REPORT

ICMC Gold Mine Recertification Audit - Summary Report

Agnico Eagle Finland - Kittila Gold Mine

Submitted to:

International Cyanide Management Institute
1400 I Street NW - Suite 550
Washington DC 20005
United States of America

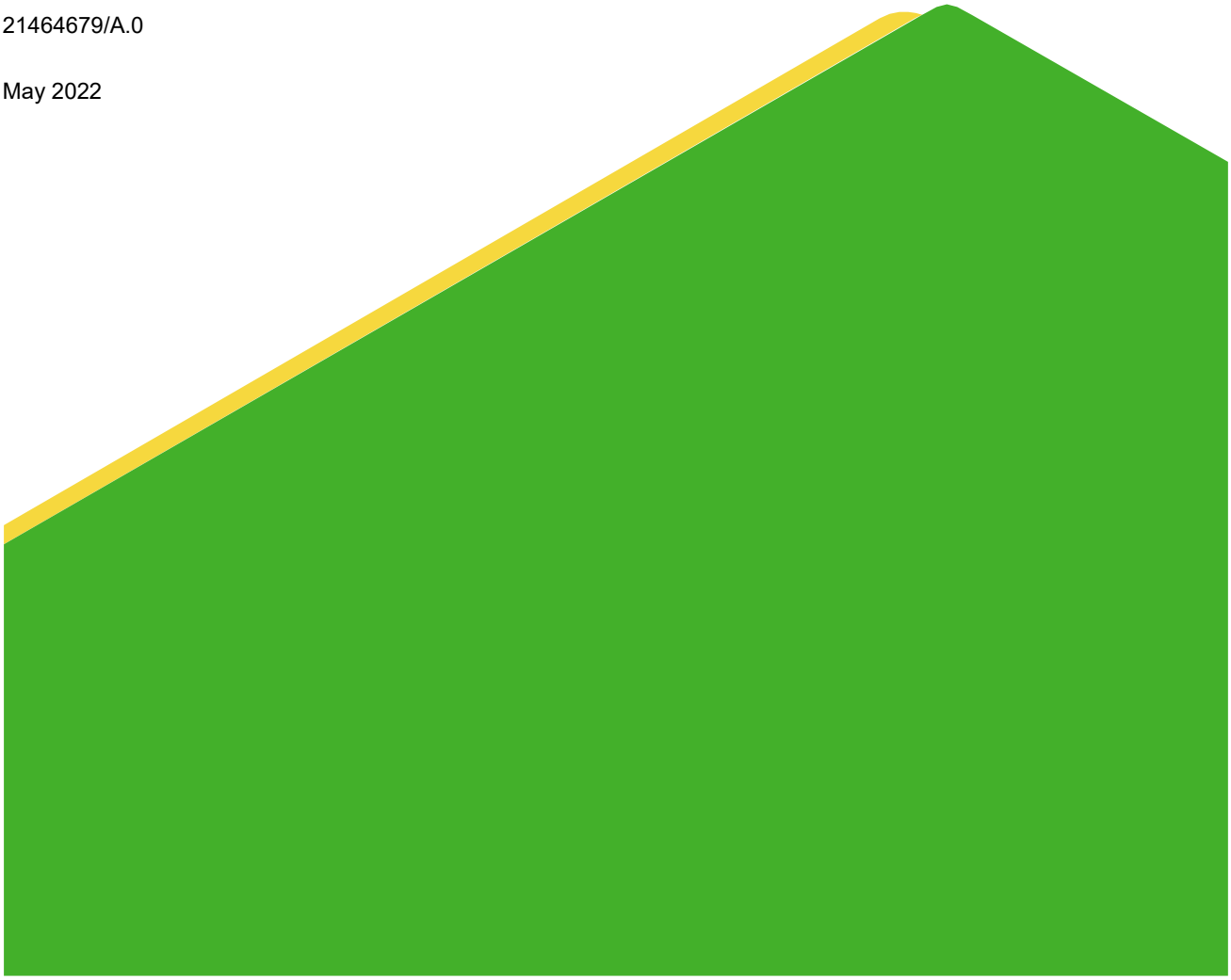
Submitted by:

Golder Associates (UK) Ltd Member of WSP
Attenborough House, Browns Lane Business Park, Stanton-on-the-Wolds,
Nottingham, NG12 5BL, UK

+44 0 115 937 1111

21464679/A.0

May 2022



Distribution List

International Cyanide Management Institute - 1 copy (pdf)

Agnico Eagle Finland OY - 1 copy (pdf)

Golder Associates (UK) Ltd - 1 copy (pdf)

Table of Contents

1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

Name of Cyanide User Facility:	Kittilä Gold Mine
Name of Cyanide User Facility Owner:	Agnico Eagle Mines Ltd, Canada
Name of Cyanide User Facility Operator:	Agnico Eagle Finland Oy
Name of Responsible Manager:	Tommi Kankkunen - General Manager
Address:	Kittilä Gold Mine Agnico Eagle Finland Oy Pokantie 541 99250 Kiistala Lapland
Country:	Finland
E-Mail:	Tommi.kankkunen@agnicoeagle.com

2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

2.1 Mine Location

Agnico Eagle Finland's (AEF's) Kittilä mine is located in the municipality of Kittilä, a few kilometres (km) northeast of Kiistala village about 50 km northeast of the village of Kittilä in the Lapland region of northern Finland, approximately 1025 km north of Helsinki and 150 km north of the Arctic Circle.

2.2 Background

AEF's Kittilä mine is located in the municipality of Kittilä, a few kilometres northeast of Kiistala village about 50 km northeast of the village of Kittilä in the Lapland region of northern Finland, approximately 1025 km north of Helsinki and 150 km north of the Arctic Circle.

The Kittilä ore bodies were initially mined from two open pits (Suuri and Roura) and underground operations were added in October 2010. Roura open pit was mined out in March 2011 and Suuri open pit in November 2012, and mining is now entirely underground in the Suuri and Roura deposits. Additional, small open pits will mine any remaining near-surface reserves in the future.

The underground method is open stoping followed by delayed backfill. Approximately 16 km of tunnels are developed each year to ensure sufficient ore production is available to keep the mill supplied. After extraction, stopes are backfilled with cemented backfill or paste backfill with NP tailings to allow the safe mining of adjacent stopes. Ore is transported to the surface crusher using underground haul trucks via a 4,400 metre-long ramp access system.

Around 2 million tonnes of ore are extracted annually. The mine's annual gold production comes to roughly 7,000 kg. At current production volumes, the Kittilä mine's known reserves are expected to produce gold until 2034.

The gold in the Suurikuusikko deposit is refractory; with most of the gold locked inside sulphide grains and only about four per cent existing as free gold. The mineral processing at Kittilä comprises crushing, grinding, flotation, pressure oxidisation (autoclave), dissolution and electrowinning and smelting in a furnace before pouring into doré bars.

The process produces two tailings flows. The first flow is a flow of flotation tailings, named NP tailings (Neutralisation Plant tailings), which represents about 85% of the production, and whose supernatant is partly discharged through the infiltration field to Seurujoki River and partly recirculated to the mill. The second flow, is a flow of CIL (Carbon in Leach) tailings (after carbon in leach circuit and detox), which represents some 15% of the production and whose supernatant water is recirculated back to the mill. The total tailings area is approximately 110 ha and all ponds are lined with impermeable bitumen liners.

Changes since the last audit include:

- 3 new CIL tanks have been added making the total now 12 CIL tanks;
- One new cyanide warehouse has been added adjacent to the original cyanide warehouse; and
- Cyanide unloading area has been modified and a roof has been added.

