

**INTERNATIONAL CYANIDE MANAGEMENT CODE
GOLD MINING OPERATION RECERTIFICATION AUDIT
BARRICK HEMLO, CANADA**

SUMMARY REPORT

Submitted to:

*Williams Operating Corporation
P.O. Bag 500,
Marathon, Ontario, Canada P0T 2CE0*

and

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Submitted by:

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March 9, 2017

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

TABLE OF CONTENTS

1. Introduction, Summary, and Attestation	3
2. Location and description of mining and milling operation.....	4
3. Summary Audit Report.....	8
Principle 1 – Production.....	8
Principle 2 - Transportation	9
Principle 3 – Handling and Storage	10
Principle 4 - Operations.....	12
Principle 5 – Decommissioning.....	19
Principle 6 – Worker Safety.....	20
Principle 7 – Emergency Response.....	23
Principle 8 – Training.....	26
Principle 9 – Dialogue.....	29

Hemlo Mine
Name of Facility



Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

1. INTRODUCTION, SUMMARY, AND ATTESTATION

This summary report has been prepared to meet the requirements and intentions of the International Cyanide Management Institute (ICMI) to demonstrate that following named project has met the obligations in implementing the International Cyanide Management Code (Code).

Name of Project: Barrick Hemlo

Project Owner / Operator: Williams Operating Corporation (WOC)

Name of Responsible Manager: Andrew Baumen, General Manager

Address and Contact Information: Williams Operating Corporation
P.O. Bag 500,
Marathon, Ontario, Canada P0T 2E0

Audit Company: Environmental Resources Management (ERM)

Audit Team:

Lead Auditor: Michelle Gillen CEA
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Gold Mining Technical Expert Auditor: Judy Fedorowick, CEA, EMSLA
Email: judy.fedorowick@erm.com

Date of Audit: This recertification audit was conducted October 3-6, 2016.

Auditors Findings:

	<input checked="" type="checkbox"/>	in full compliance with	
Barrick Hemlo Mine	<input type="checkbox"/>	in substantial compliance with	International Cyanide
is	<input type="checkbox"/>	not in compliance with	Management Code

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

<u>Hemlo Mine</u>		<u>March 9, 2017</u>
Name of Facility	Signature Lead Auditor	Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

Attestation:

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

<u>Michelle Gillen</u>		<u>March 9, 2017</u>
Name of Auditor	Signature of Lead Auditor	Date

Name and Signature of Other Auditors:

<u>Judy Fedorowick</u>		<u>March 9, 2017</u>
Name of Auditor	Signature Auditor	Date

2. LOCATION AND DESCRIPTION OF MINING AND MILLING OPERATION

Barrick Hemlo is a combination of three mine properties (Golden Giant Mine, David Bell Mine and Williams Mine). All of the major cyanide facilities are associated with the Williams Mine. The David Bell Mine has been decommissioned since the last certification and there are no longer any mining operations occurring there. The Golden Giant Mine has been decommissioned and there are no longer and mining operations occurring there. Some infrastructure supporting items such as stormwater management remain in place. The operation refers to itself as Barrick Hemlo (Hemlo). This report refers to the operation as Hemlo. Hemlo is located in the District of Thunder Bay, Bomby Township near the north shore of Lake Superior, at approximately 85o 53' W longitude and 48o 40' N latitude. The site is adjacent to Highway 17, approximately 37 kilometers (km) east of Marathon, 350 km east of Thunder Bay and 430 km northwest of Sault Ste. Marie.

The active cyanide facilities at the Hemlo operation include:

- Grinding Circuit
- Gravity Concentration Circuit
- Pre-Leach Thickener

<u>Hemlo Mine</u>		<u>March 9, 2017</u>
Name of Facility	Signature Lead Auditor	Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

- Cyanide Storage Tank and Offload Facility
- Cyanide Leach Circuit (re-built in kind, 2 done)
- Tanks (9)
- Carbon-In-Pulp (CIP) Circuit (6 tanks)
- Carbon Strip Circuit
- Barren Solution Tank
- Loaded Solution Tank
- Tailings Pump Box
- Tailing Management System (TMS – includes tailings pond and polishing pond)
- TMS pipeline systems
- Williams Paste Plant

All milling is performed at the Williams Mill. The grinding circuit includes two parallel trains, each comprised of a semi-autogenous grinding (SAG) mill, a ball mill, a deister screen and secondary cyclones. The gravity concentration circuit in each grinding train employs a Knelson concentrator for gravity gold recovery. The grind slurry enters a large pre-leach thickener at approximately 25 percent solids, and the resulting thickener underflow is transferred to the cyanide leach circuit at approximately 50 percent solids.

The cyanide leach circuit consists of nine leach tanks; however, the operation varies the number used from seven to nine depending on operational needs. Gold is extracted from solution in the CIP circuit, which consists of six tanks. Loaded carbon is stored in two storage vessels. Acid (nitric) and caustic are used in the carbon strip circuit and the loaded strip solution is pumped to a surge tank prior to entering the electro-winning circuit located within the refinery. Barren strip solution is stored in a surge tank adjacent to the loaded strip solution surge tank. The stripped carbon is reactivated via acid washing and a regeneration kiln.

Tailings from the CIP circuit report to the tailings pump box. Approximately 20-30 percent (86,000 MT target) of the tailings are pumped to the paste plant located at the Williams site. The paste plant is a standalone facility enclosed within a building with an adjacent, external thickener tank. Flyash and cement are used to bind the filtered tailings slurry and the final tailings paste is pumped into the underground mine workings as backfill. The remaining 70 to 80 percent of the CIP tailings is pumped to the tailings pond via a high-density polyethylene (HDPE) pipeline. The TMS consists of a large impoundment separated into two basins by an internal divider dam. One basin receives tailings slurry from the mill. The other basin functions as a polishing pond. The function of each basin (i.e., tailings deposition pond or polishing pond) changes periodically as the tailings management plan requires.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

Reclaim water from the tailings pond is returned to the mill for use in the grinding circuit. Polishing pond water also returns to the mill for re-use in Actiflo, dust suppressant, paste, and pump gland water. Some water from the Actiflo tank is also used as dust suppression water in the underground mine.

