INTERNATIONAL CYANIDE MANAGEMENT CODE AUDIT
CORTEZ MINE, NEVADA
SUMMARY AUDIT REPORT

Submitted to:
Barrick Cortez Mines Inc.
Cortez Gold Mine
HC66 Box 1250
Crescent Valley, NV 89821

and

International Cyanide Management Institute
1200 G Street N.W, Suite 800
Washington, D.C. 20005

Submitted by:
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December 31, 2007
LOCATION AND DESCRIPTION OF OPERATION

The Cortez gold mine is located approximately 78 miles southwest of Elko, Lander County, Nevada and approximately 30 air-miles southeast of Battle Mountain, Nevada. More specifically, the mine is within Sections 28, 29, 30, 31, 32, and 33, Township 28 North, Range 47 East, and Sections 4, 5, and 6, Township 27 North, Range 47 East, Mount Diablo Baseline and Meridian. The operation is a joint venture, with Barrick Gold Corporation owning 60 percent interest and the remaining 40 percent interest being owned by Kennecott Minerals Company. Barrick is the operator of the mine and is currently seeking regulatory approval for the nearby Cortez Hills project. The Cortez Mine complex is located on both private land and federal land administrated by the U.S. Department of Interior, Bureau of Land Management.

As of the first part of 2007, Cortez had mined approximately 178 million tons of ore and 594 million tons of waste from the Pipeline Orebody since development of the Pipeline pit began in 1996. Current identified reserves, to be extracted from the South Pipeline Orebody – the geological extension of the Pipeline Orebody – include approximately 175 million tons of ore and 490 million tons of waste. A single open pit, the Pipeline pit, provides access to both orebodies. Ore production is comprised of both mill grade and heap leach grade material, in addition to minor amounts of refractory ore, which is stockpiled and transported off site for processing.

The orebody extends beneath the pre-mining water table. Therefore, dewatering of the host rock and alluvium must be performed in advance of mining. The pit is currently dewatered at rates of approximately 22,000 to 27,000 gpm, with a peak permitted rate of 34,500 gpm, by a system of eleven deep bedrock wells, with an average depth of 950 feet. These wells discharge to a collection pipeline system that connects to the Pipeline Infiltration Project infiltration sites where water percolates into unsaturated alluvium subject to Water Pollution Control Permits. Water quality monitoring has confirmed that the dewatering circuit is separate and distinct from the cyanide processing circuit.

The Cortez Mine Pipeline project consists of an open pit with associated dewatering system, waste rock dumps, two heap leach facilities, two carbon-in-column (CIC) facilities, a carbon-in-leach (CIL) facility (Mill #2), refinery and a tailings impoundment. The heap leach and tailings disposal facilities are located in two areas known as Area 28 and 30. Area 28 facilities consist of a CIC facility,
pregnant solution pond, reclaim/barren solution pond, a stormwater event pond, and ancillary support facilities to process heap solutions. The Area 28 heap leach facilities have been constructed in association with the tailings impoundment and provide the embankments for the impoundment. The Area 28 tailings impoundment consists of rotating spigot discharge locations and a decant pond area. Cortez uses a ferrous sulfate cyanide detoxification treatment system to keep the spigot discharge below 50 milligrams per liter WAD cyanide. The Area 28 heap leach and tailings facilities are managed as a single process water unit with the decant water pipeline from the tailings decant pond receiving cyanide addition and being applied to the heap leach as barren solution. In addition, the tailings internal underdrain system collects and manages solution from the consolidating tailings and reports to the heap leach process ponds. Area 30 facilities consist of an additional heap leach facility, two pregnant ponds, a barren pond, a stormwater event pond, and a CIC recovery facility. All the heap leach and tailings facilities have been constructed with composite HDPE geomembrane and compacted low permeability soil liners. The process water ponds all are constructed with double HDPE geomembrane liners and leak collection and recovery systems. The Mill #2 facility employs a CIL process, storage tanks, thickeners, refinery, mercury scrubber, secondary containment systems, associated appurtenances, and all sumps, pumps and piping necessary to interconnect the components. The #2 facility also includes the Plant Spill Pond (PSP) for spill control. Loaded carbon from the two CIC units is hauled to the Mill #2 facilities for processing. Although the bulk of the processing is done on site, a relatively small amount of carbonaceous ore is shipped off site for processing at Barrick’s Goldstrike Mine. The operations are designed, permitted and operated as zero-discharge facilities. Approximately 700 workers are employed at the Cortez mine.

