013. The auditors visited these areas during the site visit and observed the containment measures to be as previously described and still in good condition.

Marlin does not discharge solutions in secondary containment to the environment. Marlin has sumps with automated sump pumps that return solutions to the process circuits. These sumps have level sensors that report to the control room. Sumps are located in the following areas: SAG mill, ball mill, intensive leach circuit (Gekko), Merrill Crowe plant, thickeners area, leaching area, CCD area, and cyanide destruction area. In the event of a large volume of solution in the secondary containments, or in the event that the sumps also fail, Marlin would employ the measures described in a written procedure for inundation of these containments. The auditors observed these sump level sensors and pumps on the control room screens, as well as in the containments themselves, to verify they were functioning.

Marlin does not have any pipelines bearing cyanide solutions that pose a special risk to surface water. The pipelines from the cyanide destruction circuit to the TSF are located upstream of, and within the same watershed, as the TSF, and are located within an excavated bedrock trench to direct spills to the TSF. A spill would simply report to the TSF without the need for special protection measures.

Marlin has provided stainless steel, carbon steel, and HDPE pipelines for cyanide solutions. The auditors observed that the reagent grade pipelines were constructed of stainless steel, and that the pipelines for pulp, tailings, reclaim, and other cyanide solutions were made of carbon steel or HDPE. These materials are compatible with cyanide and high pH.

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.**

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.8**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.8 requiring that operations implement QA/QC procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

The initial certification audit in 2009 and the previous recertification audit in 2013 evaluated the existence of a CQA program, the contents of that CQA program, and the quality of the review of CQA documentation for the cyanide facilities and found them to all be Code-compliant.

Since the previous recertification audit in 2013, the only new or modified cyanide facility is the concrete run-on diversion channels on either side of the TSF. Construction was completed in February 2015 and consisted of rock excavation and concrete placement. The Marlin Department of Civil Works conducted a

construction quality assurance (CQA) program that consisted of observation, weekly meetings, and testing. The auditors reviewed weekly CQA meeting minutes from September 2014 to January 2015 that documented specifications for the concrete mix and placement; field observations; materials suitability; results of concrete testing; and qualified review of the work. The auditors also accepted the approval for final payment to the contractor in March 2015, including a summary of work completed, as evidence of qualified review and approval.

Marlin has retained the CQA records from construction of the cyanide facilities, including the plant and TSF. The auditors observed bookshelves of CQA reports in the office of the Department of Civil Works to verify compliance.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.9**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 4.9 requiring that operations implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

Marlin has developed a monitoring plan, a quality assurance/quality control (QA/QC) plan, and standard operating procedures for discharge, surface water, and groundwater sampling. The monitoring plan summarizes applicable regulations, objectives, sampling locations, sampling frequencies, procedures, constituent lists, quality management, data management, and reporting. The QA/QC plan discusses field QA/QC samples, laboratory QA/QC samples, external quality control, and data validation. The standard operating procedures detail field parameters, water levels, flow rates, sample labelling, containerization, filtration, preservation, storage, holding times, shipping, and chain-of-custody completion. Depending on the sample type and location, the cyanide species to be analyzed include free, WAD, and total cyanide.

Marlin staff stated that the sampling and analytical protocols were originally developed during the preparation of the Environmental Impact Statement for the Marlin project. Since that time, the procedures have been updated by chemical engineers in the environment department. Marlin has contracted with a US-based laboratory certified for free, WAD, and total cyanide. Therefore, the sampling and analytical protocols have been developed by qualified personnel.

Marlin records date/time of sampling, samplers' initials, weather observations, sample number, sampling methods, field parameters, containerization, filtration, preservation, and general observations on a field sampling form. Sample shipping information and required analyses are documented on chain-of-custody forms. The auditors reviewed completed forms from the recertification period to verify compliance.

Marlin monitors for cyanide at their discharge point (i.e., D7SP at the TSF spillway), as well as at three surface water stations downstream of the TSF and nine groundwater monitoring wells downgradient of the TSF. The auditors judge this to be a reasonable number of representative locations to monitor cyanide in surface water downstream and groundwater downgradient of the cyanide facilities.

