

SUMMARY AUDIT REPORT

for the November 2015
International Cyanide Management Code Recertification Audit



Prepared for:
Kinross Gold Corporation
Kettle River Operations

FINAL
April 22, 2016



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SUMMARY AUDIT REPORT

Name of Mine: Kettle River Operations

Name of Mine Owner: Kinross Gold Corporation

Name of Mine Operator: Kinross Gold Corporation, Kettle River Operations

Name of Responsible Manager: Mark Ioli, General Manager

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Location detail and description of operation:

Echo Bay Mineral's Kettle River Operations (KRO) is a wholly owned subsidiary of Kinross Gold Corporation, and is located near the Canadian border in north-eastern Washington State. The KRO mill, mineral extraction plant, and tailings management facility were previously owned by Echo Bay Mining Company and, in 2003, were purchased by Kinross. The mill was operated by Kinross from late 2003 to 2006, when it was temporarily shut down. In 2006, Kinross purchased the Buckhorn gold deposit, approximately 76 kilometers, by road, from the KRO mill. The mill was refurbished, and gold production resumed in October 2008. The mill is currently processing ore from the Buckhorn deposit and, on occasion, processes ore from other mine operators. The mill was offline during the audit due to a scheduled maintenance outage.

Personnel contacted during the audit included:

- Mark Ioli – General Manager
- Gina Myers – Environmental Manager
- Kyle Hawkins – Environmental Engineer
- Cortney Gill – Mill Manager
- Bob Clough – Lead Mill Operator
- Sharon Smith – Purchasing Agent
- Gail Toso – Warehouse Supervisor

- Dave Kesterson – Supply Chain Superintendent
- Falcon Price – Operations Manager
- Susan Byington – Safety Clerk
- Deana Zakar – Community/Government Relations Specialist
- Jon Jensen – Mill Maintenance Supervisor
- Devin Harbke – Environmental Engineer

SUMMARY AUDIT REPORT
Auditors' Finding

The operation is: ■ in full compliance
 in substantial compliance
 not in compliance with Standard of Practice 1.1

with the *International Cyanide Management Code*.

Over the last three years KRO has experienced no significant incidents involving the management or routine use of cyanide

Audit Company: Ramboll Environ
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Audit Team Leader: Christine Anastos (canastos@ramboll.com)

Names of Other Auditors: Adrian Juarez (adrianjuarez@cta-consultoria.com)

Date(s) of Audit: November 17-19, 2015

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the *International Cyanide Management Institute* for Code Verification Auditors. I attest that this Detailed Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the *International Cyanide Management Code Verification Protocol for Gold Mine Operations and Guidance for Recertification Audits* using standard and accepted practices for health, safety and environmental audits.

Kettle River Operations
Name of Mine


Signature of Lead Auditor

April 22, 2016
Date

SUMMARY AUDIT REPORT

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

Standard of Practice

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

The operation is: in full compliance
 in substantial compliance
 not in compliance with Standard of Practice 1.1

Discuss the basis for this Finding/Deficiencies Identified:

Kettle River Operations (KRO) had a Master Services Agreement (MSA), Sodium Cyanide Contract, dated January 1, 2008, between E. I. du Pont de Nemours and Company and subsidiaries of Kinross Gold Corporation that was in effect through December 31, 2012. This was followed by "Contract Sodium Cyanide," between Echo Bay Minerals Company, Fairbanks Gold Mining, Inc. and E. I. du Pont de Nemours and Company, dated January 1, 2013. KRO issues individual Purchase Orders (POs) under the governing MSA.

As noted in the 2012 recertification audit, standard practice is to invoke the International Cyanide Management Code (ICMC) compliance requirements clause from the MSA as a clause on each PO. DuPont's Memphis, TN production facility continues to be certified to the ICMC, as noted on the ICMI website (<http://www.cyanidecode.org/signatory-company/ei-duPont-de-nemours>). It is noted that in the years since the 2012 recertification audit, DuPont created a wholly owned subsidiary for its cyanide business, Chemours FC-LLC; the new name is reflected in the certification status record for DuPont on the ICMCI website.

Cyanide has not been purchased from any other sources since the 2012 recertification audit. KRO has maintained a "Procedure for Obtaining and Transporting Cyanide Non-ICMI Certified Cyanide" that describes the specific actions to be taken in the event an alternate and potentially non-certified supply chain must be used. The procedure requires completion of a documented "good faith" attempt to locate a fully certified alternate supply chain, as well as inclusion of specific contractual requirements for ICMC compliance in the PO or contract, where certified sources are determined to be available. The only two individuals at KRO who would make arrangements to obtain cyanide from an alternate supplier are versed in the requirements of the procedure.

Kettle River Operations
Name of Mine

April 22, 2016
Date

2. TRANSPORTATION Protect communities and the environment during cyanide transport.

Standards of Practice

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

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

Discuss the basis for the Finding/Deficiencies Identified:

The MSA described in the 2012 recertification audit is still in effect, with copies maintained on file in purchasing. Standard contractual language assigns responsibilities for transportation to DuPont, less KRO's unloading responsibilities.

The DuPont (Chemours) supply chain was described as the following:

- bulk cyanide briquettes are loaded into railcars at DuPont's Memphis, TN production facility;
- Union Pacific Railroad transports the railcars from the transfer yard to DuPont's Carlin, NV terminal;
- at the terminal, cyanide is transferred to heavy-gauge steel DuPont "Flo-Bin" delivery containers; and,
- Flo-Bins are loaded onto flatbed trailers and transported to KRO by Sentinel Transportation currently certified to the ICMC.

There has been no change in the aforementioned supply chain since the 2012 recertification audit.

2.2 Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.

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

Discuss the basis for the Finding/Deficiencies Identified:

There have been no changes to the cyanide supply chain since the 2012 recertification audit. The MSA clearly assigns DuPont (Chemours) responsibilities for maintaining a fully certified supply chain and delivery to the KRO mill site. The only DuPont (Chemours) carrier used since 2012 has been Sentinel, who is separately certified. A review of the ICMI website indicated that KRO's regular transporters over the last three years (i.e., Union Pacific Railroad and Sentinel) are currently certified to the ICMC. All truck deliveries of DuPont (Chemours) cyanide originate at their terminal in Carlin, NV. Review of the ICMI website confirms that the DuPont (Chemours) US railway supply chain, Union Pacific Railroad, and regular truck transporter, Sentinel, are currently certified to the ICMC.

3. HANDLING AND STORAGE Protect workers and the environment during cyanide handling and storage.

Standards of Practice

3.1 Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices and quality control and quality assurance procedures, spill prevention and spill containment measures.

The operation is: ■ in full compliance
 in substantial compliance
 not in compliance with Standard of Practice 3.1

Discuss the basis for this Finding/Deficiencies Identified:

There has been no substantial change to the mixing and storage facility since the 2012 certification audit. The Morrison-Maerlie, Inc. (Morrison-Maerlie) independent engineering report that was the basis for the initial full compliance assessment remains on file. KRO developed a "Cyanco Cyanide Mix" SOP to specifically address the mixing of cyanide in alternate delivery form of supersacks. However, all cyanide delivered since the 2012 recertification audit has been in Flo-Bins. The unloading and storage area is identical to that which was in use in 2012; cyanide is offloaded within the security perimeter of KRO, just outside a separately fenced warehouse area. The area is well away from the nearest surface water, and several miles away from the nearest habitation.

There have been no changes to the cyanide mix and storage tanks and containments since the 2012 recertification audit. The cyanide mix and storage tanks are located in the

Reagents Building and contained by a concrete impoundment that has a sump that reports back to the cyanidation circuit.

Containment is provided by concrete and/or double-wall steel/high-density polyethylene (HDPE) pipelines. Housekeeping in the mixing and storage impoundment areas was generally very good. Cyanide is delivered in heavy steel Flo-Bins owned by DuPont (Chemours) and stored in a secure (i.e., gated and locked), roofed, walled-off, open-front warehouse that is dedicated solely to the storage of cyanide. Empty Flo-Bins are stored immediately adjacent to the warehouse pending return to DuPont (Chemours).

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

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

Discuss the basis for this Finding/Deficiencies Identified:

KRO continues to manage the mixing process in accordance with its "Cyanide Mixing" SOP which was in place during the 2012 recertification audit. This was verified via observation of a video recorded cyanide mix, as well as through discussions with KRO personnel. No change was noted from previous practices observed in the 2012 recertification audit. Cyanide is delivered in heavy-gauge carbon steel Flo-bins. Flo-Bin handling is addressed via the "Unloading Cyanide" SOP. No change was noted from previous practices observed in the 2012 recertification audit; the "unloading Cyanide" SOP specifically prohibits the stacking of Flo-Bins greater than two high. The "Cyanide Mixing" SOP contains specific direction for the clean-up of any spills incurred in the mixing process. After removal of empty Flo-Bins, any dry granule residues are carefully dry-brushed into the mix tank. After pinning in the closed position, the area around the slide valve is washed down, along with any remaining residues in the area of the slide valve fitting; wastewater reports to the sump within the mixing and storage tank containments, and is ultimately routed back to the mix tank. KRO requires a two-man team for each mix, or a competent operator and remote monitoring by video camera as described in the "Cyanide Mixing" SOP.

