# ICMC RECERTIFICATION SUMMARY AUDIT REPORT

*Fort Knox Gold Mine, Alaska, USA*

Submitted to:

**International Cyanide Management Institute (ICMI)**

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Washington, DC 20005
United States of America

Submitted by:

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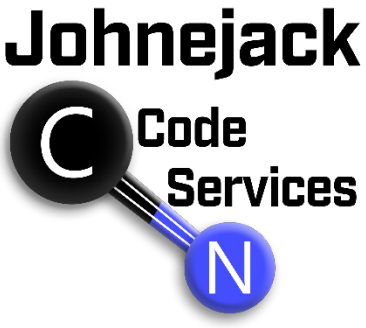

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ADEC | Alaska Department of Environmental Conservation |
| ADFG | Alaska Department of Fish and Game |
| BCHL | Barnes Creek Heap Leach |
| CCR | Construction Completion Report |
| CEA | Certified Environmental Auditor |
| CIC | carbon-in-column |
| CIP/CIL | carbon-in-pulp/carbon-in-leach |
| CN | cyanide |
| Code | International Cyanide Management Code |
| Draslovka | Draslovka Mining Solutions |
| EAP | Emergency Action Plan |
| EMT | Emergency Medical Technician |
| EOR | Engineer of Record |
| ERP | Emergency Response Plan |
| ERT | Emergency Response Team |
| ERV | Emergency Response Vehicle |
| FGMI | Fairbanks Gold Mining, Inc. |
| Ft Knox | Fort Knox Gold Mine |
| gpm | gallons per minute |
| HCN | hydrogen cyanide gas |
| HDPE | high-density polyethylene |
| HLP | heap leach pad |
| HS | Health Standards |
| ICMC | International Cyanide Management Code |
| ICMI | International Cyanide Management Institute |
| Kinross | Kinross Gold Corporation |
| LCRS | leachate collection and recovery system |
| mg/L | milligrams per liter |
| MSHA | Mine Safety and Health Administration |
| O&M | Operations and Maintenance |
| QAPP | Quality Assurance Project Plan |
| OPG | Operating Guidelines |
| PCMS | process component management system |
| PE | Registered Professional Engineer |
| PLLC | Professional Limited Liability Company |
| PPE | personal protective equipment |
| ppm | parts per million |
| QA/QC | Quality Assurance/Quality Control |
| RO | reverse osmosis |
| SCBA | self-contained breathing apparatus |
| SDS | safety data sheet |
| SLS | solid-to-liquid system |
| SOP | Standard Operating Procedure |
| SPAR | Spill Prevention and Response |
| SRCE | Standardized Reclamation Cost Estimator |
| TSF | tailings storage facility |
| WAD | weak acid dissociable |
| WCHL | Walter Creek Heap Leach |

# 1.0 OPERATION GENERAL INFORMATION

| | |
|---|---|
| **Name of Mine:** | Fort Knox Gold Mine |
| **Name of Mine Owner:** | Kinross Gold Corporation |
| **Name of Mine Operator:** | Fairbanks Gold Mining, Inc. (FGMI) |
| **Name of Responsible Manager:** | Bartly Kleven, Environmental Affairs Director |
| **Address:** | 1 Fort Knox Road<br>PO Box 73726<br>Fairbanks |
| **State/Province:** | Alaska 99707-3726 |
| **Country:** | USA |
| **Telephone:** | (907) 490-2207 |
| **Fax:** | (907) 490-2290 |
| **E-Mail:** | bartly.kleven@kinross.com |

# 2.0 OPERATION LOCATION DETAIL AND DESCRIPTION

The Fort Knox Gold Mine (Ft Knox) is located 26 miles by road northeast of the city of Fairbanks, Alaska (Figure 1). Kinross mining and exploration properties are located within the Fairbanks mining district, a northeast trending belt of lode and placer gold deposits that is one of the largest gold producing areas in the state of Alaska. Figure 2 shows a current aerial photograph of the site.

An Italian prospector named Felix Pedro discovered gold in the Fairbanks mining district in 1902. Between 1902 and 1993, more than 8 million ounces of predominately placer gold was mined in the district. In 1984, a geologist discovered visible gold in granite-hosted quartz veins on the Ft Knox property. Between 1987 and 1991, several companies conducted extensive exploration work on the Ft Knox, True North, and Gil properties. In 1992, Amax Gold Inc. (now Kinross Gold Corporation [Kinross]) acquired ownership of Ft Knox. Construction of the Ft Knox mine and mill operations began in 1995 and was completed in 1997. Commercial production at Ft Knox was achieved on March 1, 1997. The mine is operated by Fairbanks Gold Mining, Inc. (FGMI).

Ft Knox is an open pit mine with two heap leach pads (HLPs), a tailings storage facility (TSF), waste rock facilities, a mill complex, a reverse osmosis (RO) water treatment plant, and an outfall to Fish Creek.

Ft Knox has procured cyanide from Draslovka Mining Solutions (Draslovka), a certified producer, throughout the audit cycle. Shipping from Draslovka's plant in Tennessee occurred via Draslovka's certified supply chain. During most of the audit cycle, Ft Knox received solid cyanide (briquettes) in supersacks for storage at an onsite warehouse and dissolution at an onsite mixing area. However, Ft Knox started receiving solid cyanide in Solid-to Liquid Systems (SLS, hereafter isotanker) in August 2024 for mixing and offloading in a new Cyanide Mix Building.

The main circuits are shown on the process flow diagram in Figure 3:

- Crushing and milling for coarse ore (brown)
- Ore slurry circuit with cyclones and pre-leach thickener (tan)
- Gravity circuit via Knelson concentrator and Acacia reactor (orange)
- Process water includes carbon-in pulp and leach circuit (CIP/CIL) (blue)
- Pregnant solution (orange) and barren solution includes two HLPs and two carbon-in-column (CIC) circuits (purple)
- Boiler circuit includes stripping and elution circuits (red)
- Carbon circuit (black)
- Tailings thickener, cyanide destruct, and TSF (grey)
- Gold furnace (yellow)

Because the site's water balance results in an excess of water, Ft Knox operates a RO water treatment plant (RO #2) with discharge at Outfall 2 to Fish Creek.