Marlin operators inspect for wildlife at the TSF daily and environmental staff monthly. The auditors reviewed completed examples of these forms from throughout the recertification period to verify compliance.

Surface water and groundwater sampling is conducted monthly to quarterly depending on the location and the purpose of the sample. Wildlife monitoring is conducted daily. These are typical frequencies that are adequate to characterize changes in these media in a timely manner.

PRINCIPLE 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.**

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 5.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 5.1 requiring that the site plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock

Marlin has developed a 2014 mine-wide closure plan that includes the appropriate cyanide facilities and the appropriate decommissioning activities. Chapter 5 covers the mill and plant, including the cyanide warehouse. Chapter 6 covers the TSF. The plan describes decommissioning activities such as removal of residual cyanide, decontamination of equipment and structural components until the concentration of WAD cyanide is less than 0.5 mg/l, disposal of rinse solutions in the TSF, and removal of the water on the surface of the TSF by treatment to less than 0.022 mg/l free cyanide and subsequent discharge to a nearby creek.

Marlin has developed a mine-wide schedule that covers closure activities from 2016 to 2019. The schedule is detailed to the monthly level and activities are tied to specific dates. Decommissioning of the cyanide facilities is scheduled for January to July of 2017.

The updated 2014 closure plan summarizes the content of previous closure plans in 2005, 2009, and 2011. Therefore, Marlin has reviewed and updated its closure and decommissioning plans in a regular manner.

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

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 5.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with the Standard of Practice 5.2 requiring that the site establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

Marlin has internally developed a cost model (i.e., the Standardized Reclamation Cost Estimator [SRCE]) for mine-wide closure. The cost estimate direct costs for construction, as well as add-on percentages for third party engineering design and contract administration. The cost estimate is based on quoted rates for third party contractors and consultants. The 2015 cost estimate includes approximately US$1.8M for solution management which includes cyanide decontamination activities, water treatment, and disposal of wastes.

Goldcorp annually updates its closure cost estimate for Marlin to quantify its Asset Retirement Obligations (ARO). The auditors reviewed annual ARO memoranda to verify that Marlin has updated closure costs throughout the recertification period.

Marlin has established closure bonding with the Guatemalan Ministry of Natural Resources. The auditors reviewed three governmental resolutions showing that the bonding has been accepted. Marlin also provided current copies of the bonds showing that they have been renewed as needed; all bonds were current at the time of the site visit. The total amount of bonding is well in excess of the amount estimated for cyanide decommissioning activities.

PRINCIPLE 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 eliminated, reduce and control them.

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 6.1**

☐ not in compliance with

Summarize the basis for this finding:

The site is in FULL COMPLIANCE with Standard of Practice 6.1 requiring that the site identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

Marlin has developed standard procedures for the safe operation of the cyanide facilities. The procedures are updated annually according to the requirements of OHSAS 18000 certification. They require where necessary the use of PPE and pre-work inspections.

Marlin has developed a procedure for management of change that is used when a change is proposed that can affect the quality, health, safety, an efficiency of the operations and workers. The auditors reviewed completed examples management of change forms from throughout the recertification period to verify compliance.

Marlin seeks the workers' opinions for the development and evaluation of the standard procedures by means of direct communication, the DELTA system, safety audit committees, and a safety class. Marlin obtains input from the discussions during the above activities. The auditors reviewed these materials and attendance lists from throughout the recertification period to verify compliance.

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.

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 6.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 6.2 requiring that the site operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

Marlin operates and monitors their cyanide facilities to protect workers and periodically evaluates the effectiveness of their program. To limit the production of HCN gas, Marlin's written procedures specify a pH of 11.5 for mixing, a pH of 10.5 for production activities, and a pH of 12.0 for the gravity (Gekko) circuit. Initial and final pH levels are documented on a checklist during mixing events. The process pH levels are monitored in a continuous manner from the control room by means of the SCADA system and in the plant by means of fixed pH monitors. In addition, Marlin's written procedures specify three alert levels for HCN gas: (1) warning level = 2.3 ppm, (2) evacuation level = 3.7 ppm, and (3) maximum permitted level = 4.7 ppm.

Marlin has installed fixed HCN gas monitors in the areas where potential cyanide exposure to the workers exists. Furthermore, all the workers who enter the plant are required to carry personal HCN monitors.