All Flo-Bins are owned by DuPont (Chemours), and are dedicated to cyanide service; no other uses are permitted. Bin tops remain sealed, and slide valves are pinned after release of cyanide to the mixing tank. Slide valves are closed and pinned, and the empty bins are stored in the open in a secure yard area adjacent to the cyanide storage warehouse, pending return to DuPont (Chemours). Flo-Bin interiors are not permitted to be rinsed. KRO staff are permitted only to wash off the externals of a bin after the slide

valve has been pinned in the closed position; washwater is collected in a sump reporting to the mix tank.

4. OPERATIONS Manage cyanide process solutions and waste streams to protect human health and the environment.

Standards of Practice

4.1 Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures.

The operation is: ■ in full compliance
in substantial compliance
not in compliance...with Standard of Practice 4.1.

Discuss the basis for the Finding/Deficiencies Identified:

The Plant has written management and operating plans for the cyanide facilities. KRO has operated under the same set of operating plans and SOPs that were observed to be in place in the 2012 recertification audit. All cyanide facilities observed in 2012 are still in use; these include:

- a secure cyanide storage warehouse for storage of Flo-Bins prior to mixing;
- a mixing and storage facility (a.k.a. reagent building)
- the grinding mill (which uses reclaim water);
- the thickener circuit;
- the concentrate thickener and concentrate leach plant,
- the leaching and carbon-in-leach (CIL) plant;
- a carbon washing and stripping circuit;
- a cyanide detoxification circuit (INCO);
- the Tailings Storage Facility (TSF);
- tailings distribution pipelines;
- TSF wick drains, underdrains, seepage collection/pumpback (reclaim) system, including a reclaim barge; and
- associated storage tanks, containment structures, pumps, pipelines and stormwater diversion structures.

One additional cyanide facility was noted that was overlooked in the previous audit; reclaim water with WAD CN > 0.5.mg/L, also used for industrial purposes in the crusher building. A number of cyanide facility changes and improvements have occurred since the 2012 recertification audit:

- The Phase V-B and V-C raise of the TSF was built to its final permitted design height;

- An upgradient diversion structure has been constructed to divert surface and shallow groundwater flows around the TSF; and
- A reclaim pond constructed downgradient of the tailings embankment has been commissioned and accepts reclaim water from the western end of the TSF.

KRO keeps a SOPs master list showing, who has modified them and when it happen, and their locations within the intranet. During the field phase of the audit, the documents were available through KRO's SharePoint site.

KRO maintains a range of plans and procedures that address applicable regulatory/permitting requirements and form the basis of the facility design and operation. Applicable permits and planning documents are on file and include:

- State Waste Discharge Permit Number ST 8033 defines discharge limits, monitoring requirements, reporting and records keeping, design criteria for key mill underdrain water treatment system, closure requirements, and spill control plans. The permit required a maximum WAD CN concentration monthly average value of 40 mg/L in the tailings pond, to be measured twice per week.
- Permit ST 8033 was extended by the State while the renewal was pending, until the issuance of the 2015 permit.
- State Waste Discharge Permit Number ST0008033 defines discharge limits, monitoring requirements, reporting and records keeping, solid wastes disposal, design criteria for key mill underdrain water treatment system, closure requirements, spill control plans. This permit kept the previous requirement of 40 mg/L WAD CN concentration in the tailings pond.
- Dam Construction Permit, State of Washington Department of Ecology, Dam Safety Office;
- Design Report, Phase V Tailings Impoundment Expansion (AMEC, June 2006);
- Operation and Maintenance Manual for the Mill and Tailings Impoundment;
- Kettle River Tailings Dam, Phase V, Operation and Maintenance Plan (August 2014), describing the design criteria for the stormwater diversion channel upgradient of the impoundment , which is designed to carry the 100-year, 24-hour storm event; the design maximum operational level will provide storage for the runoff from the 100,000 year event plus one foot freeboard;
- Water Balance SOP; and the

- KRO Monitoring Plan.

The TSF remains a closed, no-discharge system. Average WAD CN values in the TSF must be maintained <40mg/l; no readings above this limit have been noted in over the last three years, and no cyanide has ever been detected downgradient of the TSF. This requirement was verified by review of a sample of the referenced documents selected from the last three years, and via interviews with the Mill Manager.

KRO procedures describe activities related to inspection and preventive maintenance (PM) and include:

- SOP - Tailings pond inspections (Nov. 2015);
- SOP - Preventive Maintenance Check List;
- SOP - Process water lines "A" and "B" Annual pressure test procedure; and
- SOP - Process water lines leak detection monitoring.

JD Edwards software is used for the planning of PM actions and the tracking of associated work orders.

KRO also continues to implement the following procedures:

- SOP - Management of Change, which establish guidelines for conducting HSE reviews of proposed process changes. It considers having a signed document before the change can be implemented and to be signed a second time before the change become operational.
- SOP - Management of Change Communication was developed that specifically addresses the communication of the change to the workforce.
- Corporate Authorization for Expenditure (AFE) process; considers changes involving CAPEX >US\$ 50,000: The process requires evaluation of the potential HSE impacts associated with a proposed change.

The only significant process changes to occur in the years since the last certification audit were the Phase V-B and C raise to the TSF. AFE and Management of Change: Process Modification Request documents were reviewed for both raises.

The cyanide management contingency procedures for non-standard operating or upset conditions observed in 2012 are still in effect, and include:

- Operation and Maintenance Manual for the Mill and Tailings Impoundment;
- Kettle River Tailings Dam Emergency Action Plan (revised Oct. 2014);

- KRO Emergency Response Plan (ERP), revised April 2015.

The Hazardous Materials Contingency Plan noted in 2012 has been integrated into the current version of the ERP, and includes:

- Spill response procedures, including those related to cyanide, clean-up criteria for contaminated soil and procedures for sampling and analysis,
- Tailings dam emergency conditions and response, and
- Reporting spills.
- Tailings Pond Deposition SOP

The O&M Manual for the Mill and Tailings Impoundment is still in effect and is designed to require mill and processing plant shutdown if TSF permit requirements are in any danger of being violated. The Kettle River Tailings Dam Emergency Action Plan addresses action to be taken (including contacts with downstream residents) if the TSF is believed to be in danger of failing. The Tailings Deposition SOP is still in effect and directs operators to immediately notify the Mill Manager for appropriate action in response to a potential structural issue.

KRO continues to perform inspections of the TSF every shift (SOP Tailings pond inspection) to assess the general condition of the liner, tailings distribution and reclaim pipelines, the available freeboard in the impoundment, and underdrain flowrate. These inspections are recorded on the Tailings Pond Log Sheet. If there are findings during the inspection, it is reported to the supervisor and recorded in the solution log list. This report triggers a corrective maintenance action issue through JD Edwards; an example was reviewed for a leak detection in a line. KRO continues to conduct inspections at the process plant, following a checklist, and it is conducted in every shift (SOP PM checklist).

Engineering firms have also been contracted to conduct comprehensive annual inspection at the TSF.

The inspection processes documented in the 2012 certification audit are still in effect, and are summarized as follows:

- a) PM inspections of mill and process facilities are conducted in every shift to evaluate tanks and piping system components for signs of corrosion and leakage – using the PM checklist. Annual ultrasonic testing is performed on all solution tanks; and copies of the test conducted in 2013, 2014 and 2015 were reviewed.
- b) Secondary containment areas are inspected daily for their overall condition and accumulation of solution or precipitation (SOP Concentrate Leach circuit operation and containment pumping procedures, Nov. 2015); observations are recorded on the Mill Daily Operations Inspection Sheet.

- c) TSF underdrain flows are measured once a day and continue to be recorded on the Tailings Pond Log Sheet, following SOP "Tailings pond inspection."
- d) Twice a day PM inspections of the mill and process facilities that are meant to assess pipelines, pumps and valves for signs of corrosion and leakage following the SOP PM check list. See item (a) above. Following the SOP - tailings pond inspection, pipes, valves and pumps are inspected once per shift.
- e) KRO operators (and security staff) continue to perform daily inspections of the TSF, which are documented on Tailings Pond Log Sheets; they address liner condition; condition of tailings distribution and reclaim pipelines, valves, pumps; the available freeboard in the impoundment; and underdrain flow rate. The overall integrity and proper function of the TSF is also independently reviewed by NewFields on at least an annual basis.