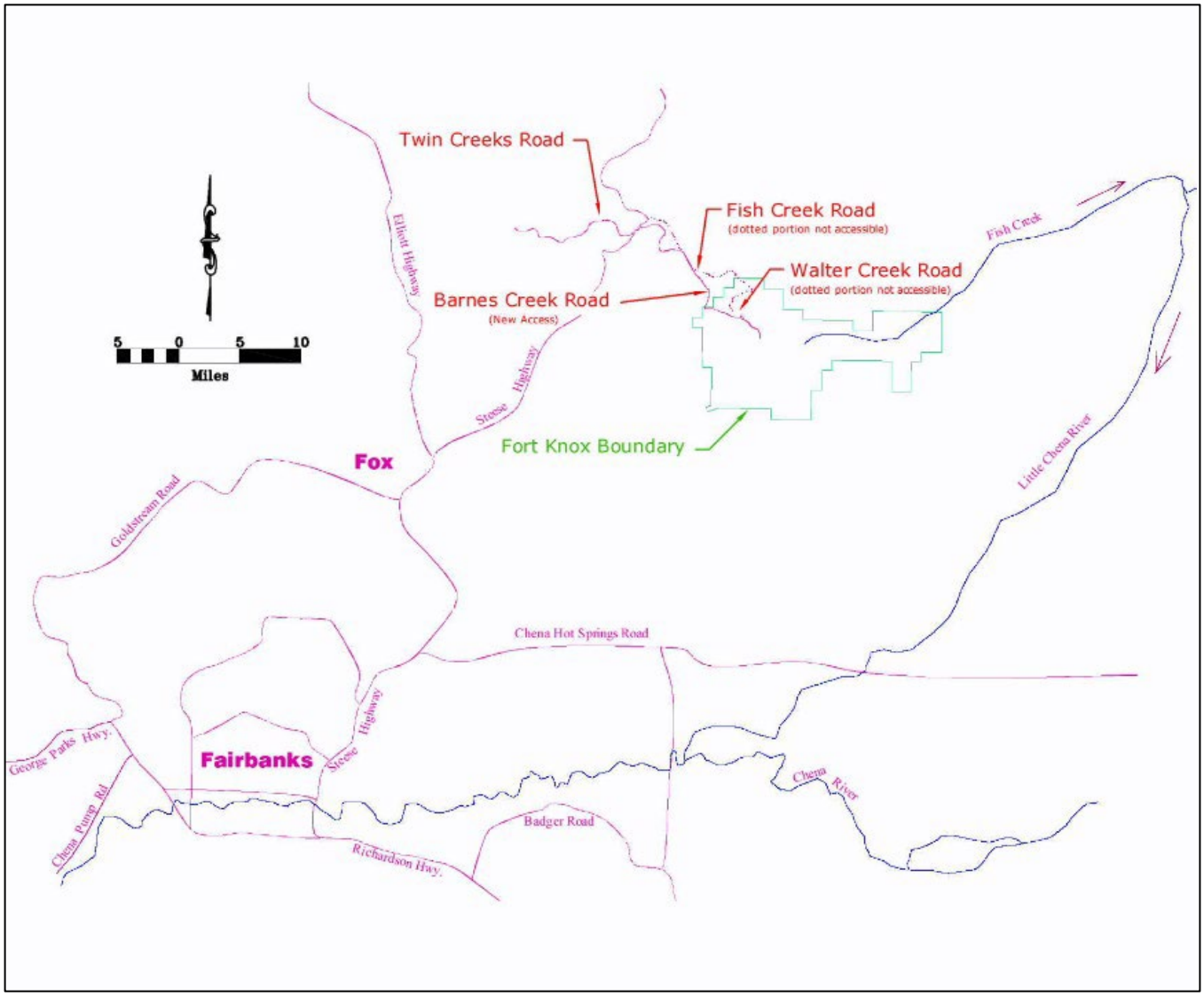



**Figure 1: Location Plan (from 2023 Best Management Practices Plan)**


**Figure 2: Aerial Photograph (provided by Ft Knox)**

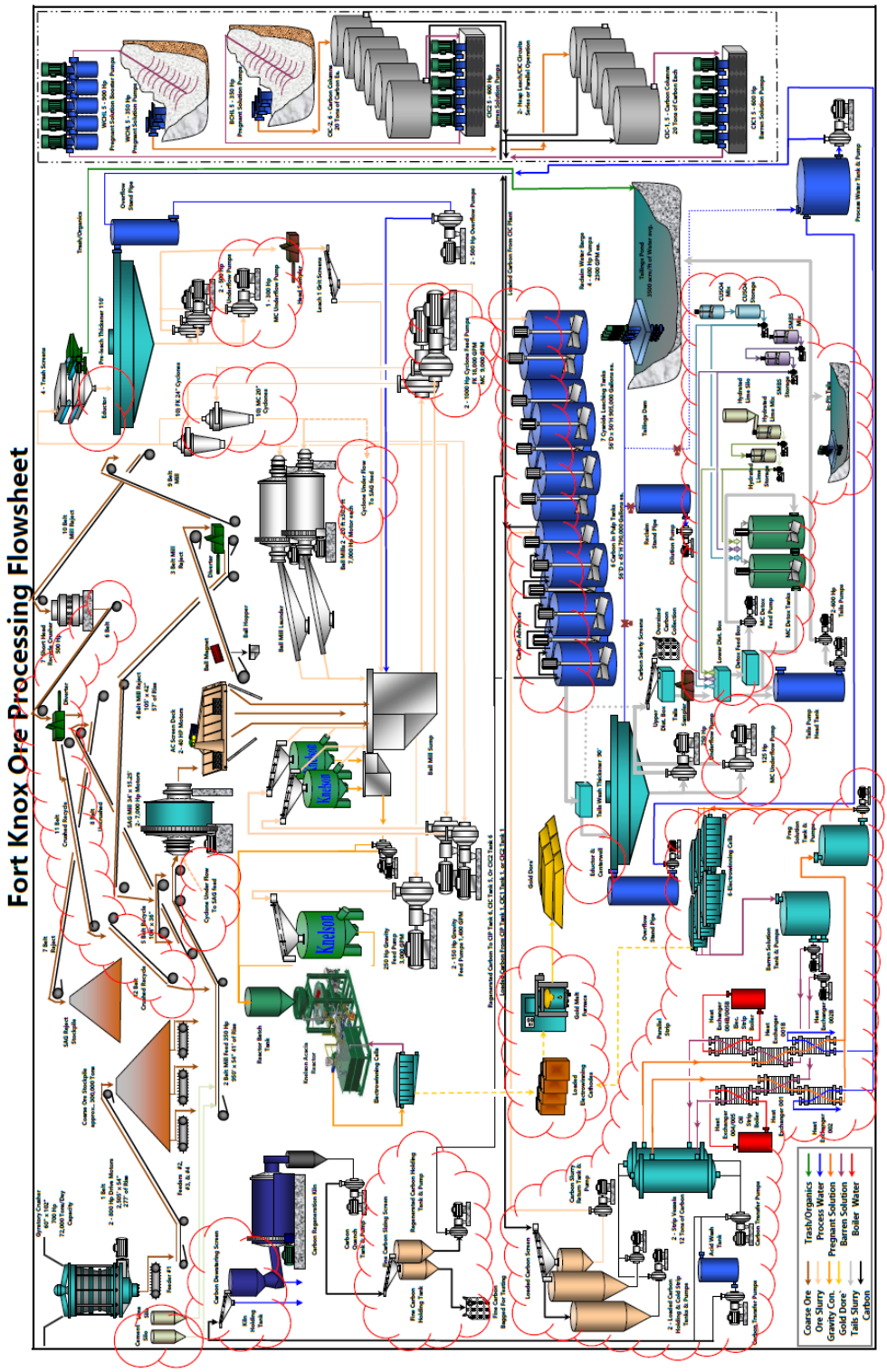



**Figure 3: Simplified Process Flow Sheet (updated by Ft Knox 2024)**

Cyanide facilities are identified based on process knowledge, but also by analysis of solution samples for the concentration of weak acid dissociable (WAD) cyanide. The International Cyanide Management Code (Code or ICMC) excludes refineries/smelters and site laboratories as cyanide facilities because of their controlled setting and limited amount of cyanide present. Table 1 lists the cyanide facilities at Ft Knox. New or modified cyanide facilities this audit cycle include:

- Expansions of the Barnes Creek HLP
- Two new cyanide detox tanks
- New cyanide mix building
- In-pit TSF with tailings and return water pipelines
- Raise to Pearl Creek Causeway between the TSF North and South Ponds

**Table 1: Cyanide Facilities**

| Area | Facility | Cyanide Facility? Yes/No | New or Modified? Yes/No | Rationale |
|---|---|---|---|---|
| Cyanide Reception& Mixing Areas | Loading Dock | **YES** | --- | Supersack storage |
| | Cyanide Mix Building | **YES** | Yes | Building for SLS mixing |
| | Cyanide Mixing Tank (1) | **YES** | --- | High-strength solution present |
| | Cyanide Storage Tank (1) | **YES** | --- | High-strength solution present |
| Milling | Gyratory Crusher (1) | No | --- | No cyanide solution present |
| | SAG Mill (1) | No | --- | No cyanide solution present |
| | Recycler Crusher (1) | No | --- | No cyanide solution present |
| | Ball Mill Sump (1) | **YES** | --- | Process solution present |
| | Ball Mills (2) | **YES** | --- | Process solution present |
| Thickening | Cyclone Clusters (2 at 10 ea.) | **YES** | --- | Process solution present |
| | Pre-leach Thickener (1) | **YES** | --- | Process solution present |
| | Overflow Standpipe (1) | **YES** | --- | Process solution present |
| Gravity Circuit (Refinery) | Knelson Concentrators (3) | **YES** | --- | Process solution present |
| | Acacia Reactor (1) | **YES** | --- | High-strength solution present |
| | Electrowinning Cell (1) | No | --- | Refinery excluded by Code |
| Processing Plant | Cyanide Leach (CIL) Tanks (7) | **YES** | --- | Process solution present |
| | Carbon-in-Pulp (CIP) Tanks (6) | **YES** | --- | Process solution present |
| | Tails Thickener (1) | **YES** | --- | Process solution present |
| | Overflow Standpipe (1) | **YES** | --- | Process solution present |
| | Tails Pump Head Tank (1) | **YES** | --- | Process solution present |
| | Former Detox Tanks (2) | **YES** | --- | Inactive |
| | New Detox Tanks (2) | **YES** | Yes | Process solution present |
| | Process Water Tank (1) | **YES** | --- | Process solution present |
| | Barren Solution Tank (1) | **YES** | --- | Process solution present |
| Carbon Regen-eration | Carbon Regen Kiln (1) | No | --- | No process solution present |
| | Kiln Holding Tank (1) | No | --- | No process solution present |
| | Fine Carbon Holding Tank (1) | No | --- | No process solution present |
| | Carbon Quench Tank (1) | No | --- | No process solution present |
| | Regen Carbon Holding Tank (1) | No | --- | No process solution present |
| | Carbon Slurry Return Tank (1) | **YES** | --- | Process solution present |
| | Loaded Carbon Holding Tank (1) | **YES** | --- | Process solution present |
| Elution | Strip Vessels (2) | **YES** | --- | Process solution present |

| Area | Facility | Cyanide Facility? Yes/No | New or Modified? Yes/No | Rationale |
|---|---|---|---|---|
| | Heat Exchanger Tank (1) | **YES** | --- | Process solution present |
| | Heat Exchangers (3) | **YES** | --- | Process solution present |
| Refining & Smelting | Electrowinning Cells (4) | No | --- | Refinery excluded by Code |
| | Gold Melt Furnace (1) | No | --- | Refinery excluded by Code |
| HLPs | Walter Creek HLP (1) | **YES** | --- | Leach solution present |
| | Walter Creek In-heap Pond (1) | **YES** | --- | Leach solution present |
| | Barnes Creek HLP (1) | **YES** | Yes | Leach solution present |
| | Barnes Creek In-heap Pond (1) | **YES** | --- | Leach solution present |
| | Carbon-in-Column #1 (5) | **YES** | --- | Leach solution present |
| | Carbon in Column #2 (6) | **YES** | --- | Leach solution present |
| TSF | Reclaim Standpipe (1) | **YES** | --- | Process solution present |
| | South Pond | **YES** | Yes | Tailings and return water present |
| | North Pond | **YES** | --- | Tailings and return water present |
| | Barge Pond | **YES** | --- | Tailings and return water present |
| | In-pit TSF | **YES** | Yes | Tailings and return water present |
| Ancillary | TSF Tailings/Return Pipelines | **YES** | --- | Tailings and return water present |
| | In-pit TSF Tailings/Return Pipelines | **YES** | Yes | Tailings and return water present |
| | Barnes Creek HLP Pipelines | **YES** | --- | Barren/pregnant solution present |
| | Walter Creek HLP Pipelines | **YES** | --- | Barren/pregnant solution present |
| | 801 Pond | No | --- | WAD cyanide <0.5 mg/L |
| | Tailings Seepage Pond | No | --- | WAD cyanide <0.5 mg/L |
| | HLP Stormwater Diversions | **YES** | --- | Control devices |
| | Laboratory | No | --- | Laboratory excluded from Code |
| Water Treatment Plants | RO 1 Unit – Standby (1) | No | --- | Not in service |
| | RO 2 Unit – TSF Seepage (1) | **YES** | --- | Low levels cyanide present |
| | RO 3 Unit – Inactive (1) | No | --- | Not in service |
| | Outfall No. 2 to Fish Creek (1) | No | --- | WAD cyanide <0.5 mg/L |
| | Upper Wetland (1) | No | --- | WAD cyanide <0.5 mg/L |
| | Lower Wetland (1) | No | --- | WAD cyanide <0.5 mg/L |
| | Fresh Water Reservoir (1) | No | --- | WAD cyanide <0.5 mg/L |
| Waste Rock Facilities | Barnes Creek WRF (1) | No | --- | No cyanide solution present |
| | Victoria Creek WRF (1) | No | --- | No cyanide solution present |
| | Fish Creek WRF (1) | No | --- | No cyanide solution present |

Note: Value in parentheses is the number of units

## 3.0 AUDITORS FINDINGS

| | | |
|---|---|---|
| **The operation is:** | ☒ **in full compliance with** | **The International Cyanide Management Code** |
| | ☐ in substantial compliance with | |
| | ☐ not in compliance with | |

The operation has experienced compliance issues during the previous three-year audit cycle which are discussed in this report under Standards of Practice 4.4 and 4.5.

# 4.0 AUDITOR INFORMATION

Audit Company: Johnejack CN Code Services, PLLC

Lead Auditor: Kent Johnejack, PE, CEA

Mining Technical Specialist: Kent Johnejack, PE, CEA

Dates of Audit: September 9 to 12, 2024

Email: kjohnejack@gmail.com

The audit was conducted using the Guidance for Use of the Mining Operations Verification Protocol (June 2021).

I attest that I meet the criteria for knowledge, experience, and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, as 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 Certification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the certification audit. I further attest that the certification 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.

Name of Facility: Fort Knox Gold Mine

Date: March 31, 2025

Signature: 

# 5.0 PRINCIPLE 1 – PRODUCTION

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

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

☒ **in full compliance with**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has purchased cyanide from a single certified producer throughout the audit cycle: Draslovka, formerly Chemours North America. The 2019 and 2022 Summary Audit Reports for Chemours and Draslovka, respectively, were reviewed to verify compliance, as well as the 2020 contract between Ft Knox and the producer. The auditor observed only cyanide supplied by Draslovka during the site visit.

# 6.0 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.**

**The operation is**

☒ **in full compliance with**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has retained Bills of Lading for the last stage of transport by Alaska West Express from their terminal in Fairbanks to the mine. The auditor reviewed examples of the Bills of Lading from throughout the audit cycle to verify compliance. The supply chain is adequately described in a letter from Draslovka.

Ft Knox has received cyanide from a single certified supply chain throughout the audit cycle: the Draslovka US and Canada Rail and Barge Supply Chain, formerly the Chemours US/Canada Rail & Barge Supply Chain. The 2017 and 2022 Summary Audit Reports for Chemours and Draslovka, respectively, were reviewed to verify compliance. Alaska West Express is independently certified. The 2019 and 2023 Summary Audit Reports were reviewed to verify compliance.

# 7.0 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

**Summarize the basis for this finding:**

Ft Knox has designed and constructed its unloading, storing, and mixing facilities in accordance with industry standards. The loading dock for storing supersacks of solid cyanide inside the tails thickener building and the mix/and storage tank area inside the CIC #2 building were unchanged this audit cycle and achieved compliance in the previous audit cycles. The new cyanide mix building for isotanker offloading was designed by a registered civil engineer. Construction Quality Assurance/Quality Control (QA/QC) included earthwork, concrete, and piping. The Construction Certification Letter stated that "…the Cyanide Mix Building…has been constructed in accordance with the stamped drawings and technical specifications, along with changes thereto, for the project…equipment and systems are functioning with the intent of the design." Minor modifications were made to the cyanide mix tank to accommodate the isotanker system; none were made to the cyanide storage tank.