Marlin has identified the areas and activities where the workers may be exposed to cyanide and has included the appropriate PPE in the procedures. Marlin has developed a risk map based on ambient HCN measurements. The risk map was most recently updated in October 2015 and no changes in monitoring locations were indicated.

Marlin calibrates the fixed and portable HCN gas monitors on a monthly basis. The calibration and maintenance records are kept for a 5-year period and are available at the mine.

Warning signs have been installed in all the areas to alert the workers of its presence and prohibit activities like drinking, eating, and smoking. Signs have also been installed to indicate the required use of PPE to enter areas where cyanide is used.

Showers, low-pressure eyewash stations, and fire extinguishers are located at strategic locations throughout the operation. The proper functioning of the showers and eye wash stations in all the areas of the plant was verified by randomly testing them during the site visit and reviewing inspection and maintenance logs. Fire extinguisher records were also reviewed. All the pipelines and tanks that transport and contain cyanide were appropriately marked to indicate the flow direction and to specify the contents.

The availability of the MSDSs (in Spanish), first aid kits, and informative material in all the areas where cyanide is handled was verified.

Marlin has developed a procedure for incident investigation. This procedure includes investigation procedures, responsibilities during and after the investigation, communication lines and procedures for the continued implementation of corrective actions when applicable. Marlin reported only one minor cyanide-

related incident during the recertification period, caused by mixing of raw and process water during pump maintenance. The auditors reviewed the investigation report to verify compliance.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 6.3**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 6.3 which requires that the site develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

Marlin has developed and implemented emergency response plans to respond to worker exposure to cyanide. The availability of the antidote kits in the cyanide areas and in the hospital was verified. The kits are located in the leach and, grinding areas, the neutralization plant and in the onsite clinic. The kits include oxygen, amyl nitrite, sodium thiosulfate, sodium nitrite, activated carbon, water, and first aid kits. The kits are stored in compliance with the manufacturer's recommendations. The unloading, mixing, and cyanide sampling operators are equipped with radios while they perform their activities in order to notify a supervisor and the control room in the event of emergency. Marlin has established Channel 3 as an emergency channel. The antidote kits are inspected weekly and are stored according to the manufacturer's instruction. The records are kept for a 5-year period.

Marlin has the three emergency plans: (1) Master Emergency Response Plan; (2) Cyanide Emergency Response Plan; and (3) Tailings Dam Emergency Response Plan. These documents have specific procedures for emergency response in different exposure scenarios, lines of communication, report requirements, etc.

Marlin has an onsite clinic to provide first aid and medical assistance to workers exposed to cyanide. The onsite clinic has oxygen tanks, amyl nitrite, sodium nitrite, sodium thiosulfate, activated charcoal, a conventional defibrillator and oxygen masks, and two ambulances. A doctor is available 24 hours a day, 365 days a year. The auditors visited the clinic to verify compliance.

Marlin has an agreement with the San Martin Hospital in Huehuetenango in which the hospital acknowledges the possibility that they may need to provide attention to Marlin workers who have been exposed to cyanide and acknowledges that the doctors have received the proper training for dealing with

cyanide-poisoned patients. The auditors reviewed the most recent letter (2015) from the hospital to verify compliance.

Marlin has performed mock drills based on the possible release and exposure scenarios to test the response procedures and incorporate the lessons learned. The auditors reviewed the eight cyanide-related mock drill reports from throughout the recertification period to verify compliance.

PRINCIPLE 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.

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 7.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.1 which requires that the site prepare detailed emergency response plans for potential cyanide releases.

Marlin maintains three emergency response plans which describe the procedures to follow in response to cyanide releases, as well as cyanide exposures. The plans are: Master Emergency Plan, Cyanide Emergency Plan, and TSF Emergency Plan. In addition, Marlin has developed procedures for spills during mixing, broken pipelines, tank overflows, power failure, failure of the cyanide destruct circuit, failure of the TSF seepage collector, and release of HCN gas. The emergency plans list the communication protocols with neighboring communities to advise them in a timely manner in the event of a cyanide related emergency that could affect the communities.