3.0 SUMMARY AUDIT REPORT

Auditors Findings

Angico Eagle Kittilä Gold Plant is:	☒ in full compliance with ☐ in substantial compliance with ☐ not in compliance with	**The International Cyanide Management Code**

Audit Company:	Golder Associates (part of WSP)
Audit Team Leader:	Dale Haigh, Lead Auditor
Email:	dhaigh@golder.com

This operation has not experienced any compliance issues during the previous three year audit cycle.

Name of Other Auditors

Marié Schlechter, ICMI (International Cyanide Management Institute) Pre-approved Mine Technical Auditor

Dates of Audit

The Re-certification Audit was undertaken between 15 to 18 November 2021.

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 Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

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 certified 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**

The operation is ☐ in substantial compliance with **Standard of Practice 1.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 1.1; to purchase cyanide from certified manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

AEF's contract with all cyanide manufacturer(s) and distributor(s) requires that cyanide be produced at a facility that has been certified as being in compliance with the Code.

CyPlus GmbH (CyPlus), located in Wesseling in Germany, is the cyanide producer for the Kittilä operation. The contract is between Agnico Eagle Mines (AEM) based in Finland and CyPlus. The current contract dated 22 January 2020 (was originally agreed in 2017) is running from 1 January 2017 to 31 December 2022.

An associated agreement letter dated November 2019 specifies that both parties agree to comply with the Principles and Standards of Practice of the ICMC (International Cyanide Management Code).

CyPlus' production facility was re-certified as compliant with the code on 23 February 2022; it was originally certified in 2006. AEF has copies of the CyPlus Summary Audit Reports as posted on the ICMI website thereby demonstrating compliance with the ICMI production protocol.

PRINCIPLE 2 – TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

Standard of Practice 2.1: **Require that cyanide is safely managed through the entire transportation and delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training and emergency response.**

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 2.1; require that cyanide is safely managed through the entire transportation and delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training, and emergency response.

CyPlus is the ICMI Code's consignor of cyanide to Kittilä. CyPlus' Supply Chain #1 Wesseling Plant to International Ports of Entry was originally certified by the ICMI on June 2, 2011 and was last recertified in March 2021.

Transport of cyanide in Finland is covered by CyPlus' Supply Chain #6, Finland which was last certified 6 April 2022.

The route to the Kittilä mine is as follows:

- By road from CyPlus' Wesseling production facility to the Port of Cologne in Germany (CyPlus Supply Chain #1);
- By rail from the Port of Cologne to the Port of Hamburg in Germany (CyPlus Supply Chain #1);
- By sea to the Port of Kemi in Finland (by Hapag-Lloyd) (CyPlus Supply Chain #6); and
- By road to the Mine from the Port of Kemi (Korsu Oy) (CyPlus Supply Chain #6).

AEF holds and has provided an example of documentation showing the movement of cyanide from the production site to the AEF Mine Site.

All identified transporters are individually certified in compliance under the Code or included in certified supply chain(s).

CyPlus' production facility in Wesseling, Germany was re-certified as compliant with the code on 23 February 2022; it was originally certified in 2006.

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.**

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with 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 cyanide reagent facilities consist of the solid cyanide offloading and storage warehouse areas, mixing tank and storage tank.

Facilities for unloading, storing, and mixing cyanide have been designed and constructed in accordance with cyanide producers' guidelines, applicable jurisdictional rules and sound and accepted engineering practices for these facilities. The process plant design was undertaken by engineering firm SNC Lavalin, while the building plant design was undertaken by engineering firm AHMA engineering in 2006 and built during 2006 to 2008.

A second solid cyanide storage warehouse was designed by Insinooritoimisto JUHA KUPARI OY in 2018.

A new CIL tank was constructed and installed in 2020. The base and the structure for the new tank was designed by Poyry Finland Oy.

All cyanide unloading and storage areas are within the AEF mine area and therefore access is restricted to mine workers and contractors. The storage of the cyanide at the AEF plant is in two warehouses and the mixing tank and storage tank are located inside the plant building. The two buildings are about 30 m apart. The cyanide warehouses are locked at all times and an electronic key is used to open the facilities.

There is no surface water located at the vicinity of the unloading and storage areas, and both are on concrete slabs. The nearest river is located down gradient more than 2km away. A review of the site setting suggests there is no potential for releases to surface water and controls have been implemented to minimise the risk to human exposure.

Liquid cyanide is not used at AEF. AEF only receives solid sodium cyanide briquettes in 1 tonne wooden crates from CyPlus.

The cyanide mixing and storage tanks are both equipped with level indicators and alarms linked to the control room. The levels on the tanks can be observed by the Control Room Operator on the ABB System (process control software system).

Cyanide mixing and storage tanks are located on a concrete surface that can prevent seepage to the subsurface. The mixing and storage tanks are located in a concrete bunded area, all floors are concrete and there are no cracks. There is a sump that is designed to pump spillage back to the No.7 CIL tank, located within the mill building.

Secondary containments for cyanide storage and mixing tanks are constructed of concrete, which provides a competent barrier to leakage.

The warehouses and buildings are fully enclosed with a roof, sides and floors and a solid concrete floor to prevent contact with water. The crates have built-in pallets that keep the boxes off the ground. Tanks are located within bunds. The warehouses and buildings are equipped with electric extraction fans to direct any potential HCN gas outside the warehouses and buildings to prevent the build-up of hydrogen cyanide gas. HCN fixed monitors are present within both the warehouses and buildings.

The warehouses and buildings are located inside the security area of the mine, preventing public access. The warehouses are kept locked at all times and the warehouses and buildings can only be accessed by authorized personnel. Cyanide is stored separately from incompatible materials, such as acids, strong oxidisers, and explosives and apart from foods, animal feeds, and tobacco products with berms, bunds, walls or other appropriate barriers that will prevent mixing. There are no other materials or chemicals stored in the cyanide warehouses. Cyanide solutions are kept separately from other materials within the other buildings

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**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with 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 empty cyanide containers are prevented from being used for any purpose other than holding cyanide. Empty cyanide crates are checked for traces of cyanide and dismantled and flattened in the mixing room before being taken by forklift to the dedicated shipping container, which is located outside the cyanide warehouse. Empty plastic bags and liners are placed in the press, which is located in the mixing room. When the press is full, the material is compressed and transported by forklift to the same dedicated shipping container. When full, the shipping container is transported to Fortum (previously Ekokem). Fortum, a hazardous waste specialist company, disposes of all the contents according to all relevant legislation. Fortum offers a wide range of services for hazardous waste management, including thermal treatment of hazardous waste in high-temperature incineration. The shipping container containing the used cyanide crates and bags is locked and secured. The key is held at the plant control room.

AEF has developed procedures that address activities to prevent exposures and releases during cyanide unloading and mixing activities.

The operation of valves is detailed in the cyanide mixing work instruction. The valves for opening and closing water into the cyanide mixing tank, and transfer of cyanide from the mixing tank to the storage tank is controlled remotely by the control room operator in accordance with the procedure.

Cyanide comes to the mine in crates within sea containers. The cyanide offloading and cyanide storage work instructions describe the process to ensure that the cyanide is transferred to the warehouses with a forklift without rupturing or puncturing the crates. The cyanide offloading work instruction states that cyanide crates are stacked to a maximum of two high only.

The actions to be taken in the event of a spill are detailed in the cyanide mixing procedure. This stipulates that the area should be washed after mixing, including clean-up of the cyanide mixing cone from any briquettes or powder left behind after mixing.

The PPE requirements for both cyanide mixing and offloading activities are stipulated in the work instructions. Cyanide mixing takes place with two operators in the mixing room as well as remote camera observation from the control room. All operators and control room staff communicate with radios.

Colorant dye is already added by the supplier, CyPlus, prior to arrival on site.