Shift inspections are typically documented on Mill Daily Operations Inspection Sheets and the Tailings Pond Log Sheets, recording date and name of the operator. Corrective actions required by inspections continue to trigger generation of a PM work order, which documents the individual requesting the PM action, date requested, a discussion of the work required, and status. Work orders are entered into the JD Edwards PM system.

KRO continues to use a JD Edwards software-based PM planning and tracking system. The system encodes all equipment items in the mill, processing plant, TSF, and ancillary facilities; concise routine PM instructions are incorporated for each equipment item. Routine PM schedules are automatically established for each item and documents with work orders. The system is also designed to respond to specific work order requests on a prioritized basis; it is understood that cyanide-related issues are assigned the highest priority for action.

KRO continues to maintain a diesel backup generator set (genset) in the event that there is a loss of grid power. Monthly PM actions for the emergency genset include a 30 minute run test, as well as checking fuel levels, oil pressure, battery conditions, coolant temperature at the end of the test.

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

The operation is: in full compliance
 in substantial compliance
 not in compliance...with Standard of Practice 4.2.

Discuss the basis for this Finding/Deficiencies Identified:

Operating parameters are closely monitored using the solution log sheets that are updated every two hours; these are maintained electronically and include records operating levels of pH, CN, DO, for the thickener, pre-aeration tank, two leach tanks, six CIL tanks, and the water treatment system. As verified via discussions with the Mill Manager and review of the noted process logs, the CN addition is determined for a 91% gold recovery target, the gold content in the ore, and the cyanide decay, and the additions are adjusted as needed. The CN concentration at the CIL#6 tank has a max value of 150 mg/L and the average by 50 mg/L. Based on evaluation of these data, adjustments are made to maximize gold recovery while maintaining cyanide concentrations out of the detoxification plant/tailings pipeline < 20 mg/l (half the level specified for the reclaim pond in the discharge permit); tailings stream WAD value remain a prime determinant in process adjustment.

CN concentration in the post-detoxification tailings stream is a key determinant in balancing the mineral extraction process to maximize recovery while minimizing CN use and maintaining CN concentrations in tails at or below half of the permitted value. KRO continues to monitor the cyanide concentration out of the detox unit every two hours. The CN addition is based on 2 constraints, the target of 91% gold recovery and an average value of CN on the CIL tank #6 of 50 mg/L.

4.3 Implement a comprehensive water management program to protect against unintentional releases.

The operation is: ■ in full compliance
 in substantial compliance
 not in compliance...with Standard of Practice 4.3.

Discuss the basis for the Finding/Deficiencies Identified:

A comprehensive, Excel-based water balance model has been maintained that tracks water flow through the mill, processing plant, and TSF. The model is focused on the inputs to and outputs from the TSF, and calculates TSF water elevation and volume on a monthly basis. The TSF is designed as a fully lined zero-discharge facility, so evaporation is the only significant water loss considered in the model. The prediction takes into account the probabilistic nature of the rainfall, which is based on the statistical characteristics of the historical data.

The data are compiled monthly and the model is updated by replacing predicted values with the actual values. The monthly water balance report compares predicted and actual results. Kinross corporate policy still requires each site to manage its water balance such that the variance between planned and actual results is within 30 percent; results are reviewed quarterly.

Water balance (WB) methodology has not undergone substantial changes in the years since the 2012 recertification audit. The WB model considers the rate at which tailings are applied to the TSF. The model uses monthly averages for meteorological data; however the TSF continues to be operated to maintain adequate capacity to contain inflow from the 100,000-year, 72-hour storm event plus one foot of freeboard. KRO maintains the water surface elevation of the TSF a minimum of 3.4 feet below the embankment crest, which provides sufficient capacity for the storm event plus one foot of freeboard above the storm level. TSF water levels are observed daily; surveyed markings are applied to the pond liner to facilitate a more accurate estimate of freeboard.

KRO keeps a meteorological station on site, installed on the top of the administration building. The met station is quarterly maintained; work orders are issued every quarter, describing with detail all the steps required to maintain all the sensors. Upgradient earthworks divert stormwater around the TSF, and the stormwater around the facility. These earthworks have been upgraded to accommodate the latest raises of the TSF. Stormwater collected at the mill site is channelled to a lined sump and pumped to the TSF and the water balance model accounts for this input. The water balance model also accounts for meteoric precipitation inputs.

The WB is updated on a monthly basis with meteorological data collected from an onsite station. The monthly report compares predicted and actual results for that month. The WB model does not specifically consider the effects of freezing and thawing conditions on the accumulation of precipitation within the facility and the upgradient watershed; however, upgradient stormwater is diverted around the TSF, and storage capacity is maintained in the TSF to contain a 100,000-year storm event plus one foot of freeboard. The TSF is designed as a lined zero-discharge facility, with an underdrain system to intercept shallow groundwater and seepage. Evaporation is the only water loss. The WB model does not need to consider the effects of potential power outages, as all water and tailings inputs pumped into and out of the TSF would stop in the event of a power outage. The TSF is a closed facility, and there is no discharge to surface waters.

KRO perform inspections twice a day of the TSF, which are recorded on the Tailings Pond Log Sheet, requesting to check for 3.4' of freeboard at liner, following the SOP for Tailings pond inspection". Once a year a bathymetric survey is conducted providing water volume available at the TSF; following the SOP for Water Balance. As previously noted, the TSF operates to contain the 100,000-year, 72-hour storm event plus one foot of freeboard.

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

The operation is: ■ in full compliance

in substantial compliance
not in compliance...with Standard of Practice 4.4.

Discuss the basis for the Finding/Deficiencies Identified:

The TSF and the reclaim pond are the only facilities at the KRO Key Mill site where open solutions are stored, and by permit, WAD CN must be maintained < 40mg/L in the deposited tailings. KRO keeps the WAD CN at about 20 mg/L. A fence surrounds the TSF to restrict wildlife access. The fence gates are checked during the daily inspections (each shift), following the SOP for tailings pond inspection; and inspects the perimeter fence annually. The permit level for WAD cyanide in the TSF is 40 mg/L on a monthly average, and evaluation of the TSF pond reclaim water #2 WAD CN database for 2013, 2014, and 2015 shows no exceedances.

Inspections for wildlife presence are performed of the TSF each shift. These inspections include monitoring for the presence of wildlife and the status of gates and fencing surrounding the facility. Wildlife observances and mortalities are documented on the Tailings Pond Log Sheet. If a wildlife is identified the inspector is required to report to the environmental department. If there is mortality, a Wildlife Report Form is completed and the incident is reported to the Washington Department of Fish and Wildlife (WDFW). No CN-related mortalities have been observed since the 2012 audit.

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

The operation is: ■ in full compliance
in substantial compliance
not in compliance...with Standard of Practice 4.5.

Discuss the basis for the Finding/Deficiencies Identified:

There is no direct discharge from the TSF or mill site, and the TSF is operated as a lined zero-discharge facility. KRO is not permitted to discharge wastewater from the TSF to either surface or ground waters. The TSF is lined with a geomembrane and has an underdrain system to intercept shallow groundwater and seepage. The water collected by the underdrain system is treated for nitrates and sulfates at an adjacent bio-treatment plant and then infiltrated back into groundwater via two separate galleries upgradient from two groundwater monitoring wells. Underdrain water is tested internally for WAD CN and conductivity on a daily basis to detect the presence of seepage from the TSF. Twice a week samples are analysed by an external laboratory. Data collected for 2013, 2014, and 2015 downstream of the mill and TSF shows no reading of CN. KRO conducts quarterly sampling of surface water at two locations downstream of the mill and TSF. These samples are analyzed for WAD CN. No indirect discharges have been observed in the last three years that have caused cyanide concentrations in surface

waters to rise above levels protective of the numerical regulatory standard for protection of the beneficial use of aquatic wildlife. The results of analysis on samples collected since 2012 from surface water and the TSF underdrain were all below the detection limit for Total and WAD cyanide.

4.6 Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.

The operation is: ■ in full compliance
in substantial compliance
not in compliance...with Standard of Practice 4.6.

Discuss the basis for the Finding/Deficiencies Identified:

There has been no substantive change in practice since the 2012 recertification audit. KRO has implemented solution management and seepage control systems to protect groundwater below and downgradient of the operation.

The TSF is a lined zero discharge facility, it is underlain by a gravel underdrain system to collect groundwater and to act as a seepage detection and collection system. If abnormally high conductivity is detected, the water is pumped back into the TSF. Additionally, KRO collects samples at the underdrain two times each week and sends them to a certified laboratory for WAD cyanide analysis. There are 3 monitoring wells located downstream of the TSF, where water quality is monitored frequently enough to detect any seepage. Records for the past 3 years show that Total cyanide levels were all below the detection limit. The TSF uses an external reclaim pond downgradient of the tailings impoundment that receives underdrain water from the west end of the TSF that is pumped back into the pond. Pipelines from the TSF to the reclaim water tank, as well as the tailings pipeline, are all pipe in pipe, and in case of a leak, the first pipe reports back to the secondary containment (SC) of the reclaim water tank, and to the TSF on the other side.