Ft Knox has located its unloading, mixing, and storage facilities away from people and surface water. The new cyanide mix building is located next to the CIC #2 building. No offices or places where people may congregate area located near the mix building and there are no communities near the mine. There is no direct flow path from the mill to the nearest surface water approximately 1.5 miles away.

For most of this audit cycle, Ft Knox mixed solid cyanide from supersacks and did not unload any liquid cyanide. Since mid-2024, however, liquid cyanide is produced at the time of isotanker offloading. Isotankers are offloaded on a concrete pad that prevents seepage to the subsurface and allows for recovery of leakage in a sump with an automatic pump to return solution to the CIC #2 carbon safety screens. The floor of the new mix building has been designed to contain 119% of the volume of an isotanker.

Ft Knox has installed systems to prevent overfilling of the cyanide mix tank and cyanide storage tank. Both tanks have level sensors with high and high-high set points. An interlock prevents between the isotanker and the mix tank automatically shuts down transfer to prevent overfilling. An interlock between the mix tank and storage tank shuts down the transfer pump if the high level is reached in the storage tank, thereby preventing overfilling of the storage tank. The auditor observed the measurements for these level sensors on the panels in the control room, as well as on the local readouts, to verify they were functioning. Ft Knox has maintained these level sensors monthly during the audit cycle, as evidenced by the maintenance history exported from the maintenance software.

Ft Knox has installed the cyanide mix tank and storage tank inside a secondary containment with concrete walls and floor that provides a competent barrier to leakage and prevents seepage to the subsurface. This containment is equipped with a sump with a level sensor and automatic pump that returns solutions to the mix tank. This containment was unchanged this audit cycle and therefore achieved compliance in the five previous audit cycles. The auditor observed it to be in good condition.

The loading dock in the tails wash thickener building and the cyanide mix/storage tank area in the CIC #2 building:

- Minimize the potential for contact between solid cyanide and water by being inside roofed and walled buildings with concrete floors, which the auditor observed to be in good condition
- Prevent the buildup of hydrogen cyanide gas (HCN) by being inside large-volume buildings with ventilation vents and rollup doors
- Limit access by their location within the secure area of the mine and by locking the door to the loading dock
- Store no other materials in the loading dock and by storing only caustic solution within the secondary containment for the cyanide mix and storage tanks

The new cyanide mix building:

- Minimizes the potential for contact between solid cyanide and water using isotankers designed for the elements, as well as being a roofed and walled building with a concrete floor
- Prevents the buildup of HCN by exhausting the building air with recirculation and exhaust fans on the upper level at the same time louvered windows on the ground level draw in fresh air; the cyanide mix tank is vented to outside the CIC #2 building
- Limits access by its location within the secure area of the mine and by closing the isotanker valves with seals until the time of mixing
- Stores no materials other than cyanide isotankers, as observed by the auditor during the site visit

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

☒ **in full compliance with**

**The operation is**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox received solid cyanide in supersacks for most of the audit cycle. Empty supersacks are hauled to the onsite landfill after each mixing event to prevent reuse. Landfill cover is placed weekly to monthly. The isotankers that have been received since mid-2024 are returned to the producer.

Ft Knox has rinsed empty plastic bags from the supersacks with water three times during the audit cycle, as prescribed in a written procedure. The Mill Operations General Foreman confirmed this practice by interview during the site visit.

Ft Knox has properly disposed of wooden pallets and cardboard from the supersacks during the audit cycle by hauling them to the onsite burn pit after each mixing event. Burning takes place monthly.

Ft Knox has cleaned cyanide residue from the isotankers and securely closed the connections on the isotankers before returning them to the producer, as verified by a line item for “Tank exterior cleaned” in completed examples of the isotanker mixing checklist.

Ft Knox has properly operated hoses, valves, and couplings for mixing solid cyanide in supersacks and isotankers during the audit cycle, as detailed in two written procedures. The auditor observed an isotanker offloading/mixing event during the site visit to verify use of the procedure, but there was no opportunity to observe a supersack mixing event. Ft Knox is responsible for maintaining its offloading equipment under its mill maintenance program, but the producer is responsible for maintaining the isotankers.

Ft Knox has handled supersacks without rupturing or puncturing during the audit cycle. A written procedure includes detailed steps for removing supersacks from the intermodal containers with a pallet puller and forklift, and then placing them in the loading dock for storage. This procedure also contains detailed instructions for transferring the supersacks one at a time by forklift from the loading dock to the cyanide mix/storage tank area in the CIC #2 building for mixing. Forklift operation requires training, pre-operational checks, and proper methods, as prescribed in a written procedure. In addition, the new isotanker offloading procedure includes a section on proper positioning and alignment of an isotanker in the bays of the new cyanide mix building.

Ft Knox has limited the height of the stacked supersacks at the loading dock during the audit cycle to two supersacks high, as prescribed in a written procedure. The auditor observed the loading dock during the site visit to confirm supersacks were stacked no more than two high.

Ft Knox has developed procedures for managing cyanide spills, including those during mixing and offloading cyanide from isotankers. The Cyanide Safety procedure discusses timely cleanup of cyanide spills and the Spill Reporting and Sampling procedure provides further details on spill response.

Ft Knox has safely mixed supersacks and isotankers during the audit cycle with appropriate PPE and observation. Written procedures require the same personal protective equipment (PPE) for supersack mixing and isotanker offloading: safety glasses, high-visibility clothing, hard hat, rubber gloves and boots, respirator with dust cartridges, face shield, and industrial rain gear. The written procedures also require checking in with the control room and the use of two persons for mixing and offloading; isotanker offloading is also observed by video from the control room. The auditor reviewed examples of completed mixing checklists for supersacks and isotankers. The auditor also observed an isotanker mixing event during the site visit to confirm that the proper PPE is used, two operators are present, and video observation takes place.

Ft Knox has received solid cyanide during the audit cycle in supersacks and isotankers with red dye added by the producer at the time of loading and shipping. The auditor observed randomly selected addition points to verify that the high-strength solution was clearly reddish for identification.

# 8.0 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, inspection, and preventative maintenance procedures.**

**The operation is**

☒ **in full compliance with**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Table 1 in Section 2 of this Summary Audit Report lists the cyanide facilities and the non-cyanide facilities. New or modified cyanide facilities in this audit cycle are:

- Expansion of the Barnes Creek Heap Leach (BCHL)
- Two new cyanide detox tanks
- New cyanide mix building
- Raise to Pearl Creek Causeway between the TSF North and South Ponds
- In-pit TSF, pipelines, and booster station

Kinross, the parent company of Ft Knox, has adopted management systems whose guidelines flow down to Ft Knox. Kinross is a member of the World Gold Council. Kinross manages tailings impoundments in accordance with the Canadian Dam Association Guidelines, the Mining Association of Canada's Towards Sustainable Mining program, and the Global Industry Standard on Tailings Management. As stated on the Kinross website, their Environmental Management System is aligned with International Organization for Standardization 14001 (https://www.kinross.com/sustainability/our-approach/commitments-and-recognition/default.aspx). Ft Knox also follows the Kinross Americas Health and Safety Guidelines, which includes a health and safety policy and a set of standard guidelines.

Ft Knox has plans, procedures, permits, manuals, and other documents that define the assumptions, design criteria, regulatory requirements, and operating parameters for safe cyanide management. Key criteria and parameters described in these documents include:

- High-strength cyanide solution
  - Concentration = 24%
  - pH = 12 or greater
- Acacia (Refinery)
  - Sodium hydroxide Batching setpoint = 25 gallons in 2,400 gallons raw water
  - Cyanide batching setpoint = 220 gallons in 2,400 gallons raw water
- Mill
  - Ft Knox Ore operating parameters
    - CIP target cyanide = 55 milligrams per liter (mg/L)
    - Leach 1 pH = 10.4
  - Manh Choh Ore operating parameters

    - CIP 6 target cyanide = <200 mg/L
    - Leach 1 pH = 10.5 to 10.8
- BCHL
    - Design storm = 100-year, 24-hour September rain-on-snow event of 4 inches resulting in 31.2 million gallons (at the time of design in 2016)
    - In-heap pond freeboard = 5 feet
    - Maximum leach solution flow rate = 20,000 gallons per minute (gpm)
    - Leachate collection and recovery system (LCRS) flow limit = 525 gpm
    - Process component monitoring system (PCMS) limit = 10 mg/L WAD cyanide
    - Underdrain limit = 0.2 mg/L WAD cyanide
- WCHL
    - Design storm = 100-year, 24-hour storm event of 32 million gallons (at the time of design in 2006) rain-on-snow event
    - In-heap pond freeboard = 5 feet
    - Maximum leach solution flow rate = 16,000 gpm
    - LCRS flow limit = 450 gpm
    - PCMS limit = 10 mg/L WAD cyanide
    - Underdrain limit = 0.2 mg/L WAD cyanide
- Detox
    - Effluent slurry pH = 6 to 11
    - Effluent slurry WAD cyanide = 25 mg/L shift composite and 10 mg/L monthly average
- TSF
    - Freeboard = 3 feet for 100-year, 24-hour event and 1 foot for Probable Maximum Flood
    - Maximum deposition rate = 50,000 tons per day as a monthly average
    - Decant return water pH = 6 to 11
- Reverse Osmosis Treatment Plant discharge standard = 0.05 mg/L WAD cyanide
- Surface water standard = 0.05 mg/L WAD cyanide
- Groundwater
    - Point-of compliance standard = 0.05 mg/L WAD cyanide
    - Interceptor well alert level = 1.0 mg/L WAD cyanide

Ft Knox has developed a large set of Standard Operating Procedures (SOPs) and Operating Guidelines (OPG), as well as corporate Health Standards (HS), that describes the standard practices necessary for safe and environmentally sound management of the cyanide facilities. These documents address specific measures for compliance with the Code, including water management, inspections, and maintenance. Each procedure starts with a worker sign-off section for training purposes. The different types of procedures have slightly varying content that generally includes purpose and scope; training requirements; PPE, tools, and specialized PPE; physical, chemical, and environmental hazards; responsibilities; procedural steps; inspections; among others. Ft Knox has reviewed and updated, if necessary, these documents during the audit cycle with most being recently reviewed in 2024.

Ft Knox has developed a Management of Change procedure that covers modifications to a plant, equipment, control system, process conditions, and operating procedures. Ft Knox has implemented the Management of Change procedure and provided four examples for the audit cycle: in-pit tailings pipeline; elimination of amyl nitrite; new cyanide mix building; and relocation of mill muster point. The forms were signed by technical, safety, and environmental representatives.

Ft Knox has developed procedures for reacting to upsets in the water balance in their Operation and Maintenance (O&M) Manuals and Emergency Action Plan (EAP) for the TSF. The TSF O&M Manual describes mitigation measures (equivalent to contingency actions) for overtopping by floodwaters or reduction in freeboard and/or loss of dam crest width: reduce volume of water stored, run critical events pipeline, increase erosion resistance of downstream slope, divert floodwaters, open outlet works on Freshwater Reservoir, provide siphons or pumps, and place additional riprap or sandbags. The O&M Manuals for the BCHL and Walter Creek Heap Leach (WCHL), as well as the EAP, describe similar mitigation measures.