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 preventive maintenance procedures.**

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Written management and operating plans or procedures have been developed for cyanide facilities including unloading, mixing and storage facilities, cyanide leaching, cyanide destruction and tailings impoundments. The procedures are detailed and generally comprise the following sections: purpose, object, definition, responsibilities, methodology, protective and necessary equipment, and revision. The procedures demonstrate an understanding of cyanide management in a manner that prevent or control releases to the environment and exposures to the workers and the community.

The operation has plans and procedures that identify the assumptions and parameters on which the facility design was based as well as applicable regulatory requirements to prevent or control cyanide releases and exposures consistent with applicable requirements.

Procedures and manuals were reviewed identifying the assumptions and parameters on which the facility designs were based:

- The Cyanide Leaching Operation work instruction states that the pH in the CIL Tank No.1 should be maintained at 10.5 pH.
- It is stated in the Tailings Storage Facility (TSF) Operations Manual that the design TSF pond freeboard is 1.0 m, the minimum beach freeboard is 0.5 m.
- The Tailings Storage Facility Operations Manual details the maximum volume of tailings to be discharged into the ponds annually and includes a description of the water balance for the mine (including pump capacity) and design storm events.

The operation's environmental permit states that the discharge limits are as follows:

- 0.4 mg/l of WAD (Weak Acid Dissociable) cyanide at a compliance point prior discharge in the environment.
- 10 mg/l of WAD cyanide at discharge into the CIL pond, meaning that all open water should have a CN WAD concentration less than 10 mg/l.
- Discharge limits on the volume of water that AEF can discharge to the environment, dependent on the flow of the recipient river; therefore, this varies throughout the year.

The operation has plans and procedures that describe the standard practices necessary for the safe and environmentally sound operation of the facility including the specific measures needed for compliance with the Code, such as water management, inspections and preventative maintenance activities. The cyanide facilities

(warehouses, mixing, CIL circuit and gold recovery circuit) are inspected daily. The mine uses the Oracle JD Edwards computerised maintenance system to plan and schedule inspection and maintenance activities at varying frequencies. Weekly, monthly and annual inspections are conducted on cyanide equipment such as pumps, tanks, pipelines (including reagent strength pipelines), etc. Comments and required corrective actions associated with defects are recorded when observed. Job cards are raised where ad hoc maintenance is required as identified during inspections or observations from plant employees. The tailings dam operating manuals describe in detail the water management procedure for the operation of the facility- discharge criteria, pumps capacity and freeboard criteria.

Change Management is part of AEF's Responsible Mining Management System. This process is used for major modifications or for modification that involve a number of categories. The change management process was undergoing modification at the time of the recertification audit and was subsequently approved during a management review.

The trigger for the new change management process is documented in the relevant meeting notes where the proposed change is initially discussed (relevant meetings are listed below). The appointed responsible person will then record the action plan and agreed corrective actions in the Intelex nonconformance module (an on line system that the team has access to). The site uses the same module to manage inspection or audit observations, permit exceedances or regulatory inspections.

A management of change (MoC) process chart is included in the approach. This includes the initial trigger, nomination of responsible person, compiling of actions, approval of action plan, evaluation of effective actions, implementation and closing of corrective actions, recording on the Intelex system.

For modifications, or changes of practices, meetings are held where changes are discussed, these include the monthly site management team meeting, weekly production group meeting, daily production meeting, pre-shift meetings, mill monthly safety meetings. The meetings are attended by representatives from all departments across the mine, including the health, safety and environmental department and discussions include any proposed changes, who will be responsible to lead the change process and required actions.

The following documentation are completed to document the proposed change and assess the associated risks:

- Hazard and Operability Analysis (HAZOP); and
- Risk Assessment.

The HAZOP and risk assessment meetings are held to assess the risk, conduct a risk rating, discuss controls, assign a responsible persons associated with identified actions. The meetings are attended by representatives from the various departments, including the Health, Safety and Environmental Departments.

The operation has developed a number of procedures for contingencies and non-standard operating conditions, including an upset in the water balance, corrective action, and either planned or emergency shutdowns. The water conveyance and storage facilities are monitored daily and the water balance is updated on a monthly basis, and described in the OMS (Operational Management System) manual. In the event of inspections and monitoring, identifying a deviation from design or standard operating procedure, the Oracle JD Edwards system is used to record corrective actions and corrective maintenance by means of a work order to address the deviation, which is then dealt with by maintenance. There are contingency procedures for the mill such as shut down of the CIL circuit, shut down of the destruction circuit, and failure of the power grid that address all the necessary steps to be taken to prevent any health and safety hazards related to such systems upsets. Work instructions for the cyanide leach section and the destruction reactor makes provision for when short term or longer-term temporary closure or cessation of the operations may be necessary by ensuring the safe shut down

of these sections. The Site has also confirmed that in the event of any long term shut-down procedures are in place to ensure the ongoing safe management of cyanide in all cyanide circuits and storage areas.

Inspection of the tanks are covered during the daily mill inspection and annual tank thickness testing and as part of the preventative maintenance programme.

The operation inspects cyanide facilities on an established frequency sufficient to assure and document that they are functioning within design parameters. Inspection of the various cyanide facilities are done daily, weekly, monthly and annually, depending on the facility.

Inspection of the tanks holding cyanide solutions are covered during the daily cyanide circuit inspection and annual tank thickness testing and as part of the preventative maintenance programme.

Inspection of secondary containment is covered during the daily cyanide circuit inspection and preventative maintenance programme.

Daily and weekly inspections are conducted at the TSF and water reservoir facilities. The weekly inspection includes checking the seepage well infrastructure. Daily inspections are conducted on the TSF pipeline and the lined pipeline trench.

Inspection of the pipelines, pumps and valves are conducted during the daily cyanide circuit inspection, preventative maintenance programme and annual pipeline thickness testing.

The CIL 1 and 2 Decant Ponds are inspected during the daily TSF inspection, weekly Geotechnical Engineer inspection and during the annual independent inspections. Routine inspections cover the physical integrity of surface water diversions used to maintain water balance. All water dykes are inspected daily by the maintenance and water measurement teams operating in the tailings area and the tailings team carryout additional inspections including an annual inspection (with corporate staff) resulting in a formal report.

Inspections are documented and the records maintained include the date of inspection, the inspector's name, any deficiencies observed, and any corrective actions.

The mine uses the Oracle JD Edwards computerised maintenance system to plan and schedule inspection and maintenance activities at varying frequencies. Every major piece of equipment (including cyanide) has a preventative maintenance programme that is entered in the JD Edwards Software. Comments and required corrective actions associated with defects are recorded when observed during inspections. Work orders on preventative maintenance are issued to the maintenance team on a weekly basis, with all weekly tasks being assigned to specific operations. Weekly, monthly and annual inspections are conducted on cyanide equipment such as pumps, tanks, pipelines (including reagent strength pipelines), etc. Job cards are raised where ad hoc maintenance is required as identified during inspections or observations from plant employees.

The operation has on-site back-up electricity generating equipment to operate pumps and other equipment required to prevent unintentional releases and exposures in the event that the primary power source is interrupted. In case of unavailability of primary power grid, all automation, servers, field boxes and gas analysers would be supplied with electricity by a UPS (Uninterruptible Power Supply) power system (consisting of 10 UPS systems). There are also three diesel generators available on site that would start automatically in case of power outage after approximately 10 seconds. These diesel generators can generate 2.2 MW (Mega Watt). The emergency power is used to power the outlet fans of the CIL tanks, agitators, CIL pumps, cyanide transfer pumps, tank aeration, UPS for instrumentation and lights. This equipment is regularly maintained and tested.

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

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

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 4.2; To introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

The operation conducts a program to determine appropriate cyanide addition rates in the mill and evaluate and adjust addition rates as necessary when ore types or processing practices change cyanide requirements.