Sodium cyanide is delivered in liquid form and is offloaded to the cyanide storage tank located within the mill building at the Williams site. The grinding and process circuits are also located inside the mill building, with the exception of the large, 215-foot diameter pre-leach thickener located on the north side of the mill building. As noted above, the paste plants are located within separate buildings and each plant has a thickener tank located outside. The Williams paste plant building and thickener tank are located immediately northwest of the mill building.

Weak Acid Dissociable (WAD) cyanide concentrations in the tailings pond reclaim, are well below a target of < 50 ppm. Therefore, because reclaim water from the tailings pond is returned to the mill for use in the grinding circuit, the milling and gravity concentration equipment are considered cyanide facilities under requirements of the International Cyanide Management Code (ICMC).

The Hemlo operation also operates an Effluent Treatment Plant (ETP) at the TMS on a seasonal basis (permitted April through November) to treat water from the polishing pond prior to discharge to the receiving environment (surface water). The ETP is designed to precipitate antimony and heavy metals and to adjust pH levels. Reagents used in the process include ferric sulfate and lime. Hemlo relies on natural degradation of cyanide in the polishing pond, and the water is not specifically treated to reduce cyanide levels; although, the plant includes a destruct circuit, which utilizes hydrogen peroxide and copper sulfate in the event cyanide levels are above the allowable discharge standards. The cyanide destruction was used occasionally in 2014/2015, but has not been used in 2016. The WAD cyanide concentrations in the ETP feed are consistently below 0.5 mg/L.

Hemlo receives liquid sodium cyanide in specially engineered tanker trucks from Cyanco's Cadillac Facility. The sodium cyanide is delivered by Quality Carrier's Inc. Cyanco and Quality Carriers are signatory to the Code and both companies are certified as compliant with the ICMC. Hemlo stores and manages sodium cyanide in engineered tanks, pipelines, and a tailings storage facility that have had appropriate Quality Assurance and Quality Control (QA/QC) during construction. Hemlo employees are trained in cyanide hazards and first aid, first response, emergency response, and specific operational task training. Hemlo facilities are fenced to preclude wildlife and livestock from entering reagent grade cyanide process areas. Hemlo conducts inspections to assure that facilities are functioning as designed and to monitor process solutions. Preventive maintenance programs are in place to assure the continuous operations. Hemlo has approved closure and reclamation plans along with financial assurance to support the appropriate management of cyanide solutions and solids.

Changes to the operation during the past three years include

- the construction of raises on Dams A, B (portion), D, E, and F for the TMS
- use of the CN destruct facility at the ETP in 2014 and 2015
- Upgrades to the reclaim water pipeline (valve shack 4 to valve shack)
- Upgrades (re-place in kind of 2 of the 9 cyanide leach tanks)

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

- Decommissioning of the surface infrastructure at the David Bell Mine

No other significant changes in the operation or facilities were reported.

The Hemlo operation was found to be in Full Compliance with the International Cyanide Management Code; and this operation has not experienced compliance problems during the previous three-year audit cycle.

Hemlo Mine
Name of Facility



Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

3. SUMMARY AUDIT REPORT

PRINCIPLE 1 - PRODUCTION

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

Standard of Practice 1.1: ***Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.***

	<input checked="" type="checkbox"/>	in full compliance with	
The operation is	<input type="checkbox"/>	in substantial compliance with	Standard of Practice 1.1
	<input type="checkbox"/>	not in compliance with	

Basis for Audit Finding:

Cyanco Canada Inc. (Cyanco) is the cyanide supplier to Hemlo since January 2009. Cyanco was originally certified October 3, 2006, and recertified November 22, 2016. Amendment #4 extends the terms of the original contract between Cyanco and all of Barrick facilities in the Americas to March 31, 2019. Liquid cyanide is shipped by rail from Cyanco's production facility in Winnemucca, Nevada to Cadillac, Quebec. In Cadillac the cyanide is transferred to truck trailers and is truck transported to the Hemlo Mine.

The contract between Barrick Gold of North America (Barrick) and Cyanco states that Cyanco shall comply with the ICMC's "Principles and Standards of Practice" during the manufacture, transportation, storage, use and disposal of the product (cyanide) and the supplier shall only deliver product (cyanide) produced in an ICMI Code certified facility.

Cyanco's Winnemucca Production Plant is a Code certified operation as reported on the ICMI website, and recertified November 22, 2016. The Cyanco Cadillac Facility (Cyanco Sodium Cyanide Transloading Terminal) is a Code certified operation as reported on the ICMI website: originally certified in January 4, 2007, recertified September 24, 2010, and recertified a second time October 15, 2013. At the time of this recertification Cadillac was still waiting on verification of its recertification.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

PRINCIPLE 2 – TRANSPORTATION

Protect communities and the environment during cyanide transport.

Standard of Practice 2.1: *Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 2.1**
 not in compliance with

Basis for Audit Finding:

Cyanco Canada Inc. (Cyanco) is the cyanide supplier to Hemlo since January 2009. Cyanco was originally certified October 3, 2006, and recertified November 22, 2016. Liquid cyanide is shipped by rail from Cyanco's production facility in Winnemucca, Nevada to Cadillac, Quebec. In Cadillac the cyanide is transferred to truck trailers and is truck transported to the Hemlo Mine. (Hemlo has purchased cyanide solely from Cyanco during the recertification audit period – 2014 through 2016.)

Cyanco's Winnemucca Production Plant is a Code certified operation as reported on the ICMI website – certified July 12, 2013. The Cyanco Cadillac Facility (Cyanco Sodium Cyanide Transloading Terminal) was originally certified in January 4, 2007, recertified September 24, 2010, and recertified a second time October 15, 2013 and waiting for posting of its recertification at the time of Hemlo's recertification.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 2.2**
 not in compliance with

Basis for Audit Finding:

The cyanide supply contract with Cyanco requires Cyanco to comply with the "Principles and Standards of Practice" of the International Cyanide Management Code during the manufacture, transportation, storage, use and disposal of Product (cyanide). Compliance with the Code requires that the supplier and transporter to conform to specific compliance matters set out in the Code's Cyanide Production and Cyanide Transportation Verification Protocols. These Verification Protocols specifically address packing, labeling, storage, transportation routes, unloading and other requirements transportation requirements

Cyanco transports the liquid cyanide to Cadillac, Quebec via Cyanco's US/Canadian Rail Transport



Hemlo Mine		March 9, 2017
Name of Facility	Signature Lead Auditor	Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

system. Cyanco US/Canadian Transport utilizes the Union Pacific Railroad and the Canadian National Railroad to transport bulk liquid cyanide between Winnemucca and Cadillac.