Ft Knox has developed procedures for problems identified by monitoring and inspection in their O&M Manuals, procedures, and permits. The TSF, BCHL, and WCHL O&M Manuals event detection, escalation, and contingency actions for a variety of scenarios. Four written procedures describe startup and shutdown procedures for the CIC circuits, semi-autogenous grinding mill, tails thickener, and cyanide destruction circuit. Permits contain regulatory contingency plans for issues identified by inspections and monitoring at the TSF, BCHL, WCHL, and RO plants.

Ft Knox has developed Temporary Cessation Plan. Solid cyanide will be returned to the producer. Residual high-strength solution will be used, and the mixing and storage tanks will be rinsed and drained. The mill circuit will be drained. Heap leach solution will be recirculated within the HLPs. The water balance and its required monitoring will be maintained. Surface water diversions will be maintained. The seepage collection system at the toe of the TSF and the RO treatment will continue to be operated and monitored. Groundwater and surface water monitoring will continue as required by permits. Regular inspections and maintenance will be conducted.

Ft Knox has inspected unloading, storage, mixing, and process areas as shown in the table below. The auditor reviewed representative examples of each of these forms and checklists from throughout the audit cycle to verify compliance.

| Type/Area | Inspectors | Frequency | Media |
|---|---|---|---|
| Supersack Mixing Checklist | Operators | Per Event | Paper |
| Isotanker Mixing Checklist | Operators | Per Event | Paper |
| Mill Area Safety and Housekeeping Checklists | Operators | Shift | Paper |
| Pond Route Sheets | Operators | Daily | Paper |
| BCHL and WCHL Route Sheets | Operators | Daily | Paper, electronic |
| Tails Line Route Sheets | Operators | Daily | Electronic |
| Planned General Inspections (rotating – all areas) | Managers | Weekly | Electronic |
| TSF, BCHL, WCHL Dam Inspections | EOR | Annual | Report |
| Mill Cyanide Loop Route | Maintenance | Monthly | Electronic |
| Environmental Area Inspections | Env. staff | Weekly | Electronic |
| Secondary Containment Inspection Route Sheets | Maintenance | Biannual | Electronic |

EOR = Engineer of Record

Ft Knox has implemented a tank integrity testing program and conducted visual inspections during the audit cycle. A contractor measured wall thickness with an ultrasonic device on the CIP/CIL columns, cyanide mix tank, and cyanide storage tank in 2023 and 2024. Pre-operational and routine inspections of the CIP/CIL area are addressed in a written procedure.

Ft Knox has inspected the cyanide-related secondary containments for tanks and pipelines during the audit cycle using the area safety and housekeeping inspections and a newly developed inspection route specifically for the detox, CIP/CIL, barren, and mix/storage containments. Pipeline containments, including the valve enclosure buildings, have been inspected during the BCHL and WCHL routes.

Ft Knox has inspected the LCRS systems for the BCHL and WCHL during the audit cycle, as required by permit. Route sheets document the LCRS solution levels and pumping rates, as well as the presence/absence of flow in the PCMS. The LCRS have been sampled weekly for analysis of total and WAD cyanide with the data reported in regulatory reports.

Ft Knox has inspected pipelines, pumps, and valves during the audit cycle. These items and their condition have been documented during the BCHL and WCHL routes, the pond route, the tailings line route, and the cyanide loop route. The Mill Area Safety and Housekeeping inspections also document cyanide salts, if present. The tailings pipelines for the In-pit TSF are inspected daily using a new inspection route since becoming operational in mid-2024.

Ft Knox has inspected ponds and impoundments during the audit cycle. Route sheets for the heap leach pads document the solution elevations in the in-heap ponds, solution application rates, and solution extraction rates. The pond route sheet documents the water levels in the TSF. Surface water diversions for the heap leach pads and the spillways for the in-heap ponds are inspected using the BCHL and WCHL route sheets, as well as the area inspections by the environmental staff. The TSF does not have any upgradient diversions, but groins and rock dams for managing runoff associated with the embankment are visually inspected during the annual EOR inspections. Instrumentation such as accelerometers, vibrating wire piezometers, and settlement monuments, are also checked during Engineer-of-Record (EOR) inspections.

Ft Knox has inspected the cyanide facilities on an established frequency during the audit cycle sufficient to ensure and document that they are functioning within design parameters. The inspections have been conducted per event, shift, daily, weekly, monthly, biannually, and annually.

Ft Knox has well-designed inspection forms and checklists, whether paper or electronic, in that they identify specific items to be noted and the expected condition. Deficiencies are described in notes. Records include the date (and shift when applicable) of the inspection and the name of the inspector. Once a deficiency is noted, the work order system in the maintenance software takes over. Work orders are noted as “complete” along with the date of completion in the software when the corrective action has been completed. The auditor reviewed representative examples of the various types of inspections to verify compliance throughout the audit cycle.

Ft Knox has implemented preventive maintenance programs and documented these activities to ensure that equipment and devices function as necessary for safe cyanide management. Ft Knox manages maintenance using commercial software with a defined workflow process for preventative and corrective maintenance. The frequency for preventative maintenance is run-time duration and/or set time periods. Corrective maintenance for issues identified during inspections are prioritized as high, medium, or low. Review of maintenance histories showed that cyanide-related issues received high priority. The software was queried by equipment identification number and by cyanide work order for maintenance histories over the audit cycle. These randomly selected maintenance histories showed that cyanide facilities and equipment had been regularly maintained and serviced during the audit cycle.

Ft Knox has implemented a long-term maintenance program for the CIP/CIL columns. Interior inspections of the CIP/CIL columns have been conducted as possible when the columns were routinely taken out of service. CIP #4 was rehabilitated in mid-2024 and other columns are scheduled for rehabilitation. The scope of future efforts will be informed by additional non-destructive testing, noting that rehabilitation work is limited to the warmer summer months, thus necessitating a multi-year program.

Ft Knox has installed nine generators with a total capacity of 13.295 megawatts to provide backup power to prevent unintentional releases and exposures in the event of interruptions to the main power supply. Ft Knox

provided a 2021-2024 spreadsheet documenting monthly inspections and testing of all generators and weekly visual inspections of the BCHL and WCHL generators. Ft Knox also trained the staff quarterly on procedures to start the generators during a power outage. An external vendor maintained the generators throughout the audit cycle. The auditor observed several of these generators during the site visit and they visually were in good working order.

**Standard of Practice 4.2:** **Introduce management and operating systems to minimise 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

**Summarize the basis for this finding:**

Ft Knox has implemented a program to optimize cyanide addition rates in the mill. Prior to July 2024, the plant was processing ore from only the Ft Knox pit. From July 3, 2024 to August 2, 2024, and again from August 26 to September 19, 2024, the plant campaigned ore from it satellite pit some 250 miles away, Manh Choh. Ft Knox conducted bottle roll tests monthly during the audit cycle to verify the cyanide addition rate for the Ft Knox ore, as evidenced in a spreadsheet of results. Ft Knox evaluated various cyanide addition rates and ore blending strategies for the Manh Choh ore starting in 2022. Ft Knox adopted ore blending to reduce cyanide usage during the Manh Choh processing campaigns.

Ft Knox adjusts cyanide addition rates using automated controllers at four locations in the mill. The controllers automatically measure cyanide concentrations every 15 minutes and the cyanide flow rate is adjusted accordingly. Manual titrations are conducted every 2 hours to confirm the automatic titrations. The auditor observed screen shots from one controller to verify it was functioning and reviewed operator reports of manual titrations for the second Manh Choh ore campaign.

The efforts to optimize cyanide addition rates notwithstanding, the main method to minimize cyanide in tailings is treatment. Because the cyanide addition rate for the Ft Knox ore is low, dilution in the tails wash thickener provides sufficient reduction in the cyanide concentration in the tailings. Because the cyanide addition rate is high for the Manh Choh ore, Ft Knox destroys cyanide in the tailings using the Inco circuit during the Manh Choh campaigns.

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

☒ **in full compliance with**

**The operation is**

☐ in substantial compliance with **Standard of Practice 4.3**

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has developed a comprehensive and probabilistic Goldsim water balance that has been updated regularly since 2017. The model is comprehensive in that it includes the appropriate factors and cyanide facilities. It is

probabilistic in that it can be run in stochastic (Monte Carlo) mode or in posteriori (Deterministic) mode. The posteriori mode has been adopted because: the historical extremes are preserved in time; climate change can be included; and climate variables are input as they occurred in time. As paraphrased from a 2017 consultant presentation, deterministic inputs result in a set of equally likely outcomes that account for possible combinations of climate and operational variables.

The water balance includes, as appropriate for the facilities and environment, the following factors:

- Initial ore moisture content, leaching moisture content, draindown moisture content, heap loading schedules, leaching cycles, and solution application rates for the heap leach facilities, as well as tailings deposition rates as measured by biannual bathymetry surveys
- 100-year, 24-hour storm and the Probable Maximum Precipitation, as well as the minimum, average, and maximum annual precipitation depths
- A 109-year period of record for precipitation and modelled estimates of evaporation from snow, dry, wet, and open water surfaces
- Runoff from rain-on-soil, rain-on-snow, and snowmelt from natural ground, disturbed ground, tailings, leach ore, waste rock and the open pit
- Freezing and thawing conditions, as well as ice formation and melting
- Pumping of return water to the mill, as well as seepage to the seepage collection system and thence to the RO #2
- Discharge rates for RO #2 to Fish Creek
- Dewatering from the interceptor wells that maintain a cone of depression downgradient of the TSF embankment

The water balance does not include the effects of a power outage for the BCHL and WCHL because they are provided with backup generators and maintain capacity in the in-pit ponds for 24-hour draindown. The water balance does not include the effects of a power outage for the TSF because water levels would respond slowly to a power outage given the large capacity of the TSF relative to the loss of return water pumping.

Ft Knox has designed and operated its ponds and impoundments with adequate freeboard to prevent overtopping. The TSF has 3 feet of freeboard for the 100-year, 24-hour storm and 1 foot for the Probable Maximum Flood. The in-heap ponds in the BCHL and the WCHL both have 5 feet of freeboard. Due to the depth of the open pit below ground surface, overtopping from the in-pit tailings pond is impossible and freeboard is not a relevant design criterion.

Ft Knox has conducted forecasting, monitoring, and inspections to implement the water balance and prevent overtopping of ponds and impoundments. Forecasts are prepared biannually using recent precipitation data and bathymetry. Ft Knox has graphed water surface elevations in the TSF, BCHL, and WCHL over time to evaluate freeboard exceedances. Overtopping risk for the TSF is assessed at the Barge Pond, the last in the series of flow-through ponds. The graph showed that the freeboard elevation in the Barge Pond was not exceeded during the audit cycle. Ft Knox also provided time series graphs showing that the freeboard elevation was not exceeded in the in-heap ponds during the audit cycle. Daily inspections of the TSF, BCHL, and WCHL include water level elevations and the presence of debris or ice jams in diversion channels for the heap leach pads, as evidenced by examples during the audit cycle.

Ft Knox measures has measured daily precipitation at a meteorological tower located at the toe of the WCHL during the audit cycle. The auditor observed the tower to be in good operating condition during the site visit. A

consultant has developed a 109-year record of precipitation via monthly correlations between the onsite data and data from the Fairbanks University Experiment Station. These data have been incorporated into the most recent iteration of the Goldsim water balance model in the second quarter of 2024.