Bottle roll test are conducted daily from samples taken at three tanks. The samples are taken after pressure oxidation, from the flash tank (depressurized) and Counter Current Decantation (CCD) feed tank. The bottle roll tests are conducted to determine any change in the ore that could result in the change of cyanide consumption and recovery.

The mill is operating with defined cyanide addition design rates for each addition point. The rates have been determined through metallurgical testing.

Additional bottle roll tests are conducted once a week from samples taken at the CIL Tank 12 to confirm that all the gold has been dissolved and that as high as possible recovery is achieved, at the current setpoint.

There are Cyanoprobes installed in CIL Tank 1, 3 and 5 to measure and control the addition of cyanide in these tanks.

Samples are taken from CIL Tank 1, Tank 3, Tank 5, Tank 8, Tank 11, and Tank 12 for manual titrations, five times a day to confirm the Cyanoprobe measurements and results.

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

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has developed a comprehensive, probabilistic water balance. The GoldSim water balance model is a comprehensive model that includes process operations, underground mining operations, tailings storage facilities and the surface water systems in the area. The water balance is used to manage process water systems at the mine to prevent overtopping and predict deficit or excess water.

The latest revision of the Water Balance Model Report was reviewed and confirmed that the water balance modelling is using the Goldsim software, which is comprehensive and probabilistic, as it includes all parameters required including:

- Tailings deposition rates;
- Precipitation, evaporation and seepage rates;
- Runoff from external catchment areas;
- Effects of potential freezing and thawing conditions;
- Solution losses in addition to seepage and entrainment of water in the tailings storage facility;
- Potential power outages; and
- The capacity and availability of treatment system for surface discharges.

The design TSF pond freeboard, as stated in the Water Management Code of Conduct, is 1.0 m, the minimum beach freeboard is 0.5 m. Weekly inspections are conducted by the Geotechnical Engineer to ensure compliance.

The beach freeboard is checked on a weekly basis by an independent consultant and the Geotechnical Engineer and the tailings elevations are recorded in the weekly Monitoring Survey Tailings Elevations graphic (illustrating the points and associated elevations). An automated water level indicator is installed at the TSF decant point. The results are directly reported to an online dashboard. Daily inspections are conducted by the TSF operator during which the freeboard and pond elevation is checked. Deviations is recorded on the inspection sheet.

The CIL1 Storage Pond HW (High Water)-level is +232,00 MASL (Meters Above Sea Level), EHW (Emergency High Water)-level is +232,5 MASL and the Dam crest elevation is +234,00 MASL. Weekly inspections of the ponds are conducted by the Geotechnical Engineer to ensure compliance. No overflows have occurred in the past 3 years. The CIL2 reclaim pond is only a rockfill embankment and seeping through water. It will be lifted up at the same time as new raises are built. There are no freeboard requirements for the CIL2 reclaim pond.

Rainfall data is collected from two weather stations and is included in the model. The quality of Evaporation rate data and Rainfall data is reviewed and considered during the development of the water balance. The mine has also installed an onsite weather station and has been collecting data for the past five years. The rainfall

data from the onsite weather station is compared with the two official Finnish weather stations to ensure that the data received from those are representative of the site conditions.

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

	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 4.4**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

The environmental permit conditions limit the concentration in all areas of this question to 10 mg/l and all the data reviewed shows that there are no open waters where the concentration reaches or exceeds the 10mg/l WAD cyanide threshold.

AEF has shown evidence from sampling and analysis that demonstrates there were no occurrences of solution ponds where cyanide concentration exceeded 10 mg/l WAD cyanide for the recertification period.

Maintaining a WAD cyanide concentration of 50 mg/l or less in open water is effective in preventing significant wildlife mortality as no wildlife mortalities due to cyanide on site have been recorded in the last 3 years.

There is no heap leach facility at Agnico Eagle Kittilä Gold Mine.

Standard of Practice 4.5:	**Implement measures to protect fish and wildlife from direct and 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	

Summarise the basis for this Finding/Deficiencies Identified:

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

From 2018 to December 2020 there were two compliance points namely the Rimmi point, discharging water from Southern Reservoir (containing water from the Neutralisation Plant tailings) and tested for WAD cyanide, and the Lö1 point, discharging water from the underground operations and not tested for WAD cyanide. The data from the Rimmi compliance point were reviewed and the WAD cyanide concentration was found to be less than 0.20 mg/L for the period 2018 - 2020. AEF's environmental permit discharge limit for water is 0.4 mg/l WAD cyanide or less.

From 21 December 2020 to date there is only one compliance point as the water from the Southern Reservoir is mixed with underground dewatering water prior to release to the Loukinen river via a pipeline. Samples are collected four times a week for WAD cyanide analysis. The data from the Discharge Pipeline Pumping (DPP) station compliance point were reviewed and the WAD cyanide concentrations were found to be less than 0.20 mg/l for the period 21 December 2020 to date.

For the period 2018 to 2020 there was no recognised mixing zone for the discharge into the wetland areas and therefore two different river samplings points were considered for compliance. Results were observed for 2018 to 2021 and all were below the detection limit of 0.005 mg/l for total cyanide as well as WAD cyanide.

With the change to the new compliance point from December 2020, the water is transferred with a 22km pipeline to the Loukinen River, further downstream from the operations. A sampling point, below the mixing zone, was considered for compliance. Results observed for December 2020 to date were below the detection limit of 0.005 mg/l for total cyanide as well as WAD cyanide.

The CIL2 and CIL 1 TSF and associated ponds are fully lined, and no evidence of seepage has been detected.

Although the compliance point has been changed from the Rimmi point to the point Lou TR point, monthly water samples are still collected at the Seu VO point to monitor for any potentially indirect discharges from the operation. Results observed for December 2020 to date were below the detection limit of 0.005 mg/l for total cyanide as well as WAD cyanide.

No evidence that any indirect discharge to surface water have caused cyanide concentrations in surface water to rise above levels protective of a designated beneficial use for aquatic life.

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**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

AEF has implemented specific water management measures to protect the beneficial use of groundwater beneath and immediately down-gradient of the mine as neighbouring houses use groundwater from boreholes for domestic use. Water is also used by the mine for drinking water from different boreholes. The CIL2 TSF and CIL1 TSF (with process water pond on top) is double lined with a moraine core and a bituminous geomembrane (BGM) liner on the sidewalls and the base. The CIL and process water ponds are fully lined with the BGM membrane (base and sidewalls). The CIL1 TSF is equipped with underdrains and seepage collected sumps. These are inspected weekly and if any seepage present, samples are taken for analysis. Seepage sumps, with automated level detectors and pumps have been installed at the CIL2 TSF.

WAD cyanide concentrations (or other species of cyanide for which there is a numerical standard established by the applicable jurisdiction) in groundwater at compliance points below or downgradient of the facility are below levels that are protective of identified beneficial use of groundwater, namely the use of groundwater for domestic use. Cyanide is not stipulated as a substances that deteriorate groundwater, as detailed in the Finnish Governmental Degree for Groundwater. Groundwater sampling is conducted from more than 30 monitoring boreholes, including boreholes used for domestic use. Groundwater monitoring results were observed for the boreholes near the TSF facilities. Results observed for 2018 to date were below the detection limit of 0.005 mg/l for total cyanide as well as WAD cyanide.

AEF does use mill tailings as underground backfill, but it is the Neutralisation Plant (NP) tailings that are sent to the paste plant for backfilling operation. The NP tailing is flotation tailings (no cyanide used in the process), therefore there are no impacts to worker health or beneficial uses of groundwater due to cyanide use.

Seepage from AEF has not caused cyanide concentrations in groundwater to rise above levels protective of beneficial use.

Standard of Practice 4.7:	**Provide spill prevention or containment measures for process tanks and pipelines.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 4.7**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Spill prevention and containment measures are provided for all cyanide unloading, storage, mixing and process solution tanks. Secondary containment is present for the cyanide mixing and storage tanks, the CIL area, the elution area, the electrowinning area, and the acid tank close to the cyanide process tanks. For all areas, the volume of the bunds has been calculated as larger than 110% of the largest tank within that bund.