Cortez has three cyanide unloading and storage tank areas: (1) Mill Building; (2) Area 28 Leach; and (3) Area 30 Leach. The Mill cyanide storage tank is 15 feet in diameter and 20 feet high; the Area 28 cyanide tank is 12 feet diameter by 20 feet high; and the Area 30 has two cyanide storage tanks, 12 feet by 20 feet each. The unloading and storage areas are located away from public access and no surface water bodies are nearby. The storage tank areas and the cyanide unload areas are designed and constructed to contain and recover any leakage from the tanks and the tanker trucks.

Cortez receives liquid sodium cyanide from DuPont De Nemours &Co., Inc. (DuPont) located in Carlin, Nevada in specially engineered tanker trucks. The sodium cyanide is delivered by Sentinel Transportation LLC (Sentinel). Both DuPont and Sentinel are signatory to the Code and have been certified as compliant with the Code by third-party auditors. Cortez stores and manages sodium cyanide in engineered tanks, pipelines and lined ponds that have had appropriate quality control and quality assurance. Cortez employees are trained in cyanide hazards and first aid, first response, emergency response, and specific operational task training. Cortez facilities are fenced to preclude wildlife and livestock from entering cyanide process areas. Cortez conducts daily, weekly, and monthly inspections to assure that facilities are functioning as designed and to monitor process solutions. Preventive maintenance programs are in place to assure the continuous operations. Cortez has approved closure and reclamation plans along with financial assurance to complete the appropriate management of cyanide solutions and solids, and the decontamination of cyanide pipelines and equipment.

Cortez has a comprehensive environmental monitoring program to evaluate the performance of the ore processing facilities and containments. The monitoring program includes daily monitoring of pond leak collection systems, quarterly sampling and analysis of groundwater and surface water, and quarterly sampling and analysis of tailings supernatant ponds. Wildlife monitoring is conducted per shift by the operators during facility inspections.
Cortez has an emergency response team that is trained to respond to onsite fires, chemical spills, and worker exposures to cyanide. Cortez works with local community emergency services to assure that adequate resources are available to address both off site and on site emergencies.

Audit Dates: September 10 - 13, 2007
Auditors: Scott Miller, Lead Auditor
          Brent Bailey, Gold Mining Technical Expert Auditor

SIGNATURES

This Gold Mining Verification Audit Report presents the detailed findings of our International Cyanide Management Code audit of the Cortez Mine located in Nevada. The audit was conducted according to the IMCI Gold Mining Verification Protocol dated September 2007.

Respectively submitted by:

Scott H. Miller, CEA
Lead Auditor

Brent C. Bailey, P.E.
Gold Mining Technical Auditing Expert

Notary Public
State of Colorado
My commission expires 11/31/11

Cortez Mine
Name of Facility

Signature Lead Auditor

December 31, 2007
Date

Golder Associates
The operation is √ in full compliance with

All Code Principles

Golder Associates Inc.
Scott H. Miller
Scott_Miller@golder.com

Brent C. Bailey

Brent C. Bailey
Name of Auditor

Signature of Auditor

December 31, 2007
Date

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.
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.

- [x] in full compliance with
- [ ] in substantial compliance with
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has committed to only purchase cyanide from producers that are compliant with the International Cyanide Management Code (ICMC). Barrick Gold has a supply contract with DuPont De Nemours & Co., Inc. (DuPont) to provide sodium cyanide at Cortez. DuPont has been audited by third party independent auditors and certified as compliant under the ICMC.

2. TRANSPORTATION: 

Protect communities and the environment during cyanide transport.

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

- [x] in full compliance with
- [ ] in substantial compliance with
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has a sodium cyanide supply contract with DuPont. DuPont is by contract solely responsible for the production and transport of sodium cyanide to the delivery point at Cortez. DuPont is a signatory producer to the ICMC and subcontracts Sentinel Transportation LLC (Sentinel) for transportation of the cyanide to Cortez. Sentinel has been certified by third party independent auditors as compliant with the ICMC with clear lines of responsibility for safety, security, release prevention, training, and emergency response.
**Standard of Practice 2.2:** Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