**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

**Summarize the basis for this finding:**

Ft Knox has implemented measures to prevent access to open waters by wildlife and birds. Livestock are not present near the mine. The in-heap solution collection ponds in the BCHL and WCHL are buried to prevent access by wildlife and birds. Pipelines, rather than open channels, are used to convey leach solutions to further prevent access. Physical restrictions to prevent wildlife and bird access to the TSF and the In-pit TSF are not needed because Ft Knox has maintained WAD cyanide concentrations less than 50 mg/L. The maximum concentrations of WAD cyanide in open waters during the audit cycle were as follows: tailings inflow to TSF 16.2 mg/L; return water from TSF 3.74 mg/L; 801 Pond (tailings seepage) 0.0495 mg/L; Tailings Seepage Pond 0.0805 mg/L, and tailings inflow to in-pit storage 2.6 mg/L.

Ft Knox has prevented significant wildlife mortality during the audit cycle except for one fish incident. The auditor reviewed 16 mortality reports sitewide from the audit cycle. All but the fish incident were due to vehicle collisions, starvation, or unknown causes. Five dead arctic grayling were found in the Upper Wetlands on Fish Creek in April 2022. Ft Knox cooperated with the Alaska Department of Environmental Conservation (ADEC) and Alaska Department of Fish and Game (ADFG) in an investigation. A consultant's report indicated that the total cyanide concentrations in the fish tissue may have been high enough to cause mortality. The investigation indicated, but could not prove, that startup conditions in RO #3 caused elevated cyanide concentrations in its effluent. The corrective action was to take RO #3 offline; it remained offline at the time of this Code audit. The fact that no other fishkill has occurred since RO #3 was taken offline is circumstantial evidence that RO #3 was the cause. A closing conference was held with ADEC in June 2022.

Ft Knox limits the potential for ponding on the BCHL and WCHL by burying the drip tube pipes. Even so, Ft Knox has developed a procedure with measures to eliminate or bury any ponding. The auditor observed small ponding areas on the WCHL during the site visit, which Ft Knox promptly corrected. Ft Knox applies leach solution to the outslopes with drip tubes placed on the surface, thereby avoiding overspray.

**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

**Summarize the basis for this finding:**

Ft Knox has a direct discharge from RO #2 of treated TSF seepage via a pipe outfall to the Upper Wetlands on Fish Creek. The auditor reviewed a spreadsheet of the weekly effluent data that showed most WAD cyanide results were non-detect at 0.003 mg/L during the audit cycle with a maximum of 0.0322 mg/L, which is less than the Code limit of 0.5 mg/L.

Ft Knox does not have an established mixing zone and therefore the Code limit of 0.022 mg/L free cyanide applies at the RO #2 outfall. Ft Knox analyzes weekly effluent samples for WAD cyanide rather than free cyanide because of permit requirements. Using a common assumption about the relationship between WAD and free cyanide (as was used in the two previous audit cycles), the free cyanide concentration is assumed to be ½ the WAD cyanide concentration because the free cyanide fraction cannot be higher than the WAD cyanide fraction. The maximum WAD cyanide concentration of 0.0322 mg/L during the audit cycle converts to a free cyanide concentration of 0.0161 mg/L, which is lower than the Code limit of 0.022 mg/L.

The results from two surface water grab samples collected in the receiving water at the location of the April 2022 fish incident were 0.171 and 0.179 mg/L WAD cyanide, which converts to 0.0855 mg/L and 0.0895 mg/L free cyanide, respectively, using the aforementioned assumption. Although these two values are higher than the Code limit of 0.022 mg/L free cyanide, the auditor considers Ft Knox to nonetheless be compliant because the fish incident was properly investigated, a corrective action implemented, and no fish incidents have been reported since.

Ft Knox has the potential for indirect discharges to surface water from TSF seepage, although the auditor considers this potential to be low because of the TSF interceptor wells and seepage collection/treatment system. Ft Knox provided a time series graph of WAD cyanide concentrations from weekly samples collected in the Upper and Lower Wetlands during the audit cycle. Using the aforementioned conversion of WAD cyanide concentrations to free cyanide concentrations, there were seven exceedances of the 0.022 mg/L free cyanide limit in the Upper Wetlands during this audit cycle. Two were minor and isolated exceedance in mid-2022 and the remaining five exceedances were minor but not isolated in mid-2021. There were two minor and isolated exceedances of the 0.022 mg/L free cyanide limit in the Lower Wetlands in 2021. The important takeaway from the time series graph is that all concentrations have been less than 0.02 mg/L WAD cyanide (or 0.01 mg/L free cyanide) since mid-2022 with most values as non-detects. This indicates that Ft Knox has maintained control of its systems for a sufficient period since mid-2022 for the auditor to consider Knox to be compliant.

Ft Knox has not caused cyanide concentrations from indirect discharges to rise above levels that protect aquatic life. Therefore, Ft Knox is not engaged in remedial activity.

**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

**Summarize the basis for this finding:**

Ft Knox has implemented measures to protect the beneficial uses of groundwater. Tanks, vessels, and columns at the mill are contained within concrete secondary containments to prevent seepage. The BCHL and WCHL are double-lined to prevent seepage and are equipped with LCRS and PCMS systems to collect seepage. Nine

interceptor wells around the TSF embankment maintain a cone of depression that prevents downgradient migration of seepage. Seepage is also collected in two ponds downstream of the TSF embankment for treatment at RO #2. Finally, Ft Knox treats tailings slurry either by dilution in the tails wash thickener or by destruction in the Inco circuit, thereby reducing the potential for seepage to affect groundwater quality. These measures are unchanged from previous audit cycles.

Ft Knox has monitored groundwater downgradient of cyanide facilities. The Ft Knox cyanide facilities have a potential seepage pathway along the pre-existing valleys downgradient towards the TSF embankment. Drinking water is the default designated use for groundwater in Alaska with a standard of 0.05 mg/L WAD cyanide. There are no actual points of groundwater use near the mine, but there are three point of compliance (POC) wells downgradient of the TSF. Ft Knox collects samples monthly and reports results quarterly and annually to regulators. Review of monitoring reports from the audit cycle showed that the WAD cyanide concentrations in groundwater were below the state standard.

Ft Knox does not have an underground mine and therefore does not use tailings for underground backfill.

Ft Knox has not caused cyanide concentrations to rise above levels protective of beneficial use, and therefore is not engaged in any remedial activity.

**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

**Summarize the basis for this finding:**

Ft Knox has constructed properly sized secondary containments for their mixing, storage, CIC columns, CIP/CIL columns, and other process tanks, columns, and vessels. Except for two changes and a clarification as described below, the secondary containment system achieved compliance in previous audit cycles.

The new mix building has been designed with secondary containment for an isotanker. A concrete pad slopes towards a central sump. The containment volume is 119% of the volume of an isotanker.

The two new detox tanks were built in secondary containment on ring beams on top of a solid and continuous concrete mat. The inside of the ring beams was filled with sand and gravel layers. A portion of the existing secondary containment wall for the CIP/CIL containment on either side of the two new detox tanks was demolished to provide flow-through capability to the adjacent larger CIP/CIL containment. The two new detox tanks are smaller than the now inactive existing detox tanks, and therefore the secondary containment calculations did not need updating.

The audit reports for the previous audit cycles were unclear on whether the CIP/CIL columns were constructed on ring beams. For this audit cycle, Ft Knox searched the records archive and found a 1995 as-built drawing that showed these columns were built on ring beams on top of a solid and continuous concrete mat foundation. The insides of the ring beams were filled with a sand layer on top of compacted soil. Each ring beam has a 6-inch diameter port through its side to allow for drainage into the secondary containment.

An upset occurred in the CIP/CIL circuits just before the site visit and slurry had accumulated in the secondary containment and the connected containment for the former detox tanks inside the tails thickener building. Although the capacity of these containments was reduced, the remaining volume is large and still sufficient to contain the volume of the largest column in the connected containments. Based on survey data from November 2024, calculations showed 152% excess capacity for the largest column in the containments.

Ft Knox does not have any cyanide-related pipes, tanks, columns, or vessels that are designed to discharge to the environment. The cyanide-related circuits all have sumps and dedicated pumps to return solutions to the process circuits. Ft Knox has nonetheless developed a procedure for management of spills outside of containment.

Ft Knox does not have any cyanide-related tanks, columns, or vessels without secondary containment.

Ft Knox has provided cyanide-related pipelines with spill prevention and/or containment measures. Except for one change as described below, the pipeline containment measures achieved compliance in the previous audit cycles. The new pipelines to and from the In-pit TSF branch off from the existing TSF pipelines at a valved tee several hundred feet to the south of the mill. From there the new pipelines run several hundred feet above-ground to where they descend into the pit. Spills from the segments of the pipeline outside of the pit would be contained by the TSF, while spills from the segments inside the pit would be topographically contained by the pit. Spill prevention measures have also been implemented for the pipelines to and from the heap leach pads. The pipes are equipped with flow meters and pressure sensors that will alarm at the Control Room if there is a 500 gpm rise in flow over one minute in the pregnant line or a 15 pounds per square inch fall in pressure over one minute on the barren line. If a line break occurs, then three sight tubes can be used to locate the reach with the break.

Ft Knox does not have any cyanide-related pipelines with an elevated risk to surface water.

As tertiary containment, the mill, heap leach pads, and all their pipelines are located topographically uphill from the TSF, which has more than enough capacity to contain any spills.

Ft Knox has constructed cyanide tanks and pipelines of materials compatible with cyanide and high pH conditions. Except for the new or modified facilities this audit cycle, the materials achieved compliance in the previous audit cycles. The piping in the new mix building, as well as the pipeline to the mixing and storage tanks in the mill, were constructed of carbon steel, stainless steel, and high-density polyethylene (HDPE). The two new detox tanks and their piping were constructed of carbon steel and the exterior of the tank was coated with epoxy sealant. The new pipelines between the mill and the In-pit TSF were constructed of HDPE. The auditor observed that materials in the cyanide facilities were compatible with cyanide and high pH.

**Standard of Practice 4.8:** **Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.**

☒ **in full compliance with**

**The operation is**

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

☐ not in compliance with

**Summarize the basis for this finding:**

The cyanide facilities at Ft Knox achieved compliance with this Standard of Practice during previous audit cycles, as stated in the Summary Audit Reports for 2007, 2011, 2015, 2018, and 2021. Ft Knox has implemented QA/QC programs for the new and modified cyanide facilities this audit cycle that addressed the appropriate construction elements with review by qualified individuals:

- **Expansion of the BCHL.** Construction of the Stages 2, 3, and 4 has been guided by a Construction Quality Assurance/Quality Control Manual. The 2020, 2021, and 2022 Construction Completion Reports (CCRs) contained as-built drawings, photo logs, and testing reports for earthwork and geosynthetics installation. All three CCRs and the as-built drawings were stamped by registered civil engineers in Alaska.

- **Two new cyanide detox tanks.** The 2023 turnover contains as-built drawings. QA/QC for tank bases and secondary containment contained concrete placement observations and testing, as well as welding records and welders' certifications for the field-erected tanks. The turnover package was signed by the contractor's representative and the mine's capital projects engineer.

- **New cyanide mix building.** The QA/QC records documented earthworks and concrete testing. The 2024 construction certification letter for the entire building was signed by a registered civil engineer in Alaska.

- **Raise to Pearl Creek Causeway between the North and South Ponds of the TSF.** The 2024 CCR contained as-built drawings, photo logs, and construction observations for foundation preparation and placement of a single layer of random fill. The CCR and as-built drawings were stamped by a registered civil engineer in Alaska.

- **In-pit TSF and pipelines.** Construction consisted of tailings and return pipelines, as well as installation of barge pumps and a booster station. The pipes were laid on the ground and earthworks, concrete, or other testing was inapplicable. The hydrotesting reports addressed proper HDPE materials, fusing, and water tightness. These reports were signed by the contractor supervisor and the QC inspector.