All secondary containment areas are constructed of concrete with walls and floors that appear to be in good condition and are inspected.

All tanks are installed on an adequate concrete foundation with a thickness of approximately 700 mm.

The elution containment also shows a separate containment around the acid tank to ensure these materials cannot mix. The volume of this containment was also checked and found to be of sufficient volume.

On a yearly basis an external engineering consulting company called Savora Oy undertake an inspection of all the secondary containment within the cyanide areas.

The electrowinning vessel has a capacity of 3.5 m^3 when fully loaded and secondary containment with more than 110% capacity of the electrowinning vessel volume.

Secondary containment is provided for all cyanide containing tanks in the Mill Area.

All these secondary containment areas are equipped with sumps that would collect any cyanide solution or cyanide contaminated water and send it to the detox tank and are therefore compliant with the Code. This was reviewed during the site visit and during the review of the plant drawings and secondary containment calculations.

The collection system (from the sumps) is designed to return all water to the cyanide destruction tanks.

A risk assessment was completed in 2016. Following this, additional measures were adopted for the process pipelines between the Mill Buildings and the tailings ponds and included double pipes that sit within a plastic lined trench and fall to an area with secondary containment. The concentration of material within the pipes is also monitored frequently (several times daily).

There are no cyanide process tanks without secondary containment.

All tailings pipelines and return water pipelines are placed in lined ditches from the neutralisation plant to the tailings pond.

The mine also undertakes the following inspections:

- Daily shift checklists;
- Monthly mill inspections; and

- Monthly maintenance inspections.

There are no cyanide pipelines that present a risk to surface water and therefore no evaluation for ‘special protection needs’ is necessary.

Cyanide tanks and pipelines are constructed of materials that are compatible with cyanide and high pH conditions. All cyanide containing tanks and pipelines are made of carbon steel, stainless steel, or HDPE, and are therefore compatible with cyanide and high pH conditions. Tank thickness measurements are completed by Polartec Oy, who maintain a database of all tanks and this information is used to confirm integrity. This was reviewed during the site visit.

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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.8**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 4.8; to implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

Quality control and quality assurance (QC/QA) programs have been implemented during construction of all new cyanide facilities and modifications to existing facilities, including cyanide unloading, storage, mixing facilities and other cyanide facilities. The QC/QA for the operation's cyanide facilities were addressed in the original ICMC certification audit and the subsequent recertification audits. The following modifications were completed during the current recertification audit period:

- Cell 2 TSF Raise Project;
- Construction of Cyanide Warehouse No.2; and
- Installation of new CIL No.1 Tank.

The QC/QA programs have addressed the suitability of materials used, the adequacy of soil compaction for earthworks, the construction of the tank base and the installation of the synthetic membrane liner associated with the above-mentioned projects.

QC/QA records cyanide facilities have been retained and this was addressed in the original ICMC certification audit and subsequent recertification audits, including the current audit.

Appropriately qualified personnel reviewed the cyanide facility construction activities and provided documentation that the facility was built as proposed and approved.

The QCQA documentation for the operation's cyanide facilities is available and were addressed in the original ICMC certification audit and subsequent recertification audits.

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

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

AEF has developed a written work instruction for monitoring activities and includes surface and groundwater monitoring.

The procedures specify how and where the samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions and cyanide species to be analysed.

Procedure covers the following elements:

- Preparation for sampling (equipment);
- Sampling method;
- Sample preservation;
- Sampling equipment; and
- Shipment and chain of custody procedures.

The Operational Phase Monitoring Programme contains details on sample identification requirements, analysis to be perform for specific samples including which cyanide species to be analysed, standards applicable to the analysis of specified elements.

Every year a sampling schedule is developed from the approved environmental monitoring programme. The environmental monitoring programme is approved by the Finnish Centre for Economic Development, Transport and Environment and includes all monitoring activities required as per the environmental permit. Monitoring results are reported monthly to the same authority.

The sampling work instruction, containing the sampling and analytical protocols, was developed by a qualified person. Environmental sampling is undertaken by accredited samplers from the mine and the analysis is conducted by an external laboratory.

Sampling conditions and procedures are documented in writing on the Sampling Details spreadsheet. The water sampling procedure contains an appendix with the sampling form that contains the following information: temperature during sampling, weather, sampling locations, depth of sampling, temperature, wind speed, and has a box for any remarks where notes such as wildlife activity or mortality could be noted.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner.

- Surface water monitoring – conducted either weekly or monthly, dependent on the monitoring point, dependent on risk.
- Discharge point monitoring – monitoring below the mixing zone is conducted weekly.

- Water discharged in the pipeline to the discharge point – four times a week.
- Groundwater monitoring – every 2nd month or every 3rd month, dependent on the monitoring point, dependent on risk.

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, livestock, and the environment.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Emergency Response Practice 5.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The general Mine Closure Plan (developed by Engineer) details general mine closure such as tailings area, mill area, waste rock dump and open-pit (including closure covers, reprofiling, etc).

AEM has written a specific cyanide related decommissioning plan titled 'Cyanide Decommissioning Management Plan' that provides the generic steps necessary to achieve the decommissioning. The plan details: planning for decommissioning, risk assessment, health and safety, environmental, and stakeholder considerations, pre-closure actions, and cyanide equipment decontamination and clean-up actions.

The Site's Decommission Management Plan is covered by the management system document requirements, and it is reviewed and revised when needed (i.e when changes are made that impact the current plan). At this stage the Site have confirmed that the Decommission Management Plan from 2017 is still valid and does not require an update.

The Closure Cost spreadsheet, that is a supplementary to the Mine Closure Plan, provides a schedule, detailing the order and duration, of the planned activities that will take place during the decommissioning and closure phases.

The Mine Closure Plan is reviewed at least every 3 years, unless changes occur that warrant an update of the document.

The Closure Cost spreadsheet (containing the closure schedule) is reviewed quarterly.

Standard of Practice 5.2:	**Establish a financial assurance mechanism capable of fully funding cyanide-related decommissioning activities.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 5.2**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 5.2; to establish a financial assurance mechanism capable of fully funding cyanide-related decommissioning activities.

The operation has developed an estimate of the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in its site decommissioning or closure plan. The applicable jurisdiction requires a financial guarantee as part of the granting of the environmental permit and the amount has been put aside through three bond guarantees. The amount put aside as financial guarantees met the amount required by the current environmental permit.

The closure and liability costs are reviewed quarterly and updated when changes occur.

AEF has not established self-insurance or self-guarantees as a financial assurance mechanism as the applicable jurisdiction requires financial guarantee.

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.

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 6.1; identify potential cyanide exposure scenarios and take measure as necessary to eliminate, reduce and control them.

AEF has developed procedures describing how cyanide-related tasks (unloading, mixing, plant operations, entry into confined spaces and equipment decontamination prior to maintenance) should be conducted to minimise worker exposure.

A number of relevant procedures were reviewed as part of the site visit. Site activities were observed and appeared to follow the procedures set out with respect to mixing of cyanide.

Prior to maintenance activities the equipment is decontaminated by the mill department following appropriate lock out tag out (LOTO) procedures.

Procedures are reviewed each year but not always modified unless the activity has changed.

Procedures require that personal protective equipment are used and also address pre-work inspections.

The procedures detail the PPE required for each task. For example the Cyanide Storage Procedure details the type of PPE (e.g. ABEK Respirator Protection, HCN Meter). This procedure has detailed actions to be followed during the storage procedure.

The Site Induction and Induction to the Mill detail the PPE required which includes the use of a mask, filters and personnel HCN monitor for all operators working in the mill. During the mill walk around it was noted that there was a very high adherence by workers to the use of PPE.