☐ in full compliance with

☐ in substantial compliance with Standard of Practice 2.2

☐ not in compliance with

**Basis for Audit Finding:** DuPont is by contract solely responsible for the production and transport of cyanide to the delivery point at Cortez. The supply chain from the DuPont production facility to the Cortez Mine includes rail transportation to Carlin, Nevada as solid sodium cyanide followed by truck transportation of liquid sodium cyanide to the mine. DuPont is a signatory producer to the ICMC and has conducted appropriate due diligence by qualified third party independent auditors on the rail transportation security, safety, training and emergency response aspects. DuPont subcontracts Sentinel for transportation of the cyanide to Cortez. Sentinel has been certified by third party independent auditors as compliant with the ICMC with appropriate emergency response plans and capabilities and has implemented cyanide management control measures.

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

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

☒ in full compliance with

☐ in substantial compliance with Standard of Practice 3.1

☐ not in compliance with

**Basis for Audit Finding:** Cortez has three cyanide unloading and storage tank areas: 1) Mill #2 Building; 2) Area 28 Leach, and 3) Area 30 Leach. The design and construction of the cyanide unload and storage facilities have been completed appropriately as documented in final design and construction drawings as prepared and stamped by Nevada registered Professional Engineers. The three cyanide unload pads are constructed with cast-in-place reinforced concrete with curved or walled containments. The Mill Building storage tank containment has a collection sump and pump that returns collected solutions back into the Mill Building. The Area 28 and Area 30 containments drain to adjacent ponds. The cyanide unload areas are designed and constructed to contain and recover leakage from the tanker trucks - the tanker unload containments allow containment and recovery of all spilled solution. These unload pads are adequate barriers to prevent seepage to the subsurface. Cortez has an inspection and preventative maintenance program for identification and patching of cracks. The containments were all reviewed for integrity and appeared to be in good condition.
condition. The unloading and storage areas are located away from public access and no surface water bodies are nearby. The Process areas are within the fenced complex of the Cortez operations. All personnel with access to the unloading and storage facilities, including contractors, receive site specific health and safety training that includes cyanide hazard awareness. Cortez provides site security personnel and video surveillance that evaluate the site to prevent unauthorized access. All cyanide storage areas have full time video surveillance capability. Cortez uses only liquid cyanide stored in fully enclosed steel tanks. The Cortez cyanide storage tanks have level indicators and high level alarms that prevent overfilling. In addition, the cyanide levels within the tanks can be monitored from the control room. There are no unsecured valves that would allow direct access to the liquid cyanide. The cyanide storage tanks at Cortez are all located outside with adequate ventilation. Cortez has isolated the cyanide unload and storage tanks away from incompatible chemicals such as acids and oxidizers. The Mill Building is the only area where acids are used and the acid storage is located on the opposite side of the building. No smoking or eating is allowed the cyanide storage areas.

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

☒ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

Basis for Audit Finding: Cyanide is delivered to Cortez as a liquid in tankers. The liquid is transferred from the tanker to a storage tank and there are no empty cyanide containers that require disposal. Cortez has developed and implemented the “Video Monitoring While Offloading Cyanide” Standard Operating Procedure (SOP) that covers the responsibilities for the transporter (Sentinel) and the site personnel. The Cortez procedure references the Sentinel Off-Loading SOP, which includes detailed information on the operation of valves and couplings. Cortez requires appropriate PPE for the delivery driver prior to any activity and video observation by an operator during the off-load operations. Off-loading does not occur until the control room operator has established verbal contact over the radio, has observed compliance with the PPE requirements, truck parking and chocking, and confirmed the tank level. The Cortez operators are trained in the transporter PPE requirements and off-load procedures (including connection and disconnection); and they are trained in emergency response procedures, i.e., initiation of an emergency response action and locations of PPE, locations of cyanide antidote, and oxygen.
4. OPERATIONS: Manage cyanide process solutions and waste streams to protect human health and the environment.

Standard of Practice 4.1: Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.