Emergency response planning for onsite transportation accidents is described in the Marlin Cyanide Emergency Response Plan. DuPont and its supply chain are responsible for offsite transportation accidents. The DuPont supply chain is fully certified under the Code. By virtue of that certification, emergency response planning has considered the route, physical and chemical form of the cyanide, transport method, road condition, and the design of the trucks.

The TSF Emergency Response Plan includes a current list of the names and contact information of the community leaders for local communities downstream of the dam. Together with the community leaders, Marlin has implemented an early alert system that includes the use of radio systems for communication. The use of this system and the proper operation of the equipment was checked in the field.

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

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 7.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.2 which requires that the site involve site personnel and stakeholders in the planning process.

Marlin has involved workers and other parties in emergency planning. Marlin discusses new procedures and safety topics in the safety meetings. Marlin provides workers an opportunity to communicate their concerns during these meetings.

Marlin also has joined together with external collaborators and local authorities to communicate their roles in the event of a cyanide-related emergency. Marlin, in collaboration with DuPont, has provided cyanide-related training to external firefighters located along the transportation route, to doctors from the hospital in Huehuetenango, to Red Cross representatives, and others. Marlin has a current agreement with the San Martin Hospital in Huehuetenango to treat workers who may have been exposed to cyanide. Marlin has provided cyanide-related training to external firefighters, local authorities, external doctors and representatives of neighboring communities. In addition, the Department of Sustainable Development has provided training on communication in the event of an emergency and evacuation procedures to the community leaders who could be affected in the event of an accident during the transport of cyanide or from a failure/break in the tailings dam. The mine keeps a complete list of the houses and contact information of the inhabitants of the areas potentially affected by an emergency.

Marlin also provides verbal and written information to the communities about the meeting points in the event of an emergency and the possible dangers from a cyanide explosion. The Master Emergency Response Plan has a current list of the contact information of the interested parties for the purpose of notifying local communities, hospitals, local authorities, and police in the event of an emergency.

Standard of Practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

Marlin is

- ☒ **in full compliance with**
- ☐ in substantial compliance with **Standard of Practice 7.3**
- ☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.3 which requires that the site designate appropriate personnel and commit necessary equipment and resources for emergency response.

The Marlin emergency response plans designate personnel, equipment, and resources for emergency response. The cyanide-related elements of the emergency plans contain a protocol that identifies the

response coordinators and their alternates. There is a list of the internal and external emergency response teams and their call out information. Procedure CICN-PRO-08 describes the training requirements for emergency responders. The emergency plans specify the responsibilities and duties of the coordinators and team members, as well as the roles of external collaborators and community leaders. The emergency plans also include a list and location map of the emergency response equipment. Marlin performs regular, documented inspections on the emergency response equipment.

Marlin maintains and designates the appropriate teams and personnel for cyanide-related emergency response. Marlin maintains constant communication with external entities included in their plans through training in cyanide-related topics, simulations, and community meetings. Marlin has an agreement with the San Martin Hospital in Huehuetenango to treat workers who may have been exposed to cyanide. Marlin also provides training for emergency communication and evacuation procedures to the leaders of the neighboring communities that could be affected from a cyanide-related emergency. Marlin has also established evacuation routes and meeting points for the communities located downstream of the dam and they are included in the emergency response plans.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 7.4**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.4 which requires that the site develop procedures for internal and external emergency notification and reporting.

The Master Emergency Response Plan includes the procedures and contact information for notifying all the interested parties, including management, regulatory agencies, external providers and medical facilities, in the event that a cyanide-related emergency should occur. The Master Emergency Response Plan and the TSF Emergency Response Plan include procedures for contacting the neighboring communities that could be affected by a cyanide-related emergency, as well as communication protocols for communication with the media. These documents include current contact information. Marlin has also implemented an early alert program for the community leaders using a radio system. The radios are regularly inspected and the proper functioning of the system was checked during the audit.