Pre-work inspections are used at the beginning of every shift. These are documented by means of a 'Work Card'. The card is filled in by the worker who details the work task and the special requirements, the tools needed, and the PPE required.

AEF actively solicits and considers worker input in developing and evaluating health and safety procedures.

Several channels are used to collect worker input in developing and evaluating health and safety procedures as detailed below:

- Work Cards - Workers fill in comments on the Work Card and these are collected by the Mill Safety Expert. Any comments made on the cards are collated on the Intelex system, discussed with the relevant people, and actioned where appropriate.
- Continuous Improvement Process – As part of the Responsible Mine Management.
- System, the mine has a continuous improvement process whereby workers can make suggestions on a specific form available on the intranet.

- Procedures Review - Work procedures are given to workers for comment before they are finalised. In addition, the reviser of the procedure is noted in the revisions box.

When questioned, mill workers responded that they felt they were able to comment on health and safety procedures.

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**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

AEF has determined the appropriate pH for limiting the evolution of HCN gas during mixing and production activities.

The optimum pH is detailed by the metallurgical department and was set at the time of the audit at pH≥10.5 for the CILs. Employees confirmed that during the last 3 years results varied by only 0.2 pH units. The Cyanide Leaching operation procedure (KIT-CONC-WI) details the required pH for the CIL circuit solution to be above pH 10.5 and indicates that no HCN gases will be produced at this pH.

The ABB process control software shows the set points for pH in various tanks. Examples were observed during the site visit.

AEF has identified areas and activities where workers may be exposed to hydrogen cyanide gas or cyanide dust. During the site visit, signs indicating cyanide and hazardous substances presence (Global Harmonized Standard (GHS) signs and a Cyanide Warning and Emergency Procedures sign) were observed at the entrance to buildings using cyanide.

Warning signs are also present on the cyanide carrying pipelines to the ponds indicating the cyanide hazard.

AEF uses ambient and personal monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas and solid cyanide dust. AEF has over 100 fixed HCN monitors installed across the cyanide use areas. In addition, the site has a number of portable detectors and all workers in the mill, including maintenance workers, are required to use a HCN portable monitor when entering the cyanide area.

The fixed monitors alarm at the following concentrations:

- 5 ppm with a flashing red light; and
- 10 ppm with a flashing red light and audible alarm. This signals an evacuation is required. The lights were all clearly labelled as cyanide alarms.

The portable monitors alarm at the following concentrations:

- 5 ppm with a flashing light; and
- 10 ppm with audible alarm and vibration.

The operation has identified that there are no areas where workers are exposed to cyanide in excess of 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period.

In the event of an instrument alarm being triggered by hydrogen cyanide gas or dust (at 4.7 ppm) or fixed monitor alarm (5 ppm), the local area has to be evacuated.

Additional alarms (klaxon and visual) were also fitted to areas adjacent to the cyanide mixing area to ensure persons potentially entering this area from all accessible locations were provided with early warning of any cyanide release.

All work in the mill, cyanide mixing, and cyanide warehouse operations is undertaken by workers wearing HCN personal monitors and PPE requirements include wearing a mask with P3 filters attached. The mask is also due partly to arsenic emissions from the ore, as well as a HCN precaution.

Hydrogen cyanide monitoring equipment is maintained, tested, and calibrated as directed by the manufacturer. Records of maintenance, testing and calibration are retained for a period of at least three years. AEF has the manufacturer's instructions for all devices used at the mine.

The general induction and mill induction presentations clearly detail that smoking, open flames or eating and drinking are not permitted except in designated areas. Warning signs are also present in the mill, cyanide mixing and cyanide storage areas.

High-strength cyanide solution is dyed for clear identification. The safety datasheet for the sodium cyanide shows it contains the dye.

Site staff confirmed that only dyed sodium cyanide is now used on site.

Showers, low pressure eye wash stations and dry powder fire extinguishers are located at strategic locations throughout the operation. They are maintained, inspected, and tested on a regular basis by a certified contractor (AVAP) and by site staff. Fire extinguishers are dry powder.

Tanks and pipelines containing cyanide solutions were marked with contents in Finnish to define what they held and in the case of pipeline the direction of flow was also noted. Warning signs are also present on the cyanide carrying pipelines to the ponds.

MSDS (in Finnish), first aid procedures and other additional materials on cyanide safety are available in the Mill control room, in areas where cyanide is managed and on a shared drive on the computer network.

Information regarding cyanide poisoning symptoms, cyanide first aid and general emergency response procedures is detailed in a sign entitled 'Cyanide Warning', which is yellow and placed outside the cyanide warehouse, cyanide mixing area, CIL area and control room.

Procedures are in place and have been implemented to investigate and evaluate cyanide exposure incidents to determine if AEF's programs and procedures to protect worker health and safety, and to respond to cyanide exposures are adequate or in need of revision. An AEM company standard is in use for accident reporting and investigation. This system is online via the Intelex system. The investigation considers root cause analysis. Corrective actions are detailed in the investigation and the incident reports cannot be closed out until these actions are undertaken.

Accidents and incidents that had occurred from 2019 to 2021 were reviewed. Example involving cyanide or in the cyanide area were small in number but were investigated and actions identified and closed out.

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

The operation is

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has water, oxygen, a resuscitator, antidote kits, a radio, telephone, and alarm system readily available for use at cyanide unloading, storage and mixing locations and elsewhere in the plant.

The operation inspects its first aid equipment regularly to ensure that it is available if needed and that cyanide antidotes are present, stored and tested as directed by the manufacturer and replaced on a schedule to ensure effectiveness in the event of an incident.

Several first aid kits are located in the mill area. The mill safety expert makes a formal inspection of the first aid equipment once a year. Monthly inspections are also completed by the mill safety expert. Any materials that are used are marked on the daily Work Card; these Work Cards are read by the Mill Safety Expert and replaced immediately. Safety showers, eye washes and oxygen kits are also inspected monthly by the Mill Safety Expert.

A number of first aid kits were inspected during the site tour and ample materials were stored and all of the contents were within expiry deadlines.

Safety showers and eye washes are also inspected monthly.

The operation has developed a written emergency response plan and procedures for action to be taken should a cyanide exposure incident occur.

These procedures are detailed most clearly in the following:

- Emergency Response and Emergency Preparedness Plan;
- Internal Rescue Plan for the Enrichment Plant;
- Rescue Plan for Tailings Pond Area; and
- External Emergency Plan, Pelastuslaitos Lappi Authority.

Instructions are also available in local language for employees and medical staff on administering cyanide antidotes.

All workers in the mill are trained for first aid and medical assistance to cyanide exposure and there is a minimum of 20 people trained for Emergency Response with at least 3 of them being present on any shift.

However, under Finnish law, only qualified medical staff are allowed to administer cyanide antidotes. Antidotes and instruction for use are available on site and induction, cyanide awareness and emergency response training is provided to staff.

The Site also has a doctor who attends the site on a part time basis. Local hospitals are aware that cyanide is in use at the site and that the use of cyanide antidotes may be required. The local hospitals are also involved in mock drills which include simulations of cyanide exposure.

The operation has developed procedures to transport workers exposed to cyanide to locally available qualified off-site medical facilities. All patients requiring hospital treatment are transported to the regional hospital in Kittilä, 50 km from the mine.

The operation has informed the regional hospital (Kittilä Hospital) so that they are aware of the potential need to treat patients for cyanide exposure. Prescriptions for cyanide antidotes are always obtained from this hospital. The mine also speaks with the hospital each year, although these meetings are not documented.

Due to the legal requirement for an External ERP (Emergency Response Plan) outside entities are also well aware of their involvement with Emergency Response and have been included in mock drills. Mock drills are carried out with staff from the hospital and these include scenarios where treatment of patients exposed to cyanide is required.