Quality Carriers Inc. is the trucking company responsible for transportation of the liquid cyanide from Cyanco's Cadillac facility to Hemlo's Williams mine. Quality Carriers is a Code certified operation as reported on the ICMI website – certified September 20, 2010. Based on email correspondence with Quality Carriers they have been re-audited and found in full compliance with the Cyanide Code. The most recent audit is dated February 25, 2014.

The cyanide supply contract between Barrick and Cyanco specifies that Hemlo takes ownership of the product at the time the liquid cyanide is delivered into the cyanide storage tank at the mine site. The cyanide supply contract between Barrick and Cyanco specifies that Barrick takes ownership of the product at the time the liquid cyanide is delivered into the cyanide storage tank at the mine site. Hemlo has bills of landing showing that Cyanco and Quality Carriers are the sole suppliers and transporters of the cyanide.

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.*

The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 3.1
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Basis for Audit Finding

The facilities for the unload and storage of cyanide have been designed and constructed in accordance with sound and acceptable engineering practices. The design and construction of the cyanide unload and storage facilities including piping have been completed appropriately as documented in final design and construction drawings prepared and stamped by a licensed engineer. The drawings include concrete and reinforcing layout, concrete elevations and section, steel fabrication details, liquid cyanide storage fabrication details, equipment and piping layout and elevations, piping details, and cyanide supply piping to barren strip area.

Liquid cyanide is unloaded into the cyanide storage tank located inside the Williams mill building. The unloading and storage area is located away from public access and surface waters, with the nearest water body being Moose Lake. Between the lake and the Mill Building is a storm water pond that would intercept any spillage from the mill. All personnel with access to the unloading and storage facilities,

Hemlo Mine		March 9, 2017
Name of Facility	Signature Lead Auditor	Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

including contractors receive site-specific health and safety training that includes cyanide hazard awareness. The cyanide unload pad on which the tanker truck parks when unloading liquid cyanide is constructed with cast-in-place reinforced concrete with curbed containment. The concrete unload pad is an adequate barrier to prevent seepage to the subsurface. All leakage on the offload pad and the tank containment area would gravity drain to the leach circuit containment sump via a polyvinyl chloride (PVC) drainpipe pipe (located within a concrete containment structure) connecting the two sumps and ultimately pumped into the process circuit. The tanker unload containment allows containment and recovery of all spilled solution. The Williams cyanide storage tank has level indicators (a pressure transducer and a float) and a high level alarm that prevent the overfilling. In addition, the cyanide levels within the tanks can be monitored from the control room. The cyanide supplier, Cyanco, has remote telemetry monitoring of the cyanide tank level to track cyanide usage and inventory, allowing them to dispatch cyanide loads when needed. The cyanide storage tank is located inside the Williams mill building and has adequate ventilation. The Williams mill building is within the fenced complex of the Williams Mining operation. There are no unsecured valves at the cyanide storage tank or unload system that would allow direct access to the liquid cyanide. Williams has isolated the cyanide storage tank and unload pad away from incompatible chemicals such as acids, strong oxidizers and explosives. No smoking or eating is allowed near the cyanide storage area or in the mill.

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

The operation is **in full compliance with** **Standard of Practice 3.2**
 in substantial compliance with
 not in compliance with

Basis for Audit Finding:

Hemlo and the cyanide supplier have developed SOPs to prevent exposures and releases during cyanide unloading. The procedures include a description and photograph of the valves and couplings on the tanker and the unload connections to operate to complete a liquid cyanide unload. The procedures cover the responsibilities for the transporter and the Hemlo operator. Unloading does not occur until a Hemlo operator is present to observe compliance with the PPE requirements, truck parking and chocking, and to unlock the unload piping. Both the transporter and the Hemlo operator check to confirm that the storage has sufficient capacity for the unload. The Hemlo operator is trained in the transporter PPE requirements, procedures, and emergency shut off locations. The transporter and the Hemlo operator have access to PPE and oxygen in the case of an emergency. The Hemlo operator observes the entire offload event including the disconnection upon completion of the offload.

Hemlo only receives liquid cyanide in tank trucks, and therefore waste management of used packaging or empty drums is not a concern.

Hemlo Mine  March 9, 2017
Name of Facility Signature Lead Auditor Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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 utilizing contingency planning and inspection and preventive maintenance procedures.

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 4.1**
 not in compliance with

Basis for Audit Finding:

The Hemlo operation has developed written management, operating and contingency plans and procedures for all cyanide facilities at the Williams Operations. The operating plans and procedures developed and implemented by Hemlo, which include task-specific SOPs and procedures to identify and evaluate operational changes, cover safe operation and management of the facilities. Additionally, Hemlo provides basic and specialty Common Core training modules to all Mill and process circuit operators, which provides the procedures that workers follow for the safe and proper operation of the Mill and process area equipment.

Hemlo has implemented inspection programs for cyanide facilities at the Williams Operations. These inspections cover the cyanide offload area, leach circuit, CIP circuit and carbon strip circuit, and include visual inspections of reagent pumps, process tanks, and piping for leaks and signs of corrosion, as well as containment areas. In addition to the daily process area inspections, safety inspections of the cyanide offload facility are conducted upon each delivery event. Hemlo also conducts routine inspections of the tailings systems and performs wildlife inspections daily, at minimum. The combination of inspections performed by operations, maintenance and safety personnel adequately encompass the cyanide facilities to ensure their safe and environmentally sound operation.

Hemlo has implemented a PM program for critical equipment. The PM schedule provides a listing of the equipment along with the planned time for maintenance. The PM system is managed using Oracle© software, which automatically produces PM work orders on an established schedule.