☒ in full compliance with

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

Basis for Audit Finding: Cortez has developed and implemented operator task specific SOPs, training programs, and management systems for the cyanide facilities that address protection of human health and the environment. These procedures, systems, and programs focus on the safe use and handling of cyanide at the Mill, the Area 28 Heap Leach operation, and the Area 30 Heap Leach Operation. SOPs address all the cyanide management tasks such as unloading and storage of cyanide, operation of the carbon in leach and carbon in column systems, operation of the elutions circuit, and operation of the cyanide detoxification facility. These procedures, programs, and management systems were found to have adequate description of tasks, appropriate safety instruction, inspections, and preventive maintenance programs. Cortez has a policy for management of changes for changes in the process and cyanide handling and use related activities. The procedure requires that all changes in facilities, equipment, materials or operating processes undergo an evaluation and are tracked through a change approval form. Cortez has prepared a Fluid Management Plan (Operating Plan) as part of the Water Pollution Control Permit that covers normal, emergency and upset operating conditions for both the Heap Leach and Tailing Facilities. There are emergency power generators to operate critical functions during power outages for the Mill and Area-28. Operating plans (Appendix D of the Emergency Response Plan) have been developed that include specific instructions on the critical components to be maintained during power outages. Electrical power can be routed from de-watering to Area-30 on an as needed basis to circulate solution back to the leach pad. Cortez conducts inspections on a shift, weekly, monthly and periodic (six week) basis. The inspections are used to develop work orders for repair and maintenance. These inspections are sufficient to assure and document that the equipment and facilities are functioning within the design parameters. Cortez utilizes a computer based system (Oracle®) for identifying, assigning responsibility, scheduling, and tracking the completion of the preventive maintenance activities.

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

☒ in full compliance with

The operation is ☐ in substantial compliance with ☐ not in compliance with Standard of Practice 4.2
**Basis for Audit Finding:** Cortez evaluates cyanide consumption rates through the CIL circuit every 4 hours during operation. Cyanide concentrations are determined by titration methods. Cyanide is added in the grind surge tank at a specific target rate to achieve a free cyanide value of less than 35 ppm at the tailings outflow from CIL tank #8 (the last tank in the circuit). Differing ore types are evaluated prior to processing, usually at least one year ahead of processing to assess consumption rates. In general, all of the Cortez ores are similar in chemistry and as long as the new ore type falls within the general operating parameters no changes in general operating philosophy is required. Cortez targets a cyanide concentration rate of 0.3 to 0.5 pounds per ton (lbs/ton) sodium cyanide in the grind surge tank. Cortez has evaluated the use of inline automated cyanide titrations and use of ion probes for flow density and manual measurements of cyanide and determined that it is effective in adequately characterizing the conditions and controlling the cyanide addition. Cortez has implemented a strategy to control its cyanide addition and minimize the quantity of cyanide detoxification requirements.

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

- [X] in full compliance with

The operation is

- [ ] in substantial compliance with
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has developed a comprehensive water balance that tracks water flow throughout the entire site including the Pipeline Tailings Impoundment, Area-28 and Area-30 Heap Leach facilities and associated pond network. The water balance is a probabilistic model calibrated to actual site conditions and set up to evaluate “what if” scenarios including probabilistic analysis of the precipitation and ore moisture content. The model is set up to evaluate the 24-hour draindown event, the 100-year, 24-hour storm event, the rapid melt of the maximum snow accumulation, which provides sufficiently conservative criteria to prevent the potential for overtopping. The water balance considers both heap leach application rates and tailings slurry discharge rates for the tailings disposal facilities in a reasonable manner using monthly time steps. Cortez measures precipitation for incorporation into the water balance for calibration and evaluation. The Cortez water balance covers all appropriate aspects of the project. The Cortez inspection and monitoring programs require daily measurement of water levels in the process ponds.

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

- [X] in full compliance with

The operation is

- [ ] in substantial compliance with
- [ ] not in compliance with

Cortez Mine  
Name of Facility

[Signature]

Signature Lead Auditor  
December 31, 2007  
Date

Golder Associates

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**Basis for Audit Finding:** Cortez has implemented several different measures to restrict access by wildlife and livestock to open solutions containing cyanide. These measures consist of 1) a perimeter fence around the entire project area; 2) netting on heap leach solution conveyance ditches; 3) bird ball floating covers on all process ponds; 4) six foot high chain link fencing around the process areas; and 5) cyanide destruction of the tailing slurry discharge to keep WAD cyanide concentrations below 50 mg/L in the spigot discharge and decant pond area. Cortez applies leach solutions in a manner designed to prevent ponding, overspray, and runoff. Cortez has developed SOPs to address potential ponding on the heap leach pads, overspray of solution off the heap liners, and ramp drainage.