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

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 7.1; to prepare detailed emergency response plans for potential cyanide releases.

The operation has developed an Emergency Response Plan to address accidental releases of cyanide.

AEF has a number of emergency response plans relating to the cyanide facilities. These are as follows:

- Emergency Response and Emergency Preparedness Plan which includes the tailings and water storage tanks (CIL 1, CIL2, (Neutralisation Plant) NP3, NP4 and the Water Storage Pond;
- Internal Emergency Response Plan for the Mill which covers the measures taken inside the production facility to combat an accident including cyanide and cyanide exposure;
- Tailings Emergency Response plan, which includes response to a range of emergency scenarios;
- External Emergency Response Plan (written by the Authorities based on the Internal Emergency Plan;
- Crisis Management plan for AEF; and
- Crisis Management plan for AEM.

There are no heap leach facilities at the mine.

More general operating documents cover the following cyanide failure scenarios:

- Power outages and pump failures; and
- Failure of cyanide treatment, destruction, or recovery systems.

AEF is responsible for the cyanide when it reaches the cyanide warehouse. Prior to this it is the responsibility of the transport company, Korsu Oy (as part of the CyPlus Supply Chain #6). In the event of an accident during transport to the mine, AEF would assist if asked to do so by the municipality's fire department.

The Emergency Response Plans describe specific response actions as appropriate for anticipated emergency situations including:

- Clearing site personnel and potentially affected communities from the area of exposure;
- Use of cyanide antidotes and first aid measures for cyanide exposure;
- Control of releases at their source;
- Containment, assessment, and mitigation; and
- Future prevention of releases.

The nearest potentially affected community comprises a number of farms within 1 km of the mine. The nearest village, Kiistala, is around 6 km south-west of the mine. Affected communities would be contacted by use of the media or by direct contact, as the mine has contact details of people living in the neighbouring farms.

The mine has developed emergency response training that detail instructions for an accident involving cyanide (following the requirements of the Mill ERP). In the event of a fire or cyanide leak, the area must be closed off. The training also provides details of the alarm signals and different instructions regarding whether you are indoors or outdoors. Training is refreshed every year for personnel working in the cyanide area. Interviewed staff showed a good understanding of the requirements of working with cyanide.

There is specific instruction for administering antidotes with instructions for workers and for medical staff.

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

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has included its workforce and stakeholders such as potentially affected communities in cyanide emergency response planning.

The cyanide emergency response plans are rolled out to the workforce via safety meetings. Feedback can be provided during these events. The workforce can also make comment on the cyanide emergency response planning by use of the Work Card, during safety meetings or safety training and emergency response training for members of the ERP teams.

Stakeholders and potentially affected communities are involved in cyanide emergency response planning via the External Emergency Plan public hearing meetings. The External ERP is also written by the Municipality (fire department) in cooperation with AEF and is updated every spring. In addition, the site holds annual community meetings, asks questions, and collects feedback.

The fire brigade visits AEF every few months and can comment on the internal ERP during their visits. In addition, a mock drill has to be performed every three years as part of legal (SEVESO (EU Seveso Major Accident Hazard Directive)) requirements. A report on the mock drills in 2018 and 2021 were sent from the Authority stating that the drills met legal requirements.

Potentially affected communities are also made aware of the nature of the risks associated with accidental cyanide releases via a document sent to them called Safety Bulletin 2017. This document is updated and re-sent every 5 years and so the next update is due in 2022 which the site has confirmed they have already planned for.

AEF organise meetings and tours of the mine for the local communities, during which they are made aware of the risk associated with accidental cyanide released.

The operation has consulted with potentially affected communities through the Community liaison committee which meets regularly to discuss issues that might affect them. The committee has representatives from a wide range of the community.

The operation has involved local response agencies and medical facilities in the cyanide emergency planning and response process.

Local response agencies and medical facilities are involved in cyanide emergency planning and response process via the process of compiling the External Emergency Response Plan. The External ERP is written by the Municipal fire department in cooperation with AEF and other local response agencies. The document details all response agencies that would be involved, and these agencies are contacted by the Municipality to ensure they are aware of their role in emergency response planning and process.

Standard of Practice 7.3:	**Designate appropriate personnel and commit necessary equipment and resources for emergency response.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 7.3**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 7.3; to designate appropriate personnel and commit necessary equipment and resources for emergency response.

The cyanide-related elements of the Emergency Response Plan include:

- Primary and alternate emergency response co-ordinators are detailed in the AEF Crisis Management Plan and Mill ERP.
- Emergency Response Teams are detailed in the AEF Crisis Management Plan and Mill ERP.

Approximately 60 hours of training is legally required to be an emergency responder, this is then supplemented by annual refresher training comprising another 40 hours of training.

Call-out procedures and 24-hour contact information for the response team is detailed in the Contact sheet for Emergency Response and in the Mill ERP.

Duties and responsibilities of the co-ordinators and team members are detailed in the Mill ERP.

The role of outside responders, medical facilities and communities is described in the emergency response procedures and are detailed in the External ERP.

An emergency response equipment list is held by AEF. Procedures to inspect emergency response equipment to ensure its availability are made by the Safety Department.

The operation has confirmed that outside entities involved in the Emergency Response Plan are aware of their involvement and are included as necessary in mock drills or implementation exercises.

The ERP includes procedures to inspect emergency response equipment to ensure its availability – Inspections of equipment are made by the Safety Department as follows:

- Spill containment equipment - once a week;
- On-Site emergency car (ambulance) once a month;
- Chemical suits – once a year (including an impermeability test);
- Fire Engine – once a month; and
- Self-contained breathing apparatus (SCBA) – every six months.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.4**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 7.4; to develop procedures for internal and external emergency notification and reporting.

The Plan includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency.

All ERPs contain the emergency contact number for AEF's Emergency Control Centre. The Emergency Control Centre would then dial 112 for the emergency services (including medical facilities, police, and fire) to alert them to the incident. Contact information for these response providers is also detailed in the External ERP.

Procedures and contact information for notifying potentially affected communities of the cyanide-related incident, any necessary response measures, and for communication with the media is detailed in the AEF Crisis Management Plan and Mill ERP.

In addition to the emergency fire, police and medical services that the site would contact in the event of an emergency, the site would also contact the following regulatory agencies (depending on the nature and scale of the incident):

- Lapland Regional Environment Centre;
- State Administrative Authority, the Department for Rescue Services; and
- Emergency Response Centre of Oulu.

The operation has procedures for notifying ICMI of any significant cyanide incidents, as defined in ICMI's Definitions and Acronyms document. No such significant cyanide incidents have occurred or been reported to ICMI in the past three years.

Standard of Practice 7.5:	**Incorporate remediation measures and monitoring elements into response plans and account for the additional hazards of using cyanide treatment chemicals.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 7.5**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

The Plan describes specific remediation measures as appropriate for the likely cyanide release scenarios of:

- Recovery or neutralisation of solutions and solids – Spilt cyanide solutions within secondary containments are collected and transferred to the detox tank. Any (non-cyanide) spills outside of containment both solid and liquid would be removed according to the ERP and placed in specific containers for removal by the hazardous waste contractor Ekokem.
- Decontamination of soils or other contaminated media. No decontamination of soils or other contaminated media is undertaken but such materials are disposed of either in the CIL pond (cyanide contaminated material) or (for non-cyanide contaminated material) collected by the hazardous waste contractor.
- The procedures (Internal Rescue Plan) state that any excavation of cyanide contaminated material carried out would continue until the soil is tested as cleaner than the government's decree threshold for contaminated soils (1 mg/kg for cyanide). A sampling and testing method is defined in the procedure.
- Management and disposal of spill clean-up debris is described in various documents including the Internal Rescue Plan; How to Handle Cyanide Contaminated Materials; Section 12 of the ERP: and, in Mill Induction Training, which details that spill debris will be collected in specific hazardous waste containments and removed by specialist contractors (non-cyanide contaminated materials) or specialist on site handlers (for cyanide contaminated materials).
- Provision of an alternate drinking water supply – bottled drinking water is also purchased.