The Hemlo operation maintains two diesel power generators on site. The primary generator is located in the Mill building and a secondary generator is located at the tailings impoundment. The generator located in the Mill is capable of powering all critical process equipment during primary power outages.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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

- The operation is**
- in full compliance with**
 - in substantial compliance with **Standard of Practice 4.2**
 - not in compliance with

Basis for Audit Finding:

The Hemlo operation has implemented a continuous cyanide reduction program to optimize the use of cyanide and to control WAD cyanide concentrations discharged to the tailings pond. The end of pipe (end spill) target concentration at the discharge to the tailings pond is less than (<) 50 mg/L WAD cyanide. Hemlo uses an automated online cyanide monitor and controller system to regulate, and minimize, cyanide addition at the leach circuit. The controller monitors process parameters and online actual titrated cyanide values every 15 minutes to determine the amount of cyanide that should be added to drive the plant toward a desired set point. The online titration device acquires a sample from the process stream, performs the titration, and processes the result. The result provides feedback as to the deviation from the desired value (set point). Hemlo also performs manual titrations every 2 hours, to supplement data generated by the TAC 2000 system.

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

- The operation is**
- in full compliance with**
 - in substantial compliance with **Standard of Practice 4.3**
 - not in compliance with

Basis for Audit Finding:

Hemlo has developed a comprehensive, probabilistic water balance model, using Microsoft Excel[®] software, which tracks water flow throughout the engineered water management facilities at the Williams and David Bell sites, including the mines, Mill complex, and the tailings impoundment. Hemlo uses the 1:10-year wet runoff event to forecast water management requirements although the water balance model can be used to evaluate conditions for variable storm events as well. The design maximum operating water level in the TMS ponds is three meters below the embankment crests to allow for retention of a 100 year, 24-hour storm event while maintaining 0.5 meters of freeboard. Onsite precipitation data is collected by the Environmental Department and is used to recalibrate the water balance model on a monthly basis.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

The operating manual for the tailings facility describes the operating standards and procedures for the transport and containment of tailings, process water recycling, effluents and residues to ensure the economical, safe, and environmentally responsible storage and disposal of tailings and the management of water. Hemlo conducts operational and environmental inspections to evaluate the condition of the entire tailings management system. The Environmental Department inspects the water levels in the tailings facility two times per week, bathymetric surveys are conducted twice annually, and the design engineer conducts annual inspections of the facility embankments.

An overflow weir and launder system continuously maintains the solution level in the pre-leach thickener structure at a level approximately 1.5 feet below the top of the concrete ring wall. The overflow system reports to the process water tank located inside the Mill building, which feeds the grinding circuit. If the overflow system were to become blocked, process water would be lost and the grinding mills would shut down.

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

	<input checked="" type="checkbox"/>	in full compliance with	
The operation is	<input type="checkbox"/>	in substantial compliance with	Standard of Practice 4.4
	<input type="checkbox"/>	not in compliance with	

Basis for Audit Finding:

The tailings impoundment and the pre-leach thickener structure are the only facilities at the Hemlo operation in which open cyanide-bearing solutions are stored. The operation does not have other active solution ponds, open solution channels, or sumps. Hemlo manages its cyanide addition rates at the cyanide leach circuit to optimize cyanide use while maintaining WAD cyanide concentrations below 50 mg/L at the discharge to the tailings pond. Dilution water is added at the final tailings pump box to further lower cyanide concentrations in the tailings stream, if necessary. Although there are excursions whereby the tails discharging into the TMS is above 50 mg/L, the WAD cyanide concentrations are maintained well below 50 mg/L in the TMS, and as such no other protective measures for wildlife have been implemented.

The sole source of water introduced into the pre-leach thickener structure is reclaimed water from the TMS, which is also used in the grinding mill. WAD cyanide concentrations in the TMS reclaim water are well below 50 mg/L. Therefore, wildlife protective measures have not been implemented at the structure.

The tailings impoundment and related systems are inspected on a daily basis and include wildlife monitoring. Field personnel are trained to report wildlife observances according to the Hemlo Wildlife Management Procedure.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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

- The operation is** **in full compliance with**
- in substantial compliance with **Standard of Practice 4.5**
- not in compliance with

Basis for Audit Finding:

The Hemlo operation operates an Effluent Treatment Plant (ETP) at the tailings facility on a seasonal basis (permitted April through November) to treat water from the polishing pond prior to discharge to the receiving environment (surface water). The plant is designed to precipitate antimony and heavy metals and to adjust pH levels. In 2014, the cyanide destruct portion of the ETP was re-commissioned to reduce cyanide through the use of hydrogen peroxide and copper sulfate. The cyanide destruct portion of the ETP was not used in 2016 as water quality was acceptable for discharge without further treatment. Samples are taken three times each week during the treatment season according to Hemlo's Industrial Sewage Works Certificate of Approval with the Ontario Ministry of Environment and Climate Change (MOECC).

Effluent from the ETP is discharged to an ephemeral stream that drains to Frank Lake (the receiving water body downstream of the end-of-pipe discharge point). Water quality at Frank Lake is sampled four times each year (March, May, August, and October). End-of-pipe WAD cyanide concentrations for the ETP effluent for 2010, 2011, and 2012 were all below 0.5 mg/L. WAD cyanide; and Total cyanide concentrations at Frank Lake were 0.002 mg/L for all sampling events in 2013-2016. The Hemlo operation does not have an indirect discharge of cyanide solutions to surface waters and is not subject to a designated beneficial use for surface water. The quarterly, cyanide samples are sent to a certified outside laboratory in Thunder Bay, Ontario for cyanide analyses.

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

- The operation is** **in full compliance with**
- in substantial compliance with **Standard of Practice 4.6**
- not in compliance with

Basis for Audit Finding:

The Hemlo tailings facility consists of a large impoundment separated into two basins by an internal divider dam. One basin receives tailings slurry from the mill and the other basin functions as a polishing pond. The facility is designed, constructed, and operated to prevent seepage through the dam and foundations. The containment embankments are constructed with a low permeability compacted till core.