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

- in full compliance with

**The operation is**

- in substantial compliance with Standard of Practice 4.5
- not in compliance with

**Basis for Audit Finding:** Cortez does not discharge cyanide solutions to surface waters and does not have any indirect discharge of cyanide solutions to surface waters. Cortez operates with zero discharge of process solutions. The facility conducts monitoring of the seepage collection systems and leak detection systems to evaluate the integrity of these systems. No impact to beneficial uses has occurred according to the data presented in the monitoring reports.

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

- in full compliance with

**The operation is**

- in substantial compliance with Standard of Practice 4.6
- not in compliance with

**Basis for Audit Finding:** Cortez has implemented solution management and seepage control systems to protect ground water below and down gradient of the operation. The cyanide facilities are designed for zero discharge to both surface water and groundwater in accordance with NDEP regulations and BLM Cyanide Management Policy and have all been constructed with impermeable containment systems or liners to prevent seepage. The tailings impoundment is a fully lined facility with a liner system comprised of smooth, 60-mil HDPE synthetic primary liner placed over a minimum of 24 inches of clayey, second liner material. Area 28 heap leach facility has a liner system consisting of a 60-mil HDPE synthetic primary liner placed over a 12-inch thick low hydraulic conductivity soil layer secondary liner. The Area 30 heap leach facility is constructed of either 60-mil or 80-mil HDPE liner placed over 12-inch thick Low Hydraulic Conductivity Soil Layer. All ponds for the heap leach facilities are double-lined. All pipes, tanks, and other facilities in the mill area that convey process fluids containing cyanide are located within containment areas. Sumps within containment areas collect any
spilled solution for return to the process. Cortez environmental monitoring data indicates that the operation has no detectable WAD cyanide (<0.01 mg/L) in the ground water at compliance points or down gradient of the operation. Review of the monitoring data indicated that Cortez operations are protective of the beneficial uses of ground water.

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

- [x] in full compliance with

**The operation is**

- [ ] in substantial compliance with **Standard of Practice 4.7**
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has spill prevention and control systems for the cyanide off-load areas, the associated storage tanks, and CIL and CIC tank process areas. The Mill cyanide storage tank secondary containment system consists of concrete walls, approximately 7-feet high. Procedures require maintaining the tank level at 96 percent capacity and provide assurance there is 110 percent storage capacity in the secondary containment. The Area 28 cyanide tank is within a secondary curbed concrete containment with tertiary containment being the lined Reclaim Pond. The Area 30 has two cyanide storage tanks that are located on a concrete curb and a drainage channel is provided to the barren pond for tertiary containment. Cortez has constructed all pipelines with spill prevention and containment measures to collect leaks and prevent releases. All pipes, tanks, and other features in the mill area that convey process fluids containing chemical reagents are located within containment areas. Cortez uses steel, HDPE pipelines, and HDPE lined steel which are compatible materials for the conveyance of high pH, cyanide solutions and slurries.

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

- [x] in full compliance with

**The operation is**

- [ ] in substantial compliance with **Standard of Practice 4.8**
- [ ] not in compliance with

**Basis for Audit Finding:** Quality control and quality assurance (QC/QA) programs have been required during construction for cyanide facilities including the cyanide storage facilities, pipelines, conveyance ditches, process ponds, heap leach facilities and tailings impoundments. The QC/QA documents indicate that construction was completed according to engineering standards and specifications. Cortez has retained qualified engineering personnel to review and provide construction verification documentation. The QC/QA reports are stamped by Professional Engineers licensed in the State of Nevada. These QC/QA documents have also been reviewed and approved by the Nevada Department of Environmental Protection. Cortez maintains copies of all QC/QA documentation in the Environmental Department.
**Standard of Practice 4.9:** Implement monitoring programs to evaluate the effects of cyanide use on wildlife surface and groundwater quality.

- [x] in full compliance with
- [ ] in substantial compliance with
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has environmental monitoring programs developed to evaluate the performance of the cyanide management systems on wildlife and surface water and groundwater quality. The environmental monitoring programs have been prepared and approved by qualified professionals and implemented by qualified professionals and include all appropriate sampling and analysis documentation. These procedures have been reviewed and approved by Nevada Department of Environmental Protection. Cortez conducts monitoring at frequencies adequate to characterize the ground water, seepage collection systems, leak detection systems, wildlife, and process solutions. Cortez does not discharge cyanide process waters to surface water. Cortez provides wildlife mortality training to all employees with an annual refresher. Each employee is responsible for filing a report should they encounter wildlife mortality.