Standard of Practice 7.5: **Incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.**

☒ **in full compliance with**

Marlin is ☐ in substantial compliance with **Standard of Practice 7.5**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.5 which requires that the site incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

Marlin's Cyanide Emergency Plan includes procedures for the recovery or neutralization of solutions or solids; decontamination of soil and water; handling spills; decontamination methods; disposal of soils; and monitoring soils and water. In addition, Marlin has a specific procedure for neutralizing cyanide spills that includes mixing instructions and a remediation endpoint of 0.2 ppm WAD cyanide. Marlin's potable water supply well (MW-5) would not be affected by a cyanide spill or leak as it is located upgradient from the mine facilities. Marlin will provide potable water to the affected communities in the event of an emergency such as a cyanide leak that could affect the local water supply.

The Cyanide Emergency Response Plan specifically prohibits the use of chemical substances such as sodium hypochlorite, iron phosphate, and oxygenated water for the treatment of cyanide contaminated surface water. The Cyanide Emergency Response Plan in Section 13 describes the methods for post-detoxification sampling of soil and water.

Standard of Practice 7.6: **Periodically evaluate response procedures and capabilities and revise them as needed.**

☒ **in full compliance with**

Marlin is ☐ in substantial compliance with **Standard of Practice 7.6**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 7.6, which requires that the site periodically evaluate response procedures and capabilities and revise them as needed.

The emergency response plans have been updated during the recertification period and would be updated when changes are needed, as for example, immediately after a mock drill in order to incorporate improvements to the procedures. The contact information is updated as needed. The title blocks on the

plans list the revision number and revision dates that support that the plans have been updated during the recertification period.

Marlin performs mock drills on a regular basis. Eight cyanide-related mock drills were performed during the recertification period. These mock drills include both exposures and releases. The auditors reviewed mock drill reports and verified that the post drill corrective actions were completed.

PRINCIPLE 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.

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 8.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 8.1 which requires that the site train workers to understand the hazards associated with cyanide use.

Marlin has developed training procedure which describes the training requirements that all workers exposed to the risks associated with cyanide must complete before starting work. The cyanide training consists of three modules: Module 1 applies to all department managers, plant visitors, and all plant operators, process maintenance workers, environmental staff, procurement staff, plant contractors, safety staff, clinic staff, and the emergency response team. Modules 2 and 3 are for process operators, process maintenance workers, waste management staff, chemical management staff, plant contractors, clinic staff, and the emergency response team. Module 1 covers cyanide hazard recognition, including risks, cyanide properties, exposure pathways, and exposure symptoms.

The training procedure also requires refresher training on the modules at least once a year. The module training records were checked for the compliance. Additionally, the Leach Supervisor's training sheet was checked to corroborate that the refresher trainings related to cyanide were completed.

Marlin keeps hard copies of all the training certificates related to cyanide for each worker for a minimum 5-year period. The records include the date, the name of the instructor, the class name, topics covered, and grade (when applicable). Additionally, Marlin keeps spreadsheets which has the records of training classes given at the mine. The records were checked for 2013, 2014, and 2015 to verify that initial and refresher trainings were provided.

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.

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 8.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 8.2 which requires that the site train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

Marlin has developed a training procedure which describes the task training requirements that process, maintenance, waste management, chemical management, clinic staff, and the emergency response team must complete before starting work. The required training elements are clearly described in each standard operating procedure. Module 2 also covers transport, packaging, and storage of cyanide, the process flow diagram for cyanide solutions, HCN monitoring, cyanide-related PPE, and prohibitions for cyanide safety. Refreshers on Module 2 are provided annually.

Marlin performs evaluations at the end of the training sessions for all the workers to verify the understanding and effectiveness of the material presented. The area supervisors perform scheduled worker observations to ensure that the procedures are followed before workers are allowed to work independently.

Marlins keeps the training records and evaluations of all the mine workers for the period that they are employed. The training matrix includes the topics discussed, date of the training, instructor, and name of the worker who received the training. Marlin keeps hard copies of the evaluations, as well as spreadsheets. The auditors reviewed these records for the recertification period to verify compliance.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 8.3**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 8.3 which requires that the site train appropriate workers and personnel to respond to exposures and environmental releases of cyanide.

Marlin has developed training procedure which describes the response training for cyanide exposures and releases that process, maintenance, waste management, chemical management staff, clinic staff, and the emergency response team must complete before starting work. Module 3 includes: emergency notification procedure, initial response to an emergency; locations of the emergency supply/equipment rooms; cyanide exposure pathways; use of oxygen cylinders; antidote procedures; fire response; spill response; and PPE for emergency response. The auditors reviewed training spreadsheets to verify compliance.