The process plant includes the active cyanide facilities: the cyanide storage warehouse; reagent building; grinding mill and crusher building (where reclaim water is introduced back into the process); thickener circuit; CIL plant, ConLeach plant; carbon washing and stripping circuit; and cyanide detoxification circuit, are all located within concrete SC.

State Waste Discharge Permit Number ST 8033 expired initially on July 31, 2009, but was automatically extended by the State while the renewal was pending. The permit was reissued and is effective through April 30, 2020. The permit establishes:

- a) monitoring wells TP-1, TP-2 and TP-3 as the sites for monitoring groundwater.

- b) parameters to be monitored, limited to Nitrate, Nitrate nitrogen, sulphate, and total dissolved solids.
- c) requirements for groundwater to be monitored according to the schedule in the approved monitoring plan.

The monitoring plan conducted by KRO dated April 2007, request to measure total CN, following the profile I (Table 2.4.1, page. 6) at the MW. The data collected from 2012 to 2015 at the 3 monitoring wells were reviewed and most of the readings are below the detection limit of 0.01 mg/L of Total CN, with exception of one reading of 0.017 mg/L. The data reviewed covered 19 readings for TP-1, 15 for TP-2, and 27 for TP-3. The USEPA defines the maximum contaminant levels for free CN as 0.2 mg/L; all readings collected by KRO are below this limit.

4.7 Provide spill prevention or containment measures for process tanks and pipelines.

The operation is: in full compliance
 in substantial compliance
 not in compliance...with Standard of Practice 4.7.

Discuss the basis for the Finding/Deficiencies Identified:

There has been no substantive change in practice since the 2012 recertification audit. There have been no modifications to the bermed concrete impoundments for the mixing and storage tanks and CIL tanks. Bermed concrete impoundments are provided for the ConLeach facility. There have been no modifications to the bermed concrete impoundments for the mixing and storage tanks or the ConLeach facility. Volume calculations remain on file in the Independent Engineer's reports prepared for the CIL and mixing and storage tanks, and a separate report prepared for the ConLeach facility. The calculations on file, confirm that secondary containments for cyanide mixing and process tanks are sized to hold a volume in excess of a nominal 110% of the largest tank within the containment; considering any piping draining back to the tank, and with additional capacity for the design storm event. □

There have been no modifications to the bermed concrete impoundments and collection sumps/solution return systems for the mixing and storage tanks and CIL tanks in the last 3 years. A similar collection sump and return system is provided within the containment for the ConLeach facility. All pipeline containment measures evaluated and accepted as part of the initial certification audit are in place and functioning as intended.

Two spills were reported to the Department of Ecology in 2015 (June 25 and July 5): one related to the reclaim water pipe failure of a manufactured weld on a 90 degree elbow, where the solutions flowed over the surface (1300 gallons at 1.3 ppm WAD CN); and the second spill happen when reclaim water was released out of containment and onto the soil (500-1000 gallons at 0.8 ppm WAD CN) when the auto-valve associated with the

reclaim tank level failed to close following a system outage caused by power interruption. During the preparation of this report, KRO took additional steps to improve the conditions at the pipeline, and provided evidence of the improvements:

- a) the pipeline supporting steel structure, was based on an uneven soil surface: this was improved and evidence shows better conditions for the supporting steel structure.
- b) the inspection PM checklist was updated to include the drainages of the reclaim water tank SC,
- c) the auto-valve associated with the reclaim water tank was included into the JD Edward PM system and evidence of the planned PM.

The San Poil River is the nearest waterway, and is several hundred feet downgradient from the TSF. The tailings deposition and reclaim water pipelines are both pipe-in-pipe installations. All cyanide storage and solution tanks are constructed of carbon steel. Solution/slurry conveyance pipelines are constructed of high-density polyethylene (HDPE), steel, or for the ConLeach pipe-in-pipe arrangements only, PVC. These materials are compatible with cyanide and high pH conditions.

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

The operation is: ■ in full compliance
 in substantial compliance
 not in compliance...with Standard of Practice 4.8.

Describe the basis for the Finding/Deficiencies Identified:

KRO completed the Phase V-B and V-C raise of the TSF to its final permitted design height. For the Phase V-B TSF raise, the QA/QC and construction observation summary report covered aspects related to earthwork test procedures and results and geomembrane liner test procedures and results. The report includes also daily progress reports, field density test and laboratory test results, geomembrane liner information, and record drawings for earthworks and geomembrane liner.

For the Phase V-C TSF raise, the QA/QC and construction observation report covered aspects related to earthworks and geosynthetics installation. The earthworks section covered aspects of foundation preparation, excavation, fill placement, seepage collection system and piezometer relocation. The geosynthetics section covered aspects of materials, geomembrane installation, geotextile installation, daily observation reports, as-built drawings, technical specifications, and field and laboratory test results.

The original QA/QC records verified in 2012 certification audit remain on file, as well as the additional external engineering review records that were required to be completed For Phase V-B and V-C TSF raise, the reports addressed the suitability of materials; the adequacy of soil compaction; and the installation of synthetic membrane liners, including initially checking the quality of the materials (thickness tests, tensile properties, carbon black contents and density) following ASTM procedures; and subsequently checking the installation.

The QA/QC report for the Phase V-B prepared by AMEC was signed by a Professional Engineer (PE) registered in the State of Washington. The QA/QC report for the Phase V-C prepared by NewFields was also signed by a PE registered in Washington. The original external engineering review records that were required to be completed for the original facility and the ConLeach plant remain on file.

4.9 Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.

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

Describe the basis for the Finding/Deficiencies Identified:

There have been no substantive changes from practices observed in the 2012 recertification audit. Standard procedures for monitoring surface water and groundwater are provided in the Kettle River Operations Monitoring Plan (April 2007). Wildlife monitoring is integrated into the daily inspections performed at the TSF. Wildlife observations are documented on the Tailings Pond Log Sheet, and wildlife mortalities are documented on the KRO Wildlife Report Form.

The KRO Monitoring Plan has not changed since 2007, and as noted in the 2012 recertification audit was developed by a former Environmental Manager at KRO. KRO Monitoring Plan continues to provide monitoring locations and frequencies, water quality profiles for monitoring parameters, monitoring documentation requirements and sampling procedures.

KRO is a zero discharge facility and does not discharge process water. KRO monitors surface water quarterly at 4 sampling stations, 2 upstream and 2 downstream of the key mill facilities. The analytical profile includes measuring Total Cyanide. KRO monitors groundwater quality downgradient of the TSF (at monitoring wells: TP-1 TP-2 and TP-3) and underdrain water quality to ensure that indirect discharges are not occurring.

Wildlife monitoring is integrated into the daily inspections conducted at the TSF. Wildlife observances and mortalities are documented on the Tailings Pond Log Sheet, and on the KRO Wildlife Report Form. No wildlife mortalities have been attributed to the use of cyanide.

5. DECOMMISSIONING Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.

Standards of Practice

5.1 Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

The operation is: ■ in full compliance
 in substantial compliance
 not in compliance with Standard of Practice 5.1

Describe the basis for the Finding/Deficiencies Identified:

There have been no substantive changes to KRO's practices since the 2012 recertification audit. As noted therein, KRO's Washington State Discharge Permit Number ST0008033, requires compliance with all other permits required by the state. It was reissued on March 31, 2015, became effective on May 1, 2015, and expires on April 30, 2020. The development, review, and approval of a decommissioning and closure plan for the TMF and associated facilities (i.e., the mill, CIL plant, concentrated leach plant, and ancillary facilities and infrastructure). The current plan ("Reclamation Plan for the Kettle River Operations Tailings Disposal Facility") was developed by Golder Associates in 2007 and submitted for agency approval in 2008.

The Kinross Decommissioning Liability (KDL) report is updated on an annual basis and was most recently submitted to Kinross in November 2015 in draft format. Discussions with KRO personnel indicate that the reclamation Plan and ARO, recently retitled as the KDL report, will be harmonized and updated to include more detailed procedures and planning information prior to entering mine/mill closure. Any additionally detailed procedural requirements will be specified in the contractual SOWs issued to reclamation contractors. Letters of Credit are issued in response to Agency Approval of permits related to operation and closure of the site. As noted in the 2012 recertification audit, the current reclamation plan and the supporting narrative for Kinross's KDL process both contain conceptual sequences of activity that can be interpreted as a preliminary decommissioning and closure schedule that includes all cyanide management facilities.