Hemlo Mine Name of Facility Signature Lead Auditor Date March 9, 2017

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

The divider dam separating the tailings pond and the polishing pond is a permeable structure. Collector dikes and seepage collection sumps are located along the perimeter of the facility at the downstream toes of the containment embankments. The tailings slurry delivery and water reclaim pipelines are constructed of HDPE material and are predominately located above ground to facilitate regular inspections. A series of catch basins and dump ponds exist along the tailings pipeline corridors to collect and control inadvertent pipeline releases or leakage. Water that collects in these ponds is pumped back to the TMS and not discharged to the environment.

Hemlo conducts regular monitoring of the tailings pond water levels and volumes to ensure that the operating criteria are being met. In addition, regular monitoring of groundwater quality is conducted to ensure that the facility is functioning as designed and protective of the environment. Water quality data for 2013 through 2016 demonstrated that WAD, Total, and Free cyanide concentrations in monitoring wells were below the detection limits (i.e., <0.002 mg/L WAD and Total, and <0.005 mg/L Free). There are no regulatory water quality standards for cyanide in Ontario, nor are there identified beneficial uses of groundwater for the Hemlo operation. However, Hemlo compares the measured groundwater quality with various Ministry of Environment Standards (guidelines). The Summary and Conclusions of annual Groundwater Monitoring Reports 2014 to 2015 did not identify any exceedances for cyanide in any of the monitoring wells.

The 215-ft diameter pre-leach thickener has concrete walls (ring beam) and a floor constructed of two layers of compacted sand with a 1-mm thick HDPE geomembrane placed between the upper and lower sand layers. The floor system is supported by compacted rockfill, sloped to the center. The entire structure is partially embedded in rockfill with approximately two-thirds of the concrete ring wall exposed. Therefore, this large structure essentially functions as a synthetic-lined pond. The physical integrity of the facility is inspected regularly and an overflow weir and launder system continuously maintains the solution level in the pre-leach thickener structure at a level approximately 1.5 feet below the top of the concrete ring wall. The facility does not employ a leak detection system and Hemlo does not conduct groundwater monitoring directly downgradient of the structure.

Approximately one-third of the mill tailings are sent to the paste plant to produce backfill for ground control in the underground mine workings. Prior to June 2007, Williams treated paste with admixture (ferrous sulfate and copper sulfate) to create a chemically stable metal-cyanide complex. In May 2007, the role of admixture in stabilizing cyanide came under scrutiny. Based on the pH-dependent chemistry and the caustic nature inherent to the paste, it was theorized that the risk of HCN release would be unlikely in the absence of admixture. An assessment was conducted to verify these assumptions and at no time did HCN levels meet or exceed 4.7 ppm.

Hemlo also conducts groundwater monitoring throughout the property. According to data presented in the 2013-2016 monitoring programs, seepage has not caused cyanide concentrations in groundwater to raise above laboratory detection limits and no remedial activity is currently required.

Hemlo Mine
Name of Facility



Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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

- The operation is**
- in full compliance with**
 - in substantial compliance with **Standard of Practice 4.7**
 - not in compliance with

Basis for Audit Finding

Cyanide storage and process tanks at the Williams operation are located inside buildings within concrete secondary containment (concrete floors and stem walls). A large pre-leach thickener is located outside, on the north side of the Mill building. The Williams paste plant facility is located inside a building within concrete secondary containment (concrete floors and stem walls). The paste plant thickener tanks are located outside the plant. Stormwater controls and sedimentation ponds provide secondary containment for the pre-leach and paste plant thickeners. The paste plant thickener has a concrete ring beam foundation with a leak detection and recovery system installed. The foundations for all other process tanks containing cyanide solution and slurry provide an impermeable barrier between the tank bottoms and the ground. Secondary containments for cyanide process tanks within the process buildings are sized to contain a volume greater than that of the largest tank within the containment and any piping draining back to the tank. The pond, which provide secondary containment for the large thickeners is adequate to contain the volume and design storm event and incorporates a pumping system, to provide additional capacity to account for the design storm event.

The concrete secondary containments provided for the cyanide process tanks in the Mill building and the paste plants have concrete floor sumps with dedicated pumps to collect and remove cyanide solution and slurry spillage for return to the process circuits. The Hemlo Spill Prevention and Contingency Program include a specific procedure for the sampling and remediation of contaminated soil to prevent adverse impacts on surface water or groundwater. The procedure also provides instructions for the proper disposal of cyanide-contaminated soil, which include returning the material to the Mill process or placing it in tailings facility. Hemlo prohibits the use of the sediment ponds for containment of material from the paste plant thickeners except in emergency situations.

Hemlo has constructed cyanide process pipelines with spill prevention and containment measures to collect leaks and prevent releases. Leak detection measures implemented for the tailings pipelines include a differential flow alarm system. Hemlo implemented a pipe-in-pipe system along a portion of the pipeline corridor between the Mill and the tailings facility where it runs alongside an environmentally sensitive area. Hemlo has also implemented a robust inspection program along the pipeline corridors. The corridors are patrolled and inspected daily. Based on the physical controls and inspection program implemented by Hemlo, adequate spill prevention and containment measures are provided for the tailings pipeline system.

Hemlo uses steel, HDPE and PVC pipelines for conveyance of cyanide solutions and slurries. All

Hemlo Mine		March 9, 2017
Name of Facility	Signature Lead Auditor	Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

cyanide storage and process tanks are steel. These materials are compatible with cyanide and high pH solutions.

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.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 4.8**
 not in compliance with

Basis for Audit Finding:

Hemlo has QA/QC programs for construction of new facilities and modifications to existing facilities; and QA/QC documentation exists for existing, constructed cyanide facilities as well. Evaluations and reports of the cyanide facilities concluded they have been constructed and are operated in general accordance with industry standards of practice and care. The reports and documents have been prepared by qualified professionals.

During 2105 and 2016, the final dam raises for the TMS were constructed. QA/QC was provided by the engineer of record. At the time of the 2016 Recertification Audit the final construction report was not available; however, the As-built drawings were on site and these were reviewed.

The 2016 Recertification Audit verified that all of the QA/QC documents are being maintained on site and are available for review

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 4.9**
 not in compliance with

Basis for Audit Finding

Hemlo has prepared and implemented written standard procedures for monitoring activities to evaluate the effects of cyanide use on wildlife, surface water and groundwater quality. The environmental programs have been prepared, approved and implemented by qualified professionals and include all appropriate sampling and analysis documentation. Review of field sampling forms, chain of custody and quality assurance data was completed.