Ft Knox has retained QA/QC records for the cyanide facilities. For the newer facilities, QA/QC records are available electronically. For the older facilities, the records have been retained physically. The auditor observed the records storage area above the ball mills that contained racks of drawings, as well as binders of manuals and specifications, dating back to mine construction.

There were no new or modified cyanide facilities this audit cycle without QA/QC records and qualified review.

**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

**Summarize the basis for this finding:**

Ft Knox has developed a Monitoring Plan which was last updated in October of 2023. This plan covers monitoring of the mill, tailings, and heap leach process fluids; surface water and groundwater; and avian and terrestrial wildlife. Fish monitoring is covered under regulatory guidance.

The Monitoring Plan has been revised over the years by various qualified staff. Currently, the Environmental Superintendent oversees maintaining the Monitoring Plan. The Environmental Superintendent has a Bachelor's degree in Biological Sciences, a Master's degree in Reclamation Science, and a Doctorate in Mining, and as such is well-qualified for this purpose. Ft Knox uses an accredited external laboratory for analysis of free, WAD, and total cyanide.

Ft Knox has determined where and how samples are to be collected. Sampling locations are defined in two regulatory permits and shown on a figure in the Monitoring Plan. A Quality Assurance Project Plan (QAPP) and Field Procedures Manual specify sampling and analysis protocols. These documents include procedures for field activities, laboratory analysis, and data management. Field procedures address field documentation; sample handling, packing, and shipping; quality control sampling; field instrumentation and calibration; decontamination of sampling equipment; groundwater and surface water sampling; low-flow groundwater sampling; and RO system sampling. Cyanide species are specified as WAD and total cyanide. The laboratory procedures specify containerization, preservation, hold times, and detection limits. The data management procedures specify records tracking and retention, data validation, corrective actions, and reporting. Procedures for avian and terrestrial monitoring are also addressed in appendices to the Monitoring Plan.

Ft Knox has documented sampling conditions on groundwater and surface water field forms. Both field forms include weather conditions, field parameters, and the presence/absence of wildlife and/or anthropogenic influences. The auditor reviewed completed examples of these field forms, as well as chain-of-custody forms, from throughout the audit cycle to verify compliance.

Ft Knox has conducted monitoring at frequencies adequate to identify changes in groundwater and surface water quality in a timely manner. Groundwater sampling is conducted monthly and surface water sampling is conducted weekly. Wildlife monitoring is conducted by different departments at daily, weekly, and monthly frequencies.

# 9.0 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 **Standard of Practice 5.1**

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has developed a site-wide Reclamation and Closure Plan for regulatory compliance, as well as a Code-specific Cyanide Facilities Decommissioning Plan. This internal plan for Code compliance specifically addresses remaining reagent cyanide, decontamination of equipment, and heap leach draindown. Alternatives for managing remaining cyanide reagents include selling it to another certificated mine/industry or disposal. Decontamination will consist of flushing, power washing, neutralization (with sodium hypochlorite), and rinsing of mill, heap leach, and TSF equipment. The endpoint for decontamination is 0.5 mg/L WAD cyanide. Decontamination water will be disposed in the TSF. The plan also addresses draindown without rinsing for the BCHL and WCHL until WAD cyanide naturally degrades to less than 0.5 mg/L based on continued sampling. Draindown water will be disposed of in the pit lake. Ft Knox does not anticipate installation of measures for control or management of surface or groundwater for closure purposes.

Ft Knox has developed an implementation schedule for decommissioning cyanide facilities. Appendix A of Reclamation and Closure Plan includes a Gantt chart showing the overall schedule for mine closure and reclamation. Table 1 in the Cyanide Facilities Decommissioning Plan shows a 2-year schedule for decontamination and decommissioning activities within the overall mill demolition schedule.

Ft Knox has reviewed and updated its decommissioning and closure plans during this audit cycle. The Environmental Superintendent stated that the Reclamation and Closure Plan must be updated and resubmitted to the Alaska Department of Natural Resources every five years, meaning that the existing 2020 plan is due for revision in 2025. The Cyanide Facilities Decommissioning Plan was reviewed and updated in 2024 in preparation for the recertification audit.

**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

**Summarize the basis for this finding:**

Ft Knox has estimated the costs to decommission its cyanide facilities. Kinross estimates the Asset Retirement Obligation (ARO) for mine closure and reclamation annually for each of its operations using the Standardized Reclamation Cost Estimator (SRCE) model. The 2023 SRCE model for Ft Knox was prepared by a consultant and is based on third-party unit costs. The model uses the 2023 Alaska North rates developed using a combination of Alaska and Nevada Equipment, Labor (April 2023 Pamphlet 600) North of 63 degrees, and Materials (2022-2023). The Nevada equipment rates were escalated 15% from Nevada to Alaska for equipment not found in Alaska. Inflation of 6.4% (for year 2022) was based on US Department of Labor and Statistics Consumer Price Index for January 2022 to January 2023.

The SRCE model embeds cyanide facility decommissioning activities within the set of broader closure activities, and for that reason, Ft Knox extracted the cyanide decommissioning costs into a stand-alone estimate in the Cyanide Facilities Decommissioning Plan. Table 2 in the 2024 version of the plan details the costs for labor, operating supplies, maintenance supplies, and supervision for decommissioning the cyanide facilities.

Ft Knox has reviewed and updated the decommissioning cost estimate during this audit cycle. The cyanide decommissioning cost in the 2024 Cyanide Facilities Decommissioning Plan was approximately 140% times the amount in the 2020 version of the plan.

Ft Knox has established a financial assurance mechanism approved by the applicable jurisdiction. In 2023, the Bank of Nova Scotia issued an Irrevocable Standby Letter of Credit to the Alaska Department of Natural Resources on behalf of Ft Knox. The overall amount of the bond for mine closure is well in excess of the amount estimated for decommissioning the cyanide facilities.

# 10.0 PRINCIPLE 6 – WORKER SAFETY

## Protect workers' health and safety from exposure to cyanide.

**Standard of Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminated, reduce, and control them.**

☒ **in full compliance with**

**The operation is**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has developed a large set of SOPs, OPGs, and HS that describe the standard practices necessary for safe and environmentally sound management of the cyanide facilities. These documents address specific measures for compliance with the Code, including water management, inspections, and maintenance. Each procedure starts with a worker sign-off section for training purposes. The different types of procedures have slightly varying content that generally includes purpose and scope; training requirements; PPE, tools, and specialized PPE; physical, chemical, and environmental hazards; responsibilities; procedural steps; inspections; among others. Ft Knox has reviewed and updated, if necessary, these documents during the audit cycle with most being recently reviewed in 2024.

The Ft Knox procedures require the use of PPE and pre-work inspections. A specific procedure addresses general safety and PPE requirements, but individual procedures specify standard PPE and specialized PPE on the first page of each procedure. PPE for cyanide-related tasks generally consists of safety glasses, steel-toed/rubber boots, high visibility clothing, hard hat, rubber gloves, industrial rain gear, respirator, and in some cases, a face shield. Portable HCN monitors are used as backups if an area is in question, as well as for specific tasks such as confined space entry. A procedure requires pre-use inspections of tools, machines, vehicles, and devices. Other procedures require pre-work inspections for cyanide mixing, confined space entry, and pipeline breaking. Work orders issued by the maintenance software also include requirements for PPE and pre-work inspections. The auditor observed operators wearing the appropriate PPE, especially during the isotanker mixing event. The auditor also observed examples of pre-work inspections as mixing checklists and line entry permits

Ft Knox has solicited and considered worker input in developing and revising procedures via their Critical Risk Reduction program. Ft Knox provided five examples of worker-proposed changes that were adopted during this audit cycle to reduce cyanide-related risks. Task observations also provide an opportunity for worker input, as evidenced by examples of Cyanide Task Observation forms from the audit cycle. Crews occasionally review procedures and provide feedback.

**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

**Summarize the basis for this finding:**

Ft Knox has established pH targets to limit the generation of HCN during mixing and production activities. Lime is added from a silo to the leach ore in the haul trucks and from a separate silo to the ore on the conveyor belt to the SAG mill. As defined in written procedures, the pH for supersack mixing and isotanker mixing is 12 and the minimum pH in other process solutions is 10.2. Screen shots of the DCS in the mill control room during the site visit showed actual pHs of 11.85 in Leach 1, 10.6 in CIC #1, and 10.6 in CIC #2. Time series graphs of pH at the pre-leach thickener, CIC #1, and CIC #2 showed pHs from approximately 10.5 to 11 throughout the audit cycle.

Ft Knox has identified areas and activities where workers may be exposed to HCN or cyanide dust. The mill circuits have been identified as areas with the potential for HCN exposure based on process knowledge and experience. Ft Knox occasionally checks these areas with portable HCN monitors. Ft Knox has also identified activities with the potential for HCN, such as cyanide mixing, confined space entry, and cyanide pipeline entry, and requires specialized PPE and pre-work inspections when performing these activities.

Ft Knox has used fixed and portable HCN monitors in process areas and for activities involving cyanide. Ft Knox has installed 21 fixed HCN monitors at appropriate locations in the mill. Portable HCN monitors are available at the mill control room. As prescribed in a written procedure, there are two alarm levels with associated actions as follows:

- 4.7 parts per million (ppm) HCN: amber flashing light = contact supervisor, increase ventilation (e.g., open doors), use handheld HCN monitor, and limit exposure time to a time-weighted average of 8 consecutive hours
- 10.0 ppm: red flashing light = evacuate area immediately with return only upon supervisor's permission

The auditor either saw readings on these fixed monitors or observed their readings on the screens in the mill control room to verify their functionality. The auditor observed laminated signs at the fixed HCN monitors describing the alarm levels, visual alarm colors, and associated actions. The auditor also observed the docking station with cannisters for calibration gasses. Finally, the auditor interviewed a control room operator, a mill operator, a mill contractor, and a heap leach pad mechanic and found their knowledge of alarm levels and associated actions to be acceptable.

Ft Knox has maintained, tested, and calibrated the fixed and portable HCN monitors throughout the audit cycle. Spreadsheets from 2021 to 2024 showed monthly calibrations for the fixed HCN monitors with the actual calibration data. The portable monitors are automatically bump tested and calibrated before each use by the docking station.

Ft Knox has installed warning signs that advise workers of the presence of cyanide and that smoking, open flames, eating, and drinking are prohibited. Signage is most prominent signage in areas with high-strength cyanide, such as the entries to the cyanide mix building, the cyanide loading dock for storing cyanide supersacks, and the cyanide mix tank and storage. Signage in other areas of the mill and the heap leach pads is less prominent, in large part because signs do not last long in the cold weather. Therefore, Ft Knox has relied on the annual Cyanide Awareness training to communicate the prohibitions on smoking, open flames, eating, and drinking. Interviews with operators showed good knowledge of these prohibitions and the auditor did not see any food wrappers, soda bottles, etc. as trash in the cyanide facilities.

Ft Knox has dyed high-strength solution red of clear identification. Draslovka adds red dye to the cyanide supersacks that were used early in the audit cycle. Draslovka now adds red dye to the isotankers that have been received since August 2024. The auditor observed that the high-strength solution flowing or dripping from the pipes at the addition points was clearly identifiable by its red to pink color.