KRO's reclamation plan is generated as part of its obligations pursuant to its Washington State Discharge Permit, and is currently subject to an extension request. The KDL Report is updated annually as a Kinross Corporate requirement, and the procedural detail in its supporting narrative reflect the current status of mine infrastructure. It is understood that the conceptual detail represented in the annually updated KDL Report will be reflected in an updated decommissioning, reclamation, and closure plan that will be prepared prior to the initiation of closure phase activities.

5.2 Establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.

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

Describe the basis for this Finding/Deficiencies Identified:

Current closure cost estimating practices are consistent with those in effect in the 2012 recertification audit; the KDL Report and its supporting narrative reflects third-part closure costs and the technical approach to decommissioning and closure that KRO would use if the mine were to close immediately. A review of the current KDL report indicates that it is based on actual mine infrastructure, and is calculated using best available/most current cost information; the annual KDL report therefore is a better indicator of the true costs of closure at a given point in time than the decommissioning and closure plan required under the State Waste Discharge Permit. KRO is obliged to establish a letter of credit with a bank with the State of Washington Department of Ecology as part of its Waste Discharge Permit requirements. The bond is established as a letter of credit and substantially exceeds the value of the annually estimated closure costs for cyanide management facilities presented in the KDL.

A corporate "Internal Code for Self-Insurance of Decommissioning and Closure Liabilities" was established in July of 2008 specifically to address the self-insurance/self-guarantee and financial strength provisions of the ICMC. This internal code presents the mathematical assumptions used to calculate financial reserve requirements, and requires specific Kinross operations, including KRO, to demonstrate that they have sufficient assets to address all aspects of cyanide facility decommissioning. KRO is required to have reasonable ratios of assets to liabilities, and net working capital greater than the sum of all estimated cyanide-related decommissioning costs. This value is defined in the KDL Report, which is subject to annual update and an annual review by an external financial consultant (KPMG).

6. WORKER SAFETY Protect workers' health and safety from exposure to cyanide.

Standards of Practice

6.1 Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

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

Describe the basis for the Finding/Deficiencies Identified:

There have been no substantive changes in KRO practices since the 2012 recertification audit with the exception of an upgrade of HCN sensors. Pre-work inspections are conducted through KRO's "5 Point" Safety Program to ensure workers remain alert to safety issues and personnel protective equipment (PPE) requirements before undertaking tasks. The "Mixing Cyanide" SOP, which deals with high concentration cyanide solutions, details the requirements for pre-work inspections and PPE. Where a non-routine work task is to be performed, a Pre-Task Plan or Team Level Risk Assessment is reportedly completed. The plan or assessment includes an evaluation of work permit requirements, pre-work inspections, PPE requirements, emergency equipment checks, and a hazard assessment.

In addition to the required use of hardhat, steel toe boots, safety goggles/side shields, and hearing protection in designated areas, there are also requirements detailed in procedures for wearing additional items of personal protection [e.g., rubber gloves and coveralls, half or full face respirators, self-containing breathing apparatus (SCBA)] when undertaking specific tasks or when working in specific areas where there is a significant risk of exposure to cyanide. Signs are also posted in those areas of the plant where additional PPE is required to be used.

The Confined Space Entry procedure require the work permit process to be followed. This permit process includes, among other items, pre-work inspections, evaluation of PPE, and approval and sign-off by a supervisor before work can commence. Other SOPs are also in place for maintenance improvements since the last audit, including "Changing Cyanide Pump" and "Blowing Out Cyanide Lines."

KRO continues to implement the "Management of Change" SOP, which establishes guidelines for conducting environmental and safety reviews of proposed process changes. "Management of Change," a Kinross Corporate Standard, also specifically addresses the communication of the change to the workforce. Changes involving capital expenditures >\$US 50,000 require implementation of a corporate Authorization for

Expenditure (AFE) process, which also requires evaluation of the associated potential environmental and health and safety impacts.

The significant process changes to occur in the years since the 2012 certification audit was the Phase V-B and V-C raise to the TSF in 2013 and 2014. An additional Management of Change communicated on January 28, 2015 for the HCN monitor sensors upgrade.

Worker input is obtained through worker participation in the 5 Point Safety System, weekly tailgate safety meetings, discussion following task observations, Health, and Safety (EHS) suggestion boxes located in the mill lunch room and in the administration building and the Health and Safety Committee. A 5 Point Safety System Card is completed by each worker daily. The card is used to conduct pre-work checks for appropriate PPE, lockout/tagout, permits/procedures to follow, equipment safety checks, housekeeping, signage, and other information. The card includes an area for providing possible solutions for health, safety and environmental concerns identified, and KRO has a reward system for workers that provide good suggestions. The system has not changed since the 2012 certification. The Near Miss reporting option is still in place on the 5 Point Safety cards. During weekly tailgate meetings different topics are presented or tabled. Workers are encouraged to provide input to health and safety procedures during these meetings. Records of these meeting are maintained and include signatures of attendees and supervisor, topic discussed and meeting date. Records were available from 2012 to present. Additional worker involvement since the last certification, workers are encouraged to present safety topics during tailgate meetings. The Safety Clerk maintains a summary of these meetings and the topics discussed.

KRO has an active program of conducting task observations via the Job/Task Observation Report. As part of this program, workers have an opportunity to discuss potential improvements that could be made to work tasks with their supervisor or others performing the observations. The suggestion box system that was in place during the 2012 certification audit was still active although the system is not used frequently.

6.2 Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

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

Describe the basis for the Finding/Deficiencies Identified:

There have been no substantive changes to KRO's practices since the 2012 recertification audit. The operation has established set-points and operating tolerances

for managing pH in the process to limit the potential for evolution of HCN gas. The pH is adjusted via a lime solution circuit and is automatically added. Lime can also be added manually on each tank if additional adjustment is required to maintain the solutions in the leach circuits within the target pH range (between 10.0 and 11.0). Review of daily process data showed that the operation has maintained the solutions in the CIL circuit and ConLeach circuit consistently above pH 10.

Fixed Sensidyne HCN monitoring units are located in the Cyanide Mix Room, top of the water treatment tank, and at the strip area in the mill building. These are the only areas identified by KRO where HCN exposure is considered a potential concern. The units are set to alarm (visual and audible) at 4.7 ppm and 10 ppm HCN. The operator must also string yellow caution tape across entrances to the area. There is also a site evacuation alarm if HCN exceeds 100 ppm. Continuous HCN readings from these monitors are recorded and are accessible as plots in the Mill Control Room.

In addition to the fixed Sensidyne monitors that are located in areas where there is a potential for generation of HCN gas, the mill has two GasAlert Monotox portable monitors for HCN gas detection. These monitors are used by workers when conducting tasks where they may be exposed to HCN or when working in areas where there is a significant potential for HCN gas generation. When not in use these monitors are stored in the mill lunch room and in the maintenance shop. An SOP, "Cyanide Mixing" and a Cardinal Rule, "Confined Spaces," include requirements for using personal monitors. In addition, pre-work assessments and the 5-point safety program require workers/supervisors to review PPE and other safety requirements prior to undertaking work. The Sensidyne monitoring units are on a PM schedule that includes monthly calibration. The calibration and maintenance is undertaken in-house by the instrumentation technician and records are recorded and tracked through the PM Expert Maintenance Tracking Program. Similarly, KRO has three ITX portable multigas monitors and two GasAlert portable monitors for HCN detection. The ITX portable monitors are calibrated monthly. The GasAlert monitors are on a 90 day calibration schedule. These monitors alert the user of the number of days remaining before recalibration is required. These monitors are set to alarm at 4.7 ppm (low) and 10 ppm (high) HCN. Calibration records for the fixed and portable monitors are tracked and recorded through the JD Edwards PM System.

Warning signage is amply posted in areas where cyanide is present. Signage includes cyanide hazard warning signs on entryways to the mill, reclaim water tank, warehouse security fence, cyanide storage compound, and concentrator dog house; signage and/or colour coding on cyanide piping; and labelling of leach tanks. A cyanide warning sign is also posted on the locked entrance gate to the fenced-off TSF area. Piping is either color coded or labelled to identify its contents. The piping color coding key is posted in prominent areas of the site.

Cyanide facilities are all designated as “No Smoking” areas. There are also prominent no drinking/eating/smoking signs posted at entrances to the mill process area. Shower/eyewash stations are located in most areas where there is a potential for exposure to cyanide. These include stations in the cyanide mix area (on the mixing deck and outside on the ground floor), in the flotation area, outside the titration laboratory in the mill (which is also accessible from the deck above the leach tanks), in the doghouse at the ConLeach circuit, and on the upper decks of the ConLeach and CIL tanks.