Hemlo conducts monitoring at frequencies adequate to characterize the surface water and groundwater



Hemlo Mine Signature Lead Auditor March 9, 2017
Name of Facility Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

quality and wildlife mortalities. WAD cyanide concentrations for the ETP effluent are monitored over each treatment season and water quality at Frank Lake (receiving water) is sampled four times each year. Hemlo conducts surface water sampling for cyanide monthly and quarterly at various monitoring locations site wide, including two monitoring points located immediately downgradient of the tailings facility embankments. Hemlo conducts semi-annual monitoring of groundwater quality surrounding the tailings impoundment. Wildlife monitoring is integrated into the daily inspections performed at the tailings facility and field personnel are trained to report wildlife observances.

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.

	<input checked="" type="checkbox"/>	in full compliance with	
The operation is	<input type="checkbox"/>	in substantial compliance with	Standard of Practice 5.1
	<input type="checkbox"/>	not in compliance with	

Basis for Audit Finding:

Hemlo has developed written plans and procedures to decommission their cyanide facilities at the cessation of operations. The last update of the Williams Operating Corporation (WOC) Mine Closure Plan was prepared by AMEC August 2016. The Plan includes the mill and process circuit, tailings storage facility, polishing pond and the ETP. There is a separate appendix “M” titled Hemlo Cyanide Decommissioning and Decontamination Plan that documents specific actions related to the cyanide facilities. The schedule is described in yearly increments starting within one year of a decision to commence close out.

The David Bell Mine Closure Plan (prepared by AMEC Earth and Environmental) changed status with MNDM on April 14, 2014 to Temporary Suspension to initiate activities within the closure plan. At the time of the re-verification the activities in the 2010 closure plan were approximately 80% complete.

Ontario Ministry of Northern Development and Mines (MNDM) requires that mine closure liabilities be externally reevaluated with every process modification and hence the 2016 Closure Plan was updated due to the additional mining rights that were purchased. This was the first major update to the closure plan since 2010. The update did not include changes to the cyanide facilities (no change occurred) other than to account for modifications to the tailings line and TMS.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 5.2**
 not in compliance with

Basis for Audit Finding

Hemlo has developed a cost estimate for the funding of third party implementation of the decommissioning activities for Hemlo Mines. The cost estimates have been reviewed and approved by the MNDM. Hemlo has established approved financial mechanisms to cover the estimated costs for cyanide related 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 eliminate, reduce and control them.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 6.1**
 not in compliance with

Basis for Audit Finding:

Cyanide monitoring control programs (documents dated July 2016) frame the overall approach for minimizing employee exposure to cyanide through identification, and measures to eliminate, reduce or control possible scenarios. This framework document outlines the sources and engineering/administrative control programs, overall work practices, use of PPE, mapping of HCN limits, exposure investigations, training responsibilities and overall management responsibilities.

In addition, Hemlo has developed written Standard Operating Procedures (SOPs) and Operating Plans that describe how cyanide related tasks are performed. These plans and procedures cover the safe operation of the entire cyanide management facilities at Hemlo. Individual task specific SOPs provide details for safe operation of cyanide equipment, PPE requirements and inspection requirements. Hemlo has also signage for PPE requirements located at the entrances of the process areas. In addition, cyanide training materials discuss PPE requirements.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

Barrick has a Management of Change (MOC) Procedure that includes the methods to be used to manage changes at all Barrick Gold operations and sites. The procedure includes minimum standards to ensure changes that impact safety, health, environment or productivity are identified, assessed, managed and appropriately communicated to all affected personnel. The MOC requires a functional area review that requires completion of a health impacts questionnaire where cyanide management can be indicated as a trigger to be assessed in the MOC and focused risk assessment (FRA). Changes are communicated to the workforce and training requirements updated where necessary. Hemlo has safety meetings to provide information and training to employees as well as solicit input from employees on worker safety issues.

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.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 6.2**
 not in compliance with

Basis for Audit Finding:

Hemlo has determined the appropriate pH for limiting the evolution of hydrogen cyanide gas (HCN). The pH is monitored on a regular basis to maintain its concentration as recommended in the operating plans. Daily pH logs were reviewed to verify compliance. Fixed HCN monitors are installed in areas of potential exposure to cyanide. In addition, Hemlo requires the use of portable HCN meters to conduct work in areas where cyanide is present or for certain tasks. For example, prior to maintenance work or confined space entry, work areas are checked for HCN concentrations with a portable HCN meters. In addition Hemlo reviews cyanide monitoring data frequently to determine if additional tasks or stationary monitoring equipment should be installed.

The alarm levels for the HCN meters (fixed and portable) are set at 4.2 ppm low level alarm and 4.7 ppm high level alarm. All alarms require review and possible investigation and all alarms require evacuation from the area. In addition to an audible alarm, there are warning lights and an alarm display on the control room. HCN monitors are maintained, calibrated and inspected as recommended by the manufacturer.

Warning signs are in areas where cyanide is used to alert workers that cyanide is present, that smoking, open flames, eating and drinking are not allowed and that the necessary cyanide-specific PPE must be worn. Pipes carrying cyanide are marked and the direction of flow is indicated with arrows on the pipe. Signage for confined spaces at the tank entry points has also been placed.

Showers, low-pressure eye wash stations and non-acidic sodium bicarbonate fire extinguishers are located at strategic locations throughout the operation and are maintained, inspected and tested on a regular basis. MSDS are available through the Canadian Centre for Occupational Health and Safety website or in hard copy from Security. The MSDS and first aid procedures are in English, the language of the workforce. Hemlo has and implements procedures for accident and incident investigations associated with cyanide.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

in Canada which provides free basic medical care, the local hospital is obligated to treat all patients without exception and therefore emphasis has been more placed on informing staff of the response requirements to cyanide exposures. There is also a letter of agreement between Hemlo and the Hospital stating that outlines formal arrangements for assistance.

Mock emergency drills are conducted annual to test response procedures for various cyanide exposure scenarios and debriefs are conducted following the drills to review the adequacy of these plans.