Ft Knox has installed showers/eyewashes and fire extinguishers at multiple locations throughout the mill. The auditor randomly checked shower/eyewash stations to confirm functionality and that the pressure in the eyewashes was low. Shower and eyewash stations have been inspected each shift during the audit cycle, as evidenced by completed inspection forms. The auditor randomly checked the fire extinguishers to confirm they were dry powder rather than carbon dioxide, and that they were full and in good condition. Inspection tags on those extinguishers sampled showed current monthly visual inspections and annual testing by a vendor.

Ft Knox has labelled tanks and piping to alert workers of their content and the direction of flow in piping. The high-strength tanks are labelled as containing cyanide, but Ft Knox relies on the annual Cyanide Awareness training to alert workers to the presence of cyanide in other vessels and columns. Color coding prescribed as black text/arrows on a yellow or orange background for cyanide is prescribed in a written procedure for piping. The auditor observed pipes in the mill to be adequately labelled as containing cyanide with flow direction arrows.

Ft Knox has also labelled pipelines to and from the mill in a reasonable manner given the winter weather and the cyanide concentrations. The pipes to and from the BCHL and WCHL are largely buried or potentially covered in snow such that signage is infeasible, but Ft Knox has placed appropriate signage on the pipes in the valve enclosures that keep valves from freezing. The tailings and return pipelines are unlabeled except at the key location where they split to the TSF or the In-pit TSF, which the auditor accepted given that winter weather is hard on signage and the cyanide concentrations are low.

Ft Knox has made the Draslovka Cyanide Safety Data Sheet (SDS) available electronically and as hardcopy in key locations. The SDS is available on every computer in the mill via the online SDS library and in red binders in the cyanide mix building, mill control room, and mix hopper. The SDSs are in English, the language of the workforce.

Ft Knox has developed a procedure for exposure incident investigation and software for tracking and archiving investigation reports. No cyanide-related incidents occurred this audit cycle, but an investigation report for a flocculant spill in 2023 evidenced that the investigation system is functioning.

**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

**Summarize the basis for this finding:**

Ft Knox has oxygen, resuscitators, and antidotes readily available to respond to cyanide exposures. Medical oxygen is available in the First Aid Room, the Emergency Response Vehicle (ERV), and 12 locations in the mill. The auditor checked some of these cylinders to verify correct oxygen levels and presence of the mask and hose. A manual resuscitator is kept in the ERV. Two Cyanokits are kept in the First Air Room and a third Cyanokit is in the ERV.

Ft Knox has means of communication for use in cyanide emergencies. Operators carry radios, but the mill has a GAITRONICS (a brand name) public address system as a source of communication for use in emergencies and evacuations.

Ft Knox has inspected it first aid equipment regularly in accordance with a written procedure to verify it is functional. Ft Knox has a First Aid Room and a Fire Tent, as well as an ERV, a fire truck, and a mine rescue trailer with a dedicated pickup truck. These vehicles are inspected daily, as evidenced by examples of completed checklists during the audit cycle. The auditor confirmed functionality of lights, horn, siren, and radio, and that the gas tanks were full. The daily inspection of the First Aid Room also includes a narcotics inventory, which includes checking the Cyanokits. The auditor verified that the three Cyanokits were within their expiration dates and stored at room temperature in accordance with the manufacturer's recommendations. Self-contained breathing apparatus (SCBA) units are kept in the Fire Tent and on the fire truck. The First Aid Room and Fire Tent are inspected daily, as evidenced by examples of completed checklists during the audit cycle. The emergency medical oxygen cylinders and escape respirators in the mill are inspected monthly, as evidenced by an example checklist from 2024 when these items were installed in the mill.

Ft Knox has developed two procedures to respond to cyanide exposures. Cyanide Safety describes how to respond to exposures via skin contact, eye contact, inhalation, and ingestion. Cyanide Decontamination describes how to safely decontaminate a person exposed to cyanide.

Ft Knox has its own onsite capability to respond to cyanide exposures. The Emergency Response Team (ERT) has four teams of six members each plus four floaters to provide full-time coverage. ERT members are trained to administer medical oxygen, as are all operators. The ERT has two paramedics, one Emergency Medical Technician (EMT) 3, and four EMT 1s. The paramedics and EMT 3 are authorized to administer the Cyanokits. Onsite coverage for antidotes is available for three of four shifts with on-call availability during the fourth shift. Alaska's online certification system verified the paramedics and EMT 3 are trained and authorized to administer injections.

Ft Knox has developed a written procedure to transport cyanide patients to the public hospital in Fairbanks. Patients will be transported to the access road overpass for transfer to the Steese Valley Volunteer Fire Department ambulance. The travel time to the Fairbanks Memorial Hospital is approximately 45 minutes.

Ft Knox has informed the Fairbanks Memorial Hospital of the possibility that they may have to treat patients exposed to cyanide in a letter in 2024. The hospital has their own antidotes. Ft Knox is confident that the hospital has adequate, qualified staff, equipment, and expertise to respond to cyanide exposures.

# 11.0 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

**Summarize the basis for this finding:**

Ft Knox has developed two plans to address potential accidental releases of cyanide and cyanide exposure incidents:

- **Emergency Response Plan (ERP).** This plan addresses mine-wide emergencies of various types and contains preparedness policies, emergency response procedures, risk assessment, risk control, and emergency contact information
- **Emergency Action Plan (EAP).** This plan addresses emergencies with the TSF, WCHL, BCHL, and Freshwater Reservoir and contains notifications, emergency detection-evaluation-classification, responsibilities, preparedness, and inundation

The Ft Knox ERP, EAP, procedures, and manuals collectively address the scenarios and emergencies required by the Code. The ERP addresses catastrophic releases of HCN; incidents during onsite transport; spills or briquettes during unloading or mixing; fires and explosions; pipeline leakage, rupture, and blockage; power outages and pump failures. A standard procedure addresses startup and shut down of the cyanide destruct circuit. A management plan and operating manual address issues with RO plants. The EAP specifically includes failure scenarios due to extreme runoff, seepage, earthquakes, slumping, avalanche, overtopping, and settlement for the TSF, WCHL, BCHL and Freshwater Reservoir. The EAP also addresses downstream flood routing and inundation.

The ERP states that Ft Knox will respond to onsite cyanide incidents and that Draslovka will be called to respond to offsite cyanide incidents, where offsite is defined as outside of the Ft Knox security gate. Draslovka and their transporter, Alaska West Express, by virtue of their certifications under the Code have considered the transportation routes, physical and chemical form of cyanide, transport methods (including truck, barge, and rail), and the type of transport vehicle and container.

The ERP addresses emergency evacuation procedures and muster points, as does the annual refresher training. There are no nearby communities that could be affected under any cyanide emergency scenarios. The ERP and the cyanide safety procedure address responding to cyanide exposures. Various sections in the ERP address controlling releases at their source in the event of overtopping, seepage, and other scenarios. The EAP addresses event detection and response escalation through three levels, with the first two levels focusing on controlling the emergencies at the source (i.e., TSF, WCHL, BCHL) before failure is imminent or has occurred. The ERP and the procedures for cyanide safety and spill reporting/sampling also address containment, assessment, mitigation, and release prevention. The EAP also addresses these topics with respect to the TSF, BCHL, and WCHL.

The ERP and EAP address specific response actions, such as evacuation. A section in the ERP addresses site evacuation, as does a presentation for the annual refresher training. There are no nearby communities that could be affected under by onsite cyanide emergencies.

The ERP and a procedure address response to cyanide exposures. Measures are described for eye contact, ingestion, inhalation, and skin contact for conscious and unconscious victims. Measures include extraction, decontamination, use of PPE, administering oxygen, use of a resuscitator, and application of antidotes by authorized staff.

The ERP, and especially the EAP, address controlling releases at their sources. Various sections in the ERP address controlling releases at their source in the event of overtopping, seepage, and other scenarios. The EAP addresses event detection and response escalation through three levels, with the first two levels focusing on controlling the emergencies at the source before failure is imminent or has occurred.

The ERP, EAP, and procedures address containment, assessment, mitigation, and prevention of future releases. A section in the ERP address spill control and cleanup. Two other procedures address containment, assessment, mitigation and release prevention, as does the EAP for the TSF, BCHL, WCHL, and Freshwater Reservoir.

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

☒ **in full compliance with**

**The operation is**

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

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has involved its workforce and to the degree relevant, external stakeholders and communities. The workforce has been involved in emergency planning through ERT training and mock drills. There are no communities near the mine. Nonetheless, Ft Knox has shared the EAP with relevant agencies and engages with regional communities via the External Affairs Department.

Ft Knox has not identified any external stakeholders with onsite roles during a cyanide emergency. However, the local volunteer fire department has a role in offsite transport of patients, but their role falls within the normal duties of ambulance services. Ft Knox has identified external agencies that would be involved in response to a TSF dam break, although their involvement would largely take place offsite. A tabletop exercise was held in 2024 with local, state, and federal agencies with jurisdiction for dam break emergencies to obtain their input and keep the EAP current.

**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

**Summarize the basis for this finding:**

The ERP contains the following cyanide-related elements:

- Appendix A lists mine rescue coordinators at the manager, superintendent, and H&S supervisor levels with authority to commit resources and implement the ERP
- Appendix A lists four teams of 5 to 6 members each to provide coverage on all shifts
- Appendix H summarizes ERT training requirements and the topics to be covered in twice monthly training sessions
- Section 2.1 contains callout, assembly, and mobilization procedures for the ERT while Appendix A lists 24-hour contact information for mine rescue coordinators and ERT members
- Appendices I and J contains lists of PPE, equipment, and supplies for emergency response
- Section 2.2 describes the role of the Fairbanks Memorial Hospital

The Health and Safety Mine Rescue Guidelines contain three procedures relevant to responsibilities and duties of the ERT and its coordinators: mine rescue eligibility, general orders for ERT responders, and ERV operations. These guidelines also include a procedure for inspection and care of emergency response equipment to ensure its availability when needed.

Ft Knox has not identified any external entities with onsite roles during a cyanide emergency. However, external entities have offsite roles. The local volunteer fire department may assist with transporting patients to the hospital in Fairbanks, but the handoff would take place offsite and transport falls within the normal duties of ambulance services. Because a dam break would largely be an offsite emergency, Ft Knox conducted a tabletop drill in 2024 of the EAP for the TSF, HLPs, and Freshwater Reservoir with local, state, and federal agencies.

**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

**Summarize the basis for this finding:**

Both the ERP and EAP include notification procedures and contact information. Diagrams in the ERP show procedures and tables contain contact information for the ERT, corporate management, Ft Knox management, government agencies, the local hospital, and the local volunteer fire department. The ERP also contains procedures and contact information for communication with the media, such as radio, television, newspapers, and periodicals. Flow charts in the EAP show procedures and tables contain contact information for internal communications, government agencies, the EOR, communities, suppliers, and contractors. The EAP also contains procedures for communication with the media. There are no communities near the mine that could be potentially affected by a cyanide emergency. Nonetheless, the ERP includes contact information for regional towns and boroughs, air force bases, universities, and community organizations.

The ERP contains a procedure for notifying the International Cyanide Management Institute (ICMI) of significant incidents. It lists the seven types of significant incidents and includes the ICMI's email address and phone number. Ft Knox notified the ICMI via email in 2022 of a fish incident downstream of the mine's permitted effluent outfall to Fish Creek, which was considered a significant cyanide incident under Item (f) in the ICMI's list of significant incidents.

**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

**Summarize the basis for this finding:**

The ERP includes a section on spill control and cleanup that addresses recovery of solid and liquid cyanide using physical methods. Neutralization is not included in the plan. Contaminated soil will be excavated to the total depth of penetration with samples collected for analysis of WAD cyanide for comparison to the state cleanup level. The number and spacing of soil samples is specified. Decontamination of soils or other contaminated media is not included in the plan. Contaminated soil is to be incorporated into the process or disposed of in the TSF.