The shower/eyewash stations units are supplied by a 40 psi regulated potable water supply. The supply pressure is checked as part of shift inspections and the gauge is on an annual maintenance program. Showers and eye wash stations are checked and tested daily during each shift. The Cyanide Mixing SOP requires that the shower/eye-wash station be checked prior to conducting cyanide mixing operations.

All fire extinguishers in the cyanide use areas are a dry chemical type. Extinguishers are inspected on a monthly basis by Security. In addition, KRO contracts a fire extinguisher supplier and specialist company, to annually check and conduct maintenance on the fire extinguishers. Warning signage is amply posted in areas where cyanide is present. Signage includes cyanide hazard warning signs on entryways to the mill, reclaim water tank, warehouse security fence, cyanide storage compound, and concentrator dog house; signage and colour coding on piping; and labelling of leach tanks. Material Safety Data Sheets (MSDSs) are managed through “MSDS Online,” a program set up and maintained by the Safety Department. All employees are trained in the use of the system and can access a MSDS through the KRO intranet portal. MSDSs are accessible to all workers via dedicated terminals located in the Mill Lunch Room and Mill Warehouse. MSDSs may also be obtained by calling MSDS Online. All MSDSs are provided in English. In addition, hard copies of MSDSs for cyanide are posted in the cyanide storage facility on the fence and on the interior wall.

Accident investigations are controlled primarily through the “Accident Investigation” SOP that provides instruction and guidance to ensure that investigations (including those that involve cyanide) are completed thoroughly. The SOP addresses accidents associated with injuries/illnesses; fires and explosions; property damage; hazardous substance discharges, and other incidences. The accident investigation procedure involves completion of a root cause analysis through examination of training records and task procedures as well as an analysis and evaluation of significant causes and, lastly, reporting responsibilities.

Investigation reports include checkboxes for whether a SOP, or some other governing document, exists for the task, and whether it was followed. Investigation reports also include checkboxes to identify whether inadequate program standards and /or inadequate work standards contributed to the accident. Comment areas are also included on the report, so that the investigator can comment on the adequacy of SOPs and/or programs.

KRO utilizes an electronic incident reporting and tracking system maintained by Kinross for all operational activities which includes those in the mill. This system is used to track and communicate management activity in response to an incident. There were no incidents related to cyanide since the 2012 recertification audit.

6.3 Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

The operation is: in full compliance
 in substantial compliance
 not in compliance with Standard of Practice 6.3

Describe the basis for this Finding/Deficiencies Identified:

Amyl nitrite antidote is stored in the Maintenance Shop First Aid, Mill Lunch Room, Bottom Floor Reagent Building, and the Mill Building–Solutions Lab. The amyl nitrite ampoules are kept in pre-packaged backpacks in dedicated mini-refrigerators to maintain the amyl nitrite within the temperature range recommended by the manufacturer. The cyanide antidote kits are inspected each shift by operators to check that they have not been opened, and monthly by the Mill Department to check temperature and amyl nitrite expiry date.

KRO has two oxygen/resuscitators kits, one located in the first-aid cabinet near the mill lunchroom and the other located in the first aid room in the maintenance shop. All mill workers are equipped with hand-held radios. The amyl nitrite ampoules are kept in dedicated mini-refrigerators to maintain the amyl nitrite within the temperature range recommended by the manufacturer. The condition of the amyl nitrite, Flynn resuscitators, as well as the working order of the shower/eye-wash stations are reportedly checked each shift during daily visual operations inspections. Mill Department personnel conduct monthly checks of first-aid cabinets and amyl-nitrite kits to ensure the equipment is maintained and the amyl nitrite is within the manufacturer’s expiry date. Records of these inspections are maintained by Mill Department personnel and the Mill Manager and are reportedly available for the past 3 years.

The primary document for responding to emergencies is the “Kinross Gold Corporation Kettle River Operations Emergency Response Plan.” Sections 10.1 and 10.2, “Health and Emergency Information,” address symptoms of cyanide exposure and first-aid for cyanide poisoning. Emergency medical response information is also provided in the Hazardous Material Contingency Plan (HMCP), which is appended to the ERP).

Cyanide poisoning first aid procedures are contained in the ERP. All employees are trained in first aid treatment for cyanide exposures. There are six Emergency Medical

Technicians (EMTs) on personnel at the mill site. Annual refresher cyanide awareness training is provided, most recently by a DuPont (Chemours) online system. In addition, all employees are trained as emergency responders. All operators are trained in use of monitors, alarm systems, SCBA, and emergency kit locations. All personnel are trained in the administration of amyl nitrite.

KRO is located approximately 6 miles from the Ferry County Memorial Hospital, in Republic, WA. Based on the close proximity, no special transportation arrangements have been made to transport workers exposed to cyanide to locally available qualified off site medical facilities. In the event of an emergency, the mill can dial 911 for emergency service assistance from the Ferry County Fire Department/EMS (if needed). KRO has a formalized arrangement with Ferry County Memorial Hospital that the hospital is prepared to receive and treat patients that have been exposed to cyanide. KRO has discussed cyanide response arrangements with the Ferry County Memorial Hospital, Ferry County Fire Department/EMS, County and State Police and other government agencies for emergency response needs in general.

The Fire Department/EMS, Ferry County Hospital, Public Utility District (PUD) participated in mock drills. These took place on December 12, 2013, November 4, 2014, October 22, 2015. Representatives of the Fire Department/EMS and PUD were provided with the information necessary to partake in the DuPont (Chemours) Online system. Based on a review of the documentation associated with the mock emergency drills, lessons learned have been incorporated into response planning.

7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.

Standards of Practice

7.1 Prepare detailed emergency response plans for potential cyanide releases.

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

Describe the basis for the Finding/Deficiencies Identified:

KRO has maintained an Emergency Response Plan (ERP) since last recertification audit. The Plan provides emergency operating procedures to be followed in the event of any emergency. It includes initial response, PPE requirements, contact information, emergency response duties and responsibilities, and response steps. The Plan also includes emergency medical response and first aid procedures for cyanide exposure. The ERP also includes as appendix B a Hazardous Materials Contingency Plan

(HMCP). The HMCP is spill specific and addresses response, clean-up and reporting requirements for all spills or releases into the environment of hazardous materials used by KRO, including cyanide.

Potential emergency scenarios are considered as part of the development of the risk control procedures set out in the ERP. The plan also provides overall response procedures as well as additional responses for specific scenarios including power outages and pump failures; failure of cyanide treatment, destruction or recovery; overtopping of ponds and impoundments; releases during unloading and mixing; pipe, valve and tank ruptures; and offsite releases.

KRO maintains the Kettle River Tailings Dam Simplified Emergency Action Plan (EAP), which includes procedures to identify unusual and unlikely conditions which may endanger the dam; initiate remedial actions to prevent or minimize the downstream impacts of a dam failure; and initiate emergency actions to warn downstream residents of impending or actual failure of the dam. The Dam Breach Inundation Study completed by AMEC in June 2007 to reflect the proposed Phase V construction of the tailings facility is still available on site.

The HMCP addresses emergency procedures to follow in the event of tailings dam related emergencies, including extreme runoff or snowmelt, slumping of the embankment, increased seepage and temporary closure or cessation of operations.

KRO takes title and risk of loss for the cyanide upon completion of delivery of the cyanide shipment into the mill complex cyanide storage area. The transporter and ultimately the supplier have responsibility for addressing any off-site incidents. KRO personnel are available to support emergency responses to offsite incidents that involve shipments of hazardous materials on route to the mill. Technical assistance, disposal options, and media response will also be provided by KRO, when practical.

The ERP describes appropriate actions in the event of a cyanide emergency and details cyanide exposure symptoms and first aid measures including use of medical oxygen and amyl-nitrite antidote; response actions in the event of various types of cyanide emergency including cyanide releases; the establishment of safe work zones when responding to hazardous material releases; and post emergency actions for treating, storing or disposing of recovered waste, and contaminated soil or water. The ERP also provides a notification tree for responding to various levels of emergency. In the event of a major incident that could affect the off-site environment or the neighboring community, the Corporate Crisis Management team would become involved and procedures initiated for notifying outside emergency response resources, government agencies, the neighboring community, other stakeholders and the press. In the event of a possible tailings dam failure specific response actions are detailed in the Kettle River Tailings Dam, Simplified Emergency Action Plan.

7.2 Involve site personnel and stakeholders in the planning process.

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

Describe the basis for the Finding/Deficiencies Identified:

All employees are trained in first aid measures for cyanide exposures. Annual refresher cyanide awareness training which includes emergency response and cyanide first aid is also provided. Refresher training was last provided in October 2015. In addition, all employees are trained in emergency response with their level of response capability increasing with their operating grade. All operators are trained in use of monitors, alarm systems; SCBA, emergency kit locations, and amyl nitrite application, although in Washington State EMT certified personnel are not allowed to administrate amyl nitrite.