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.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 7.1**
 not in compliance with

Basis for Audit Finding:

Hemlo has developed several plans and SOPs that address emergency response to potential accidental releases of cyanide. Hemlo plans contain procedures for potential scenarios such as: 1) cyanide intoxication; 2) accidents during cyanide transportation; 3) releases during offloading; 4) release of cyanide during fires and explosions; 5) pipe, valve or tank ruptures; 6) overtopping of ponds and impoundments; 7) power failure; 8) uncontrolled seepage; 9) tailings impoundment failure; 10) cyanide spill control and clean-up; and 11) decontamination and emergency evacuation.

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

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

Basis for Audit Finding:

Hemlo has involved its workforce and stakeholders in the emergency response planning through safety meetings and mock drills. Hemlo also meets with stakeholders to discuss its emergency response planning. Hemlo conducted a meeting with representatives of the Wilson Memorial General Hospital, the



Hemlo Mine Name of Facility Signature Lead Auditor Date March 9, 2017

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

Marathon Fire Department, the Ontario Provincial Police (OPP), and the Marathon ambulance. These agencies were actively involved in the mock drill that was conducted in 2010 and were communicated with during the mock spill in 2012 and 2014. Hemlo sponsors and conducts “Communities of Interest Meetings” with the participation of local communities. These meetings are conducted periodically and members of the general public and government leaders are encouraged to attend and discuss issues related to the mining operation including the use of cyanide at the mine site and the emergency response plans.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 7.3**
 not in compliance with

Basis for Audit Finding:

Hemlo has committed in its emergency response plans the necessary emergency response equipment and first aid to manage all cyanide incidents at the operation and to coordinate transportation to the nearest medical facility. The emergency response plans include the anticipated roles and responsibilities of the Superintendents and other emergency response team (ERT) members as well as an updated list of the members of the ERT. The plans also include call out procedures and 24-hour contact information for the management and emergency control team. Hemlo has a list of its emergency response equipment (e.g., fire, cyanide exposure and spill response equipment). Emergency equipment and supplies are inspected on a regular basis.

Hemlo has its own on-site capabilities for Firefighting, HazMat Clean-up and Medical Emergency. Emergency responders are trained in Advanced Medical First Aid, HazMat and Firefighting and receive annual refresher training. There are also records of training for the Wilson Memorial General Hospital located in Marathon, Ontario, in the use of the CYANOkits confirming their involvement in the use of kits should an employee require treatment.

The 2014 mock spill included initiation of the communication link to external emergency responders.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 7.4**
 not in compliance with

Hemlo Mine
Name of Facility



Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

Basis for Audit Finding:

The “Surface Emergency Procedures” plan includes procedures and contact information for notifying the management, regulatory agencies (e.g., Ministry of Labor (MOL), Ministry of Natural Resources, Mine Rescuer Officer, Ontario MOE, Environment Canada and other regulatory agencies) and outside response providers (e.g., Marathon Fire Department, Manitouwadge Fire Department, Marathon ambulance, hospital and OPP). The “Surface Emergency Procedures” Plan includes procedures for communication with the media.

The Contingency Plan for Notification of Downstream Users includes procedures and contact information for notifying the communities of Black River (Heron Bay Reserve and Pukaskwa National Park) and White River, that may be impacted in case of a major spill from the site.

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

- | | | | |
|-------------------------|-------------------------------------|--------------------------------|---------------------------------|
| | <input checked="" type="checkbox"/> | in full compliance with | |
| The operation is | <input type="checkbox"/> | in substantial compliance with | Standard of Practice 7.5 |
| | <input type="checkbox"/> | not in compliance with | |

Basis for Audit Finding:

The “Spill Prevention and Contingency Program” requires that immediate measures be taken to shutdown and isolate the source of the spill to minimize the spill quantity. Emergency containment structures would be constructed to minimize the extent of any releases to prevent released material from reaching natural drainages. The spilled solution will be removed and recovered back into the mill process or deposited in the tailings pond, as necessary. Soil samples will be taken following clean up to confirm complete removal of all cyanide contaminated materials. The plan describes what final cyanide concentration will be allowed in residual soil as evidence that the release has been completely cleaned up. Hemlo does not consider the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface waters.

The “Spill Prevention and Contingency Program” addresses the potential need for environmental monitoring to identify the extent and effect of a cyanide release. The plan includes a sampling protocol for spills to the environment. The protocol includes soils and water sampling procedures, parameters, sampling methodologies and potential sampling schedule and locations.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 7.6**
 not in compliance with

Basis for Audit Finding:

The emergency response plans are reviewed and evaluated annually through the Intellex document review system. Hemlo conducts mock drills on a regular basis to practice and prepare for emergencies and to provide insight into the effectiveness of its emergency response plans. The emergency response plans are also reviewed following any incident or mock drill requiring their implementation.

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.*

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 8.1**
 not in compliance with

Basis for Audit Finding:

Hemlo provides initial training and annual refresher training to all employees on Sodium Cyanide Site Awareness. This cyanide training includes Code Compliance requirements, uses of cyanide at Hemlo, location of cyanide, cyanide offloading, physical appearance, cyanide properties, cyanide exposure, precautions, HCN alarms, exposure limits, symptoms of exposure and emergency response. Hemlo retains all cyanide training records for all employees. The training modules have been updated annually in 2014, 2015, and 2016 to provide more in-depth coverage. Training records include the names of the employee and the trainer, the date of training, the topics covered (i.e. the training deck in most cases) and test results demonstrating an understanding of the training.

Standard of Practice 8.2: *Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the*

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

community and the environment.

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 8.2**
 not in compliance with

Basis for Audit Finding:

In addition to the “Sodium Cyanide Site Awareness Training,” all personnel in job positions that involve the use of cyanide and cyanide management (including offloading, production and maintenance) receive a “Sodium Cyanide Mill Training.” This training is more in-depth and covers where the cyanide is used in the process, physical appearance, cyanide properties, pH and HCN Evolution, cyanide exposure limits, routes of exposures and human effects, HCN monitoring (portable and fixed HCN monitors), HCN monitor alarms, safety showers, cyanide handling and offloading, PPE, leach circuit cyanide addition, maintenance procedures, cyanide SOPs and information, symptoms of exposure, emergency call procedures, first aid response (mild and severe poisoning), cyanide fire and cyanide spill response and clean up. Task-specific training is also provided prior to working with cyanide independently. Task specific training includes cyanide related SOPs and Operating Plans and covers all process circuits and activities. Training elements for each specific job are identified in training materials.