Provision of an alternate water supply is inapplicable because Ft Knox supplies bottled water to its workers and there are no public water supply intakes or wells in the vicinity of the mine.

The ERP prohibits the use sodium hypochlorite, ferrous sulfate, and hydrogen peroxide to treat cyanide spills whether they are surface water or soil.

Ft Knox has addressed environmental monitoring after a cyanide release. The ERP and associated procedures summarize environmental monitoring, including how to collect liquid samples and soil samples, the number and spacing of soil samples, the cyanide species (WAD cyanide), and the analytical methods.

**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

**Summarize the basis for this finding:**

Ft Knox has regularly reviewed its emergency plans. The ERP states that Ft Knox will update the ERP as necessary after cyanide-related incidents and mock drills. The revision history sheet at the front of the ERP shows 27 reviews since the plan's inception in 2007 with the most recent version dated November 2024. The EAP states that Ft Knox will review this plan annually or when there are major changes in operating practices or if there are significant changes to the facilities. The revision summary table shows 10 reviews since the plan's inception in 2011 with the most recent version dated August 2024.

Ft Knox has conducted cyanide emergency drills periodically. The ERP states that Ft Knox will test and review the adequacy of the ERP with drills annually. Ft Knox conducted three field drills with scenarios for both exposures and releases during the audit cycle:

- 2022 Scenario: Release of HCN in detox area with one worker exposed via inhalation

- 2023 Scenario: Release of cyanide briquettes from broken bag with contact with water during a mixing event with five workers exposed via dermal contact and/or physically injured
- 2024 Scenario: Spray of high-strength cyanide solution in new mix building with two workers exposed via dermal contact

The drills tested the entire response process from notification to closeout. Response times from notification to administration of an antidote were documented. Drills were evaluated and corrective actions were completed in a timely manner. The Ft Knox staff with roles in emergency response participated in the drills. Ft Knox has not identified any external entities with onsite roles and therefore none were invited or present.

The ERP includes a provision to review and update the plan annually, after cyanide mock drills, and after actual cyanide emergencies. There were three examples in the ERP revision history of reviews and updates after drills and incidents. Although none were from this audit cycle, they are evidence that the provision has been implemented. No cyanide-related emergencies occurred during the audit period that would have triggered a review of the ERP.

# 12.0 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.**

☒ **in full compliance with**

**The operation is** ☐ in substantial compliance with **Standard of Practice 8.1**

☐ not in compliance with

**Summarize the basis for this finding:**

Ft Knox has trained workers and contractors who may encounter cyanide in recognizing cyanide hazards during new hire training and annual training required by the Mine Safety and Health Administration (MSHA). The presentation includes cyanide-related topics such as the forms of cyanide, pH control, exposure effects and symptoms, first aid, PPE, HCN monitoring, alarms, and actions. Specific slides show how to recognize solid cyanide as white briquettes and high-strength cyanide solution by its red color. Ft Knox refreshes the hazard recognition training during the annual MSHA refresher period each October. The auditor observed examples of MSHA 5000-23 forms from throughout the audit cycle to verify compliance. The auditor also interviewed a control room operator, a mill operator, a mill contractor, and a heap leach pad mechanic to verify their knowledge of cyanide hazards.

**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

**Summarize the basis for this finding:**

Ft Knox has provided task training to workers to control the cyanide-related risks to health, safety, and the environment. Task training begins with an Employee Orientation handout, followed by training on up to 18 procedures within the first two weeks of employment, and other procedures thereafter. Ft Knox also requires contractors to provide task training to their employees using their procedures.

Ft Knox has identified task-specific cyanide elements in the operating procedures that are used as training materials. Training elements are also contained in the circuit training checklists and job descriptions. Collectively, these training materials address PPE, tools, physical/chemical/environmental hazards, legal requirements, responsibilities, procedural steps, inspections, and required training.

Ft Knox has used dedicated trainers for task training. The two trainers have 14 and 12 years experience at the mill, respectively. The auditor interviewed both trainers and judged them to be knowledgeable and qualified.

Ft Knox has trained staff prior to working with cyanide. The Ore Processing Trainer stated that new contractors and staff review and sign-off on up to 18 procedures within two weeks of hiring.

Ft Knox has provided refresher task training to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. Refresher training is conducted at safety meetings, especially when there are changes to procedures, and in conjunction with the annual MSHA refreshers. As an example of retraining when procedures change, in the fall of 2024 the Mill Operations Trainer stated that mixing operators were retrained on the change from supersack mixing to isotanker mixing.

Ft Knox has evaluated worker competency by observation using circuit-specific checklists and task observation forms. The human resources progression from trainee through utility operator, which takes 4 to 5 years, is also evidence of competency.

Ft Knox has retained task training records for current and past employees throughout their employment in digital and paper form. The records include the names and signatures of the trainee and trainer, the date of training, and the training topic. The circuit-specific checklists and human resources progression indicate an understanding of the training materials.

The auditor reviewed representative task training records for mill workers and contractors to verify compliance throughout the audit cycle. The auditor also interviewed a control room operator, a mill operator, a mill contractor, and a heap leach pad mechanic to verify they had received task training.

**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

**Summarize the basis for this finding:**

Ft Knox has trained its operators in the procedures to be followed if cyanide is released. Training materials include the procedures for Cyanide Safety that addresses cyanide health hazards, poisoning symptoms, first aid measures, accidental release measures, firefighting measures, and reactivity considerations. Ft Knox has structured its response to cyanide emergencies and trained its staff as follows:

- Exposures:
  - All operators can initiate a MayDay, extract and decontaminate an exposed worker (if safe to do so), and administer medical oxygen.
  - The ERT members can further administer medical oxygen, while only the paramedics and Level 3 EMTs can administer the Cyanokit antidote and transport the exposed person to a higher level of care.
- Releases:
  - All operators can report a spill (or initiate a MayDay if warranted by the size of the spill).
  - Operators and environmental staff barricade the spill area and clean up the spill.
  - Environmental staff collect samples for the internal and/or external laboratories, and coordinate with regulators.

Ft Knox has trained its ERT in the procedures in the ERP and the procedures, including the use of response equipment. ERT-specific topics include emergency vehicle operations, cardiopulmonary resuscitation,

Ambulance inventory/scenarios, bunker gear (includes SCBAs), mass casualty drills (includes cyanide), confined space entry and rescue, differential diagnosis, trauma technician, among others.

Ft Knox has not designated any onsite roles for external responders and therefore has not familiarized them with the ERP. External responders would act within the scope of their normal duties in offsite roles, if needed.

Ft Knox has regularly provided training for response to cyanide exposures and releases. The Cyanide Safety procedure is refreshed annually. The ERT is trained according to an annual schedule that contains the same topics from year to year.

Ft Knox has retained training records for cyanide emergency response training. Signed Cyanide Safety procedures from throughout the audit cycle include the names and signatures of trainee, trainer, and supervisor, and the date of training. The Health and Safety Supervisor provided ERT training sign-in sheets and training attendance spreadsheets from throughout the audit cycle showing the signatures of the trainees and trainers, the date of training, and the topics covered. Competency is assessed by interview and observation. Based on auditor interviews with a mine rescue coordinator, a control room operator (also an ERT member), a mill operator, a mill contractor, and a heap leach pad mechanic, the Ft Knox workers are well versed in cyanide emergency response.

# 13.0 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

**Summarize the basis for this finding:**

Ft Knox has provided contact information on multiple social media sites, digital newspapers, and member guides for regional associations so that the public may engage with the External Affairs Department. Other means of engagement include annual public meetings, an Annual Activity Report, a Community Advisory Committee with quarterly meetings, and mine tours. The annual Kinross Sustainability Reports also contain information on cyanide management for the public.

Ft Knox has also developed a mechanism to obtain expressions of support or complaints. Complaints are classified according to a written procedure and the number of expressions of support or complaints are listed in the Annual Activity Reports. The External Affairs Supervisor stated that there were no cyanide-related complaints during the audit cycle.

**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

**Summarize the basis for this finding:**

Ft Knox has developed written descriptions of cyanide activities and made them available to the public. The use and management of cyanide are summarized in annual public meetings and the Annual Activity Reports, available to the public through the Alaska Department of Environmental Conservation. Other written and/or visual descriptions available to the public include a brochure that mentions the Cyanide Code, a Fact Sheet for Tours, and a coloring book for children.

The US Census Bureau's Quick Facts states that 94.7% of the population in Fairbanks are high school graduates or higher (as of most recent data in 2022). Although this is a high degree of literacy, Ft Knox has nonetheless developed a video to explain mine operations in verbal form.

Ft Knox has several mechanisms for periodic public reporting of confirmed cyanide exposures or releases. For exposures, public reporting would occur via MSHA incident reports or State of Alaska reports. Spill information would be made available to the public via reporting to the ADEC and/or to the US Environmental Protection Agency (if the reportable quantity for cyanide was exceeded). In the case of large incidents, whether exposures

or spills, information would be made public by the Public Relations Coordinator. Kinross would disclose exposures or spills at the mine-specific level in their annual sustainability reports.

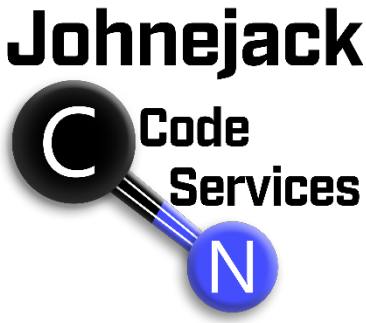
Ft Knox has not experienced any cyanide exposures resulting in hospitalization or fatalities this audit cycle. Kinross would disclose such incidents at the mine-specific level in their annual sustainability reports, as shown by the discussion of the exposure of a driver during a cyanide offload at Round Mountain in the 2022 Annual Sustainability Report.

Ft Knox has not experienced any cyanide releases off the mine site requiring response or remediation this audit cycle. If they occurred, such incidents would be made available to the public via the annual Spill Prevention and Response (SPAR) reports issued by the ADEC and at the mine level in the annual Kinross Sustainability Reports.

Ft Knox has experienced one cyanide release on or off the mine site resulting in significant adverse effects to health or the environment. Five fish died in the Upper Wetlands in April 2022 because of issues with the effluent from RO Plant #3. The fish mortality was investigated and reported to the ADEC and the ADFG, as evidenced by official correspondence and quarterly monitoring reports available to the public in state records. Ft Knox reported this incident to the ICMI via email in July 2022. The Environmental Director also stated this incident was voluntarily disclosed to Trout Unlimited, a non-governmental organization.

Ft Knox has experienced three cyanide-related spills this audit cycle with information available to the public in the annual ADEC SPAR reports for 2021, 2022, and 2023 available at https://dec.alaska.gov/spar/reports/. A 2022 release of leach solution out of containment occurred at the BCHL. Another release of cyanide solution to land due to equipment failure occurred in 2022. A 2023 release of cyanide solution at the WCHL was reported to the ADEC and closed out by the ADEC in early 2024 but was not included in the 2024 SPAR report because the spill was largely contained within the liner, posed minimal environmental risk, and had no impact on waterways.

Ft Knox has not experienced any releases the exceeded the applicable limits for cyanide this audit cycle. If they occurred, such incidents would be made available to the public via the Annual Water Quality Monitoring Summary Reports required under the Alaska Pollutant Discharge Elimination System Permit and/or the Quarterly Waste Management Permit Monitoring Reports required under the Waste Management Permit.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