KRO has discussed cyanide response arrangements with the Ferry County Public Hospital District, Local Emergency Planning Commissions (LEPCs), Ferry County Fire Department/EMS, County and State Police, and other government agencies. Although not formalized, the emergency organizations/departments meet on a regular basis. Outside responders (Ferry County Fire Department/EMS, Ferry County Sheriff, Republic ambulance, hospital, and power company) also responded to a mock drill in January 2013. The Ferry County EMS and Trauma Care Quality Improvement Committee was also offered the opportunity to access the DuPont (Chemours) on-line training in 2014.

Review of stakeholder interaction on-line logs for 2012 to date indicates that KRO management personnel have maintained contacts with various stakeholders, included at least quarterly contacts with the Buckhorn Community Advisory Association. Please review Standard of Practice 9 for more information.

KRO personnel have continued to participate in emergency response coordination meetings with community emergency medical response personnel as well as local law enforcement agencies and volunteer fire departments.

7.3 Designate appropriate personnel and commit necessary equipment and resources for emergency response.

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

Describe the basis for the Finding/Deficiencies Identified:

The roles of emergency response team members are set out in Section 4 of the ERP. The General Manager or his deputy is designated the Site Crisis Management Team Leader and has the capability and authority to lead the incident response and authorize activities and resources as appropriate. ERP. The Plan clearly designates the roles and responsibility of each member and provides names of the primary, alternate and in some roles a second alternate for both the Site Crisis Management Team and the Corporate Crisis Management Team

Annual cyanide refresher (or awareness) training has been provided internally by mill supervisors or safety hygienists in 2014 supported by DuPont (Chemours) on-line training and by DuPont (Chemours) personnel in 2013. All mill operators are trained in use of SCBA and receive annual refresher training in use of this equipment. EMTs are required to have On-going Training and Evaluation Program (OTEP) training by a qualified trainer on a quarterly basis. KRO currently has six EMTs, two of which is located at the mill. In addition the Environmental Manager and Environmental Superintendent are HAZMAT trained.

The duties and responsibilities of the Site Crisis Management Team members are specified in the ERP. A Notification Tree presented in Section 6 of the ERP provides communication roles and responsibilities. Emergency response equipment is also listed in the ERP. Mill operators maintain a checklist of emergency response equipment. DuPont (Chemours) drivers also maintain spill kits in their trucks. Security inspections include monthly inventory and condition of fire extinguishers. Fire extinguishers are also checked and maintained annually by their supplier. In addition, each shift, operators check shower/eye wash units, SCBA/oxygen cylinder pressures and the seals on the amyl nitrite storage cabinets.

An agency contact list is provided in the ERP, and a telephone contact list is also provided in Section 4.4.2 of the HMCP. Specific roles of outside responders are not detailed in the ERP as their role in an emergency would be no different than any other emergency call out that they may attend. Contacts are provided for external notification and reporting to the community and government agencies. In case of a dam failure, the Simplified EAP provides contact information for potentially affected residents

The cyanide response arrangements described in the 2012 recertification audit are still in place with the Ferry County Public Hospital District, Ferry County Fire Department/EMS, County and State Police and other government agencies. The hospitals and emergency responders are aware of the types of emergencies that may occur including cyanide releases and worker exposure. Outside responders are familiar with their roles in KRO's ERP and the Ferry County Fire Department/EMS and Hospital participated in KRO's mock drill in January 2013.

7.4 Develop procedures for internal and external emergency notification and reporting.

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

Describe the basis for the Finding/Deficiencies Identified:

The ERP still contains onsite emergency response contact procedures for both internal and external responders and stakeholders, as well as spill reporting requirements to regulatory agencies. Contact information for both internal and outside responders, government agencies and other stakeholders is also provided. Notification of communities and news media is accomplished through the Site Crisis Management Team spokesperson. This role is generally taken by the General Manager or delegated to a senior manager or other senior site delegate, supported by the External Relations Advisor. In the event of a major incident Kinross's VP of Communication will provide support. A telephone log is provided in the HMCP for recording communication with news media. The Public Official contact list provided in the ERP provides contact information of the Mayor, County Commissioner, Ferry County Sherriff, State Representative and Senator and School Superintendents for Republic and Curlew, WA. The Site Crisis Management Team system is in place since last recertification audit and was used, for example, in the January 2013 mock drill.

The Kettle River Tailings Dam – Simplified Emergency Action Plan lists the names, addresses and contact information of residents located downstream of the dam as well as emergency services in the event that evacuation of the floodplain must be started immediately because a failure is in progress or imminent.

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

The operation is: ■ in full compliance
in substantial compliance
not in compliance with Standard of Practice 7.5

Describe the basis for the Finding/Deficiencies Identified:

The HMCP continues to detail procedures to be followed to recover and neutralize cyanide spills, and addresses both recovery of solid cyanide briquettes and cyanide solutions using trained personnel, use of appropriate PPE, and placement of recovered cyanide into the milling circuit. The procedure indicates that calcium hypochlorite may be used to neutralize the area but states that this should not be done where cyanide has been released into surface water. Where soil has been exposed to cyanide solution the HMCP requires that the soil is probed to determine the total depth of penetration and

samples of contaminated material collected and analyzed for WAD cyanide. Any contamination greater than 10 ppm WAD cyanide is to be excavated if this is not practical, neutralized in place. Excavated soil is to be deposited in the tailings facility. In the event that an alternate water supply is required as a result of an emergency that involves cyanide, the ERP requires arrangements for fresh water delivery.

Calcium hypochlorite is the only neutralization chemical used as a neutralization agent for cyanide spill cleanup. Small quantities are kept with the spill kits. The HMCP specifically prohibits use of calcium hypochlorite in spill events where cyanide has been released to surface waters.

The HMCP also describes the field sampling strategy and methods for investigating the extent of soil contamination resulting from a cyanide spill, including the use of test pits to evaluate the extent and depth of contamination. Where groundwater is encountered in a test pit, this is also to be sampled and analyzed. The HMCP also addresses sample handling and preservation, identification, chain-of-custody procedure and method of analysis to be used.

In the event of a spill impacting groundwater or surface water a specific sampling program would be designed by the Environmental Department. Groundwater and surface water sampling procedures are not described in the HMCP but would follow those detailed in the KRO Monitoring Plan, which has not been updated since last recertification audit. This plan provides detailed procedures on collection of surface water samples, purging and sampling groundwater wells, sample filtration, collection of quality assurance samples, and chain-of-custody.

7.6 Periodically evaluate response procedures and capabilities and revise them as needed.

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

Describe the basis for the Finding/Deficiencies Identified:

The ERP provides a table listing the revisions, and indicated that there have been 13 revisions to the plan between 15 May 2012 and August 21, 2015. Two mock drills involving cyanide were conducted since the last recertification audit. In January 2013, the drill involved an earthquake, a 5 minutes power cut-off and risk of seepage downstream of the tailings dam. In June 2014, the drill involved high readings of HCN in the cyanide mixing area. The 2014 drill was critiqued by Kinross participants with no concerns reported, the mock drill critique template of the Safety department was used.

8. TRAINING Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Standards of Practice

8.1 Train workers to understand the hazards associated with cyanide use.

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

Describe the basis for the Finding/Deficiencies Identified:

All persons entering the mine site must complete site induction training which includes rules of conduct and hazard awareness (including cyanide). This training is administered via a video presentation provided by security. All workers and short-term contractors receive basic cyanide hazard recognition and response training when they are first hired or when they first enter the mill site. Basic contractor training is given by one of KRO's seven MSHA certified trainers. New employees or long-term contractors must complete 40-hr MSHA critical task training. This is provided by MSHA certified trainers and includes cyanide hazard recognition and response as part of critical task training for mill operators. In addition, cyanide awareness refresher training is provided annually to all employees that may encounter cyanide in the workplace. Since the November 2012 recertification audit, training has been provided by MSHA certified trainers. KRO also extended this training to include the Ferry County Memorial Hospital and Fire Department/EMS personnel who could potentially be involved with responding to a cyanide emergency at the mine.

KRO provides refresher training for all personnel who may encounter cyanide in hazard recognition and training records are retained by the Safety Clerk and they are also scanned into Kinross Connected. Attendance sheets are retained for all training sessions. Training is also tracked on a spreadsheet maintained by the Safety Clerk. MSHA/Critical task training records are maintained as hard copies in personnel files.

8.2 Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

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

Describe the basis for the Finding/Deficiencies Identified:

KRO has a formalized program for training new operators to work in the mill. The training program follows the regulatory requirements of MSHA in which employers are obliged to inform employees of the hazard in the workplace. In addition to understanding the process as part of operator-specific training, the program details all hazards (physical, electrical, gravitational and chemical) associated with each area of the plant and activity the worker will encounter when undertaking work assignments. The program identifies the safety and monitoring equipment in-place, warning signage, PPE requirements, and procedures to be followed to minimize risks associated with those hazards. Training requirements associated with the operational procedures applicable to each area/process in the plant that must be completed to the satisfaction of the supervisor before a worker is allowed to work unsupervised in that area or process. In general, operators begin their training in less complicated process areas and, as work experience is gained, may qualify and transfer to other areas of the plant where processes and the job demands are more complex.