Hemlo requires and provides annual refresher for cyanide management to assure that employees continue to perform their jobs in a safe and environmentally protective manner. In addition, Hemlo discusses cyanide related health and safety issues as well as changes in cyanide management SOPs, if any, at safety meetings. Training effectiveness is verified through planned job observations where supervisors verify the competency of operators. Training records are retained throughout an individual's employment and were retrievable during the audit (electronically for the past 10 years).

Trainers as well as a number of managers are qualified trainers with the training department responsible for delivering training. These individuals are “Train the Trainer – Advanced” certified by North West Training & Development. The task specific training to new operators is provided by various process supervisors/trainers who have several years of experience in the mine process.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 8.3**
 not in compliance with

Basis for Audit Finding



Hemlo Mine March 9, 2017
Name of Facility Date
Signature Lead Auditor

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

All mill employees including personnel responsible for unloading, mixing, production, and maintenance are trained in the procedures to be followed if cyanide is released. This role was re-assigned to the security department (12 employees that work on shifts) which now acts as first responders. In addition to first aid training, first responders have AED, HAZMAT Level I and II training, and delivery of oxygen training. Mill employees are receive “Annual Refresher Training” on cyanide which includes physical appearance, cyanide properties, pH and HCN Evolution, cyanide exposure limits, routes of exposures and human effects, HCN monitoring (portable and fixed HCN monitors), HCN monitor alarms, safety showers, cyanide handling and offloading, PPE, leach circuit cyanide addition, maintenance procedures, cyanide SOPs and information, symptoms of exposure, emergency call procedures, first aid response including decontamination (mild and sever poisoning), cyanide fire and cyanide spill response and clean up.

The Emergency Response Coordinators and members of the ERT are trained in the emergency procedures described in the “Surface Emergency Procedures” Plan. This team also acts as the mine rescue team and therefore have additional training associated with this function such as the use of SCBAs, high ropes etc. The training includes responding to elements in the cyanide emergency response plan such as emergency actions for HCN Elevated Levels, PPE, First Aid for Cyanide Poisoning including the Cyanide Antidote Use and Decontamination Procedures, Major Releases of Liquid, Transportation Events, Off Site and On Site, Releases during Fire and Explosion Events, Pipe, Tank and Ruptures, and Overflow of Ponds and Impoundment Areas.

The site also holds annual mock emergency which cover both worker exposre and environmental releases. The drills are evaluated to review the adequacy of these plans and update training where needed. Documentation of the debriefs are retained.

Hemlo Mine
Name of Facility



Signature Lead Auditor

March 9, 2017
Date

**BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT**

PRINCIPLE 9 – DIALOGUE

Engage in public consultation and disclosure.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 9.1**
 not in compliance with

Basis for Audit Finding:

Hemlo provides many avenues of opportunity for stakeholders to communicate issues of concern regarding the management of cyanide at the mine. Hemlo sponsors and conducts “Communities of Interest Meetings” with the participation of local communities. These meetings are typically held twice a year or as the need arises and members of the general public and government leaders are encouraged to attend and discuss issues related to the mining operation including the use of cyanide.

On a Corporate level Hemlo participates in the Corporate Responsibility Management System (CRMS) for managing COIs. Based on interviews, there have been no complaints from the public regarding cyanide in the last three years.

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

The operation is **in full compliance with**
 in substantial compliance with **Standard of Practice 9.2**
 not in compliance with

Basis for Audit Finding:

Hemlo creates opportunities to interact with stakeholders and provide them with information regarding cyanide management practices and procedures. Hemlo sponsors and conducts “Communities of Interest Meetings” with the participation of local communities. These meetings are typically held conducted twice a year or as the need arises and members of the general public and government leaders are encouraged to attend and discuss issues related to the mining operation including the use of cyanide.

Hemlo has developed a pamphlet on Barrick’s Responsibility Use of Cyanide which was last distributed during a 2016 community meetings. The pamphlet includes Code Certification of Barrick mines, Worker Safety, Training, Manufacture, Transportation, Handling and Storage, Emergency Response, Cyanide and Gold Ore Processes, and Mine Closure.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date

BARRICK HEMLO, ONTARIO
ICMC RECERTIFICATION AUDIT - SUMMARY REPORT

Opportunities for public input were also available during the David Bell Mine Closure Plan consultation period. The presentation on the David Bell Mine Closure Plan included decommissioning of cyanide facilities.

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

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

Basis for Audit Finding:

Hemlo has developed written descriptions of how their activities are conducted and how cyanide is managed, and made these descriptions available to communities and stakeholders. Hemlo has developed a pamphlet on Barrick's Responsibility Use of Cyanide which is distributed during community meetings. The pamphlet includes Code Certification of Barrick mines, Worker Safety, Training, Manufacture, Transportation, Handling and Storage, Emergency Response, Cyanide and Gold Ore Processes, and Mine Closure. Barrick also has environmental personnel present at community meetings to help answer any questions regarding Hemlo. Although Ojibway speaking First Nations were identified as local COI, English is the preferred language.

There is currently no requirement for Hemlo to report a CN exposure unless it has resulted in a first aid (it would then be recorded in a log book), or a medical aid (at which time it would be reported through the Workmen's Safety Insurance Board and the Ministry of Labour (MOL)). Based on interviews, and a review of documentation listed, there have been no reportable releases or reportable exposures which would have required Hemlo to make information publicly available since the initial certification audit. The "Spill Prevention and Contingency Program" requires the company to report all spills/releases exceeding the reportable quantity and conditions to provincial and federal regulatory agencies (e.g., Ontario MOE, Environment Canada and others) as needed. Spill information reported to Ontario MOE is available upon request to public.

Hemlo Mine
Name of Facility


Signature Lead Auditor

March 9, 2017
Date