In addition, Marlin provides a course in First Response to Incidents involving Hazardous Materials (PRIMAP) to the emergency response team. These trainings are given several times a year. Training records were reviewed by year and the training history of a member of Marlin's emergency response team was checked.

Marlin has provided training to external collaborators (for example, firefighters, specialized teams, police, doctors, etc.) and community leaders on the emergency response plans in particular the plan for the TSF. The community leaders of Siete Platos and Salitre have also received training during two mock drills in early alert procedures for emergencies in the event of a possible break in the TSF.

Marlin performs frequent mock drills based on cyanide exposure and release scenarios for the purpose of testing the response procedures and incorporating the lessons learned into the emergency response plans. After every drill, a report is generated that records the efficiency of the drill and possible improvements to the procedures. Follow-up is completed to ensure the implementation of the corrective actions. The auditors reviewed eight mock drill reports related to cyanide from throughout the recertification period to verify compliance.

Marlin keeps a hard copy of all the training records and spreadsheets which have the names of all the employees, trainers, topics covered, and dates of training. Similarly, Marlin keeps a record of worker training assessments. The auditors reviewed these records to verify compliance.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

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

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 9.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 9.1 which requires that the site Provide stakeholders the opportunity to communicate issues of concern.

Marlin provides opportunities for stakeholders to communicate issues of concern regarding cyanide management via various activities. Marlin organizes community visits to the mine on a weekly basis. During these visits, Marlin distributes questionnaires in which the visitors have the opportunity to voice their concerns about the operation. Marlin also gathers community concerns and doubts by means of a suggestion box. Marlin also has an education program for communities located along the cyanide's route to the mine. Marlin has trained personnel who can communicate with the local populations in Spanish, as well as in Mam (a Mayan language spoken in Huehuetenango and parts of Guatemala).

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

☒ **in full compliance with**

Marlin is

☐ in substantial compliance with **Standard of Practice 9.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 9.2 which requires that the site initiate dialogue describing cyanide management procedures and actively address identified concerns.

Marlin has developed opportunities for stakeholder input via various activities. Marlin organizes community visits to the mine on a weekly basis. During these visits, Marlin distributes questionnaires in which the visitors have the opportunity to voice their concerns about the operation. Marlin also has an education program for communities located along the cyanide transportation route to the mine. Marlin also works with the Association for Community Environmental Monitoring (AMAC) to collect water quality samples. AMAC is made up of a select group of community leaders who participate in a quarterly monitoring program made up of three parties; the government, AMAC, and Marlin. Each party takes three samples which are sent to

independent laboratories. Once the results are received the three parties get back together to discuss the results. Finally, AMAC presents a detailed report of the activities performed during the year. This program promotes transparency and also offers the communities the opportunity to communicate with the operation.

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

Marlin is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 9.3**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in FULL COMPLIANCE with Standard of Practice 9.3 which requires that the site make appropriate operational and environmental information regarding cyanide available to stakeholders.

Marlin provides operational and environmental information regarding cyanide to stakeholders. Marlin provides written and oral information in Spanish and Mam to all the interested parties which includes the basic principles of cyanide management and basic emergency response training. Goldcorp keeps updated information on their corporate website on how the cyanide activities are handled in their operations (http://www.goldcorp.com/English/Responsible-Mining/Reporting/default.aspx).

Marlin has not had a significant cyanide-related incident that required reporting under the Code during the recertification period. Marlin has an incident management system in which the different categories of incidents are defined, including the notification requirements for each case. In Marlin's case, all cyanide-related incidents that are Category IV or greater must immediately be reported to the ICMI and regulatory authorities.

Report Signature Page

GOLDER ASSOCIATES INC.

Kent R. Johnejack
ICMI Lead Auditor and Mining Technical Specialist

Juan Cartajena
Support Auditor

Date: May 12, 2016

KJ/JC/rt

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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates Inc.
4730 N. Oracle, Suite 210
Tucson, AZ 85705
Tel: (520) 888-8818
Fax: (520) 888-8817

Golder Associates

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