The general and cyanide management SOPs collectively form the basis for the training program. Basic cyanide awareness training and 40-hr MSHA training is given to contractors by MSHA certified trainers. The annual refresher cyanide hazard awareness training is provided by the Mill Manager and others. Training in equipment operation and task specific procedures related to cyanide is provided by the Mill Manager, Lead Mill Operator, or other qualified trainers. This training is tracked by the Safety Clerk.

All new employees or contractors that have the potential of encountering cyanide undergo as a minimum basic cyanide hazard recognition training and response before being allowed to work alone in areas where cyanide is present. New employees also undergo 40-hr MSHA training which includes cyanide awareness training. Mill operators, and other affected personnel receive operational training related to their individual work assignments, based on the requirements of governing procedures. Operational training is provided when an employee is first hired or first assigned to a new work area involving cyanide, and refresher training provided annually.

KRO provides annual refresher training in cyanide awareness to all employees that work with cyanide. The refresher training is provided by KRO trainers. The effectiveness of training is undertaken through a written exam to test a worker's understanding of the circuit he/she is training to work in – and, through execution of all SOPs for that circuit to the satisfaction of a trainer. This must be accomplished prior to a worker being approved to work alone at that grade. KRO also has a task observation program that requires supervisors to conduct a minimum of two task observations per month. If substandard acts, substandard conditions, and/or substandard procedures are observed, the supervisor makes recommendations and takes appropriate actions to correct them. This program is used to reinforce procedures as well as identify potential procedural issues. Task Observation reports are completed and forwarded to the Mill Manager. The frequency of task observations generally allows supervisors to conduct task

observations on each operator within a two month period. As noted during the 2012 recertification audit, this program has been in place since 2009.

The operator task training records are retained indefinitely in personnel files maintained by the Safety Clerk and/or Human Resources. Exam records are filed in the Mill Manager's office. Records include the name of the employee, the trainer, the date of training, and the topics covered. Training materials (presentation slides) for the annual refresher training are maintained with sign-off sheets for attendees. These sheets include the date of the training and the name of the trainer. MSHA records documents are completed and retained on file for all operations and safety training. In addition, the Safety Clerk maintains training matrices that summarize training and date completed for all workers. Summary training matrices are maintained for cyanide induction and refresher training and for operator task training.

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

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

Describe the basis for the Finding/Deficiencies Identified:

Cyanide unloading, mixing, production, and maintenance personnel are trained in the requirements of operational procedures as well as relevant cyanide management procedures, including emergency response procedures. Response procedures are also mentioned during cyanide hazard and awareness training which is part of MSHA training, and during annual cyanide refresher training. Cyanide unloading, mixing, production and maintenance personnel are trained in decontamination and first aid procedures as part of their MSHA training and cyanide awareness training. Emergency response procedures associated with specific cyanide failure scenarios are also provided in the ERP.

All workers who may come into contact with cyanide are trained in the use of emergency response equipment including the use of shower/eyewashes to decontaminate, and application of medical oxygen and amyl nitrite. In an emergency, however, amyl nitrite would be administered by an EMT. Mill operators are also trained in the use of SCBA. Mock drills are periodically undertaken to test and improve response skills.

Coordinators and response team members are trained through participation in mock drill exercises as well as external training programs. A number of KROs employees are also community fire fighters. Six KRO employees are EMTs and undertake Ongoing Training and Evaluation Program (OTEP) training quarterly to maintain their EMT status. One EMT is located at the Mill site.

KRO has discussed cyanide response with the Ferry County Hospital, Ferry County Fire Department/EMS, police and other government agencies and departments through the APELL program. Although never fully formalized as the drafted APELL Integration Plan has not been signed by all parties, the program continues to operate on an informal basis. The various emergency organizations/departments meet regularly through the Border Patrol Citizen Academy, EMS Trauma Council and Emergency Management 911 Governing Board. Representatives from the hospital, US Border Patrol, EMS, police and fire departments recently attended cyanide awareness training given by Cyanco in April 2012. Outside responses (Ferry County Fire Department/EMS and Hospital) also participate in mock drills and provide in input during drill post mortems.

Training attendance sheets are retained for all training sessions. MSHA/Critical task training records are maintained in personnel files. Cyanide induction and refresher training records are filed with the Safety Clerk. These records include the date of training, the trainer, and signatures of the trainer and attendees. A copy of the presentation materials are attached with the attendance sheets. Cyanide awareness training and task training is also tracked on a spreadsheet maintained by the Safety Clerk. Mock drill records with attendees are filed with the Safety Clerk and the corrective action sheet is maintained on the intranet drive. EMT Certification is maintained on the State of Washington EMT Certification Web Page. The effectiveness of task training is demonstrated through task training. Task training records are retained by the Mill Manager and Mill Manager, respectively.

9. DIALOGUE Engage in public consultation and disclosure.

Standards of Practice

9.1 Provide stakeholders the opportunity to communicate issues of concern.

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

Describe the basis for the Finding/Deficiencies Identified:

KRO maintained its involvement with the Buckhorn Community Advisory Association, and has continued to participate in emergency response coordination meetings with community emergency medical response personnel, law enforcement agencies, and local volunteer fire departments.

KRO has maintained a full time Community/Government Relations management position, and continues to offer a wide array of stakeholder communications opportunities. Examples observed from review of a sample of contact records from late 2012, 2013, 2014, and early 2015 include periodic meetings with a many different community and non-governmental organizations, organized by KRO and by 3rd parties. KRO also continues to provide mill tours (42 tours in 2015 for 183 people), and provides information at local public gatherings. KRO has also maintained and expanded a computer-based system for tracking assessments and responses to specific complaints or inquiries. There have been no issues or complaints regarding the site's use of cyanide since the 2012-recertification audit; most stakeholder concerns are reportedly related to the economic impacts of the operation's potential closure.

9.2 Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

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

Describe the basis for the Finding/Deficiencies Identified:

KRO keeps offering many varied opportunities for stakeholder interaction and exchange of information, including direct phone to receive comments and complains, the grievance mechanism, and a page in Facebook, where comments can be posted.

KRO has provided the Department of Homeland Security a security plan that among its other topics discusses the specify measures applied to the management of cyanide, but the DHS does not consider the facility to be a security risk. Kinross Corporate continues to periodically produce a Corporate Social Responsibility Report that is published on the corporate website, and that addresses the company's overall commitments as an ICMC signatory. KRO has been providing information to the community about the near closure of the mill, and conducted a household survey in late 2014, to understand perceptions about the closure.

9.3 Make appropriate operational and environmental information regarding cyanide available to stakeholders.

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

Describe the basis for the Finding/Deficiencies Identified:

KRO keeps several different written and/or video-based communications tools that include discussion of cyanide management; these include:

- “From Rock to Gold” (CD and trifold brochure – general distribution)
- “Cyanide Use in Modern Mining” (trifold brochure – general distribution upon request)
- “The Milling Process: The Kettle River Mill” (trifold brochure – general distribution)
- “Responsible Mining and You” (booklet – distributed to all Kinross employees)

Literacy is not an issue in local communities.

KRO has not experienced any cyanide exposures or releases off the mine site requiring response or remediation in the years since the 2012 recertification audit. Response processes have not changed; any such releases would also be disclosed in the Regional Data Tables periodically published under the Corporate Responsibility section of the Kinross website. Locally, should such an incident occur, KRO would communicate with relevant stakeholders per the Kettle River Buckhorn Emergency Management Plan, as well as issue a press release from the Corporate office. A release to surface water would be reported to Washington Department of Ecology (WDOE), local authorities, and the US Coast Guard National Response Center (NRC). WDOE, NRC, and local authorities also must be notified if the release is above Reportable Quantity limits. Any such releases would also be required to be disclosed in the Regional Data Tables periodically published under the Corporate Responsibility section of the Kinross website.

Two onsite spills were reported to the WDOE in 2015; one related to the reclaim water pipe failure of a manufactured weld on a 90 degree elbow, where the solutions flowed over the surface (1300 gallons at 1.3 ppm WAD CN); and the second spill happen when reclaim water was released out of containment and onto the soil (500-1000 gallons at 0.8 ppm WAD CN) when the auto-valve associated with the reclaim tank level failed to close following a system outage caused by power interruption. The releases did not leave the property boundary, enter a waterway, result in a personnel exposure or exceed the Reportable Quantity threshold and was therefore reported only to the WDOE.