The ERP specifically prohibits the use of sodium hypochlorite, ferrous sulphate, and hydrogen peroxide to treat cyanide that has been released into surface water.

The Plan addresses the potential need for environmental monitoring. The EPR states that only an appropriately accredited laboratory would be used and details the type of analysis to be performed.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.6**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 7.6; to periodically evaluate response procedures and capabilities and revise them as needed.

The operation reviews and evaluates the cyanide-related elements of its Emergency Response Plan for adequacy on a regular basis.

Section 1 of the internal ERP details in the introductory section that it is revised every three years or whenever significant changes in activities occur.

Mock cyanide drills are conducted periodically as part of the Emergency Response Plan evaluation process.

Mock emergency drills are performed with both internal and external stakeholders.

Mock drills were performed in 2018 and in 2021. This is fewer than normal due to COVID restrictions. Normally the site would carry out drills on an annual basis and has confirmed that it plans to do so in the future.

The mock drills do address relevant release and exposure scenarios for the facility, are evaluated to determine the adequacy of the planned actions and training of responders (including third parties) and result in improvements to the operation's response plans and training programs.

Section 1 of the ERP states that the plan will be evaluated and revised every three years and after any cyanide-related emergency requiring its implementation. No actual cyanide related incidents have occurred in the past three years and so no updates related to such incidents have taken place.

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

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation trains all personnel who may encounter cyanide in cyanide recognition.

Training for cyanide hazard recognition is undertaken in the following ways: Induction training, Mill induction training, Cyanide awareness training, Cyanide Refresher training, Work Card training, and Emergency Response training.

The cyanide awareness training presentation includes the following topics: General Cyanide Information, Toxicity, Exposure routes, Symptoms of poisoning, Monitoring, Protection against exposure and Cyanide first aid. Cyanide hazard recognition refresher training is provided annually to everyone who encounters cyanide.

Cyanide training records for workers were observed and training records are retained.

Sign-in sheets from cyanide safety training sessions were reviewed. Training records are held on the Intelex/Moodle system which was observed live.

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

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation trains workers to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases

All workers in the Mill receive:

- Induction training;
- Mill Induction training; and
- Cyanide Awareness training.

They also receive task specific training to enable them to perform their normal production tasks, including training in specific cyanide related production procedures. The training elements necessary for each job involving cyanide management are identified in training materials.

Task specific training is performed after the induction and cyanide awareness training. An operator cannot work independently unless they have been specifically trained on a task.

Appropriately qualified personal provide task training relating to cyanide management activities.

Shift supervisors are responsible for task training. Cyanide awareness training is provided by the Mill Safety Expert. Checks are carried out on the operator to see if operations are carried out correctly.

Refresher training on cyanide management is provided annually to ensure that employees continue to perform their jobs in a safe and environmentally protective manner.

Training records were observed.

The operation evaluates the effectiveness of cyanide training by testing and observation.

Following the Cyanide Awareness training a test is undertaken by each worker. The test questions and the test results were reviewed.

Sign-in sheets from cyanide safety training sessions were reviewed for all shifts.

Records of training received are retained throughout an individual's employment. The records are placed on the company's Intelex system which were observed.

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

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 8.3; to train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

All cyanide unloading, mixing, production and maintenance personnel are trained in the procedures to be followed if cyanide is released. This is detailed in Induction training, Mill induction training, Cyanide awareness training, Cyanide Refresher training, Work Card training, and Emergency Response training.

In addition, training is provided in cyanide procedures.

Site personnel are trained in decontamination and first aid procedures. They take part in routine drills to test and improve their response skills.

Before becoming a member of the emergency response team each member undertakes an external course run by SPEX that provides a national qualification in fire and rescue. This course is up to 60 hours long. Records of training for the Emergency Response team was observed.

Mock emergency drills are performed with both internal and external stakeholders. Emergency Response staff are involved in the mock drills.

The operation has made off-site Emergency Responders, such as community members, local responders, and medical providers familiar with those elements of the Emergency Response Plan that relate to cyanide.

The AEF emergency response plan is sent to the municipal fire brigade and local authorities periodically. An External Emergency plan is developed by the Local Authority and made in collaboration with other local responders and medical providers. This external plan is then discussed at public meetings where community members can become familiar with those elements of the plan related to cyanide.

Community members are also consulted at the community liaison meetings and comments are retained and responded to.

In addition, AEF, local responders, and medical providers are involved in mock drills to put the external emergency plan into practice.

Training records for a number of workers were observed.

Records are retained documenting cyanide training on the company's Intelex system and this was observed.

Training includes the use of necessary emergency response equipment as indicated by provided details of training events, photographs from mock drills and interviews with staff. Cyanide hazard recognition refresher training is provided annually to everyone who encounters cyanide. Site staff confirmed that the training includes response procedures for cyanide releases and cyanide exposures and this was also supported by a review of the training presentation.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

Standard of Practice 9.1: **Promote dialogue with stakeholders regarding cyanide management and responsibly address identified concerns.**

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 9.1; to promote dialogue with stakeholders regarding cyanide management and responsibly address identified concerns.

The operation provides opportunities for stakeholders to communicate issues of concern regarding the management of cyanide.

Stakeholders can communicate issues of concern in the following ways:

- At ‘open house’ events at the mine and the nearby Kiistala village and in the town of Levi, events occurred in 2018, one in 2019 but due to COVID no other events were completed in 2020 and 2021.
- By phone or email to e.g. the Sustainability and Development Manager.
- Promotional material e.g. Kittilä mine news (Kaivossanomat) is sent to stakeholders every year.
- Through the ‘Contact Us’ page on the Agnico Eagle Finland website (https://agnicoeagle.fi/contact-2/).
- Through the community liaison committee members.

Standard of Practice 9.2: **Make appropriate operational and environmental information regarding cyanide available to stakeholders.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 9.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 9.2; to make appropriate operational and environmental information regarding cyanide available to stakeholders.

The operation has developed written descriptions of how their activities are conducted and how cyanide is managed. These descriptions are available to communities and other stakeholders.

Details of cyanide operations and emergency plans are sent to the local authorities for comment.

A safety bulletin is also sent to local residents every 5 years (a copy of the last one sent put in 2017 was observed on site). According to site staff, the next one will be sent in 2022.

The local population have not been identified as illiterate. The local population are therefore informed of activities at the site including the use of cyanide through community meetings and the safety bulletin.

The operation does make information publicly available on confirmed cyanide release or exposure incidents. No cyanide related incidents have occurred at the Site to date. The site has a number of systems in place, including social media and through media connections (site holds a database of media connections for local, national and international press) that it would use to inform the public of incidents. The Site also has a Facebook page and also holds open meetings with the local community.

Information provided to the public would include the following where relevant: Cyanide exposure resulting in hospitalization or fatality; Cyanide releases off the mine site requiring response or remediation; Cyanide releases on or off the mine site resulting in significant adverse effects to health or the environment; Cyanide releases on or off the mine site requiring reporting under applicable regulations; Releases causing applicable limits for cyanide to be exceeded.

Open house meetings are also performed, with direct meetings with the local community.

Signature Page

Golder Associates (UK) Ltd

Dale Haigh
Lead Auditor

Sophie Wheeler
Project Manager

19 May 2022

MS/SW/gg

WSP UK Limited, a limited company registered in England & Wales with registered number 01383511
Registered office: WSP House, 70 Chancery Lane, London, WC2A 1AF
VAT No. 905054942

golder.com