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

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

- [x] in full compliance with
- [ ] in substantial compliance with
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has prepared Closure Plans as well as an internal Life of Mine Plan with written procedures to decommission the cyanide facilities including: process ponds, processing facilities and tailings facilities including a reclamation schedule. The plans include general descriptions of the commitments for management of cyanide solutions, evaporation of all process solution, encapsulation of solids with covers, collection and control of seepage, and rinsing and disposal of piping and other equipment including tanks, pumps and liners. Cortez is required by regulations and their permit requirements to review and update the Reclamation Plan and the corresponding reclamation costs at least every three years.
**Standard of Practice 5.2:** Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

- [x] in full compliance with

- The operation is
  - [ ] in substantial compliance with
  - [ ] not in compliance with

**Basis for Audit Finding:** Cortez has developed a cost estimate for the funding of third party implementation of the decommissioning activities assuming that the Department of Interior Bureau of Land Management (BLM) completes the work. The cost estimate has been reviewed and approved by the Nevada State and BLM. The total reclamation and closure estimate is approximately $21million (M) (for the Cortez Pipeline Project and $29M for the entire Cortez Gold operations), with the building demolition, cyanide detoxification, water management, and material stabilization being approximately $1.7M for the Mill cyanide circuit and $1.1M for interim solution management, $0.9M for the Area 28 heap leach and tailings, and $0.5M for the Area 30 heap leach solution management. Cortez has established an approved surety bond to cover the estimated costs for cyanide related decommissioning activities. The surety bond has been issued to the BLM by Safeco for $29.4M.

**6. WORKER SAFETY:** Protect workers’ health and safety from exposure to cyanide.

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

- [x] in full compliance with

- The operation is
  - [ ] in substantial compliance with
  - [ ] not in compliance with

**Basis for Audit Finding:** Cortez has identified potential cyanide exposure scenarios and developed procedures and plans to eliminate, reduce, and control exposure. These procedures and SOPs describe how cyanide-related tasks are performed, PPE requirements, operator responsibilities, and procedures for using and handling cyanide. Cortez solicits worker concerns and comments on safety issues through safety training and safety meetings. Cortez uses the “Cortez Mill Change Management” procedure to review process and operational changes. The information from the procedure is incorporated into the overall evaluation and modification of the proposed change. All changes are communicated to the workforce and training requirements updated.
Standard of Practice 6.2: Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

☐ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

Basis for Audit Finding: Cortez has developed SOPs for the cyanide usage areas designated to prevent the generation of hydrogen cyanide (HCN) gas in addition to locating key cyanide process facilities outside or in buildings with HCN monitors. Cortez has defined process equipment, standard operating plans for control of cyanide, caustic, and pH. Fixed cyanide monitors are installed in critical locations. Additionally, prior to maintenance work on cyanide equipment or work involving a confined space entry, work areas are checked for hydrogen cyanide concentrations with portable, hand-held monitors. These portable monitors are made available to employees to check the cyanide concentrations in any area. They are equipped with a docking station that maintains the electrical charge, performs weekly calibrations, and registers a continuous, digital maintenance record. The fixed monitors undergo a regularly scheduled preventative maintenance and testing program. Showers and eyewash stations are located at the cyanide off-loading areas and throughout the process areas. Fire extinguishers are located throughout the facility and are pressure, dry chemical. The emergency showers and eyewash stations and fire extinguishers are inspected monthly and a record of the inspections is maintained. Signs are located in areas of cyanide usage to alert workers that cyanide is in use. Unloading, storage, process tanks and piping containing cyanide are identified to alert workers of their contents and the direction of cyanide flow is designated. Areas of the facility, such as the cyanide off-load areas, include signs identifying the presence of cyanide and provide information about cyanide and safety precautions that need to be taken including the use of PPE. MSDS are available throughout the plant and on the Cortez intranet. Cortez utilizes a computer software program to investigate and evaluate accidents, including cyanide exposure incidents. The program facilitates the analysis of a problem to determine the “Root Cause” and helps in the development of a “Corrective Action” report that is then implemented by the operation.

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

☒ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

Basis for Audit Finding: Cortez has an Emergency Response Plan that contains procedures for responding to an accidental spill or discharge of cyanide. The Plan has been implemented through training and securing and placing emergency response equipment in strategic locations. Personal Protective Equipment, resuscitators, and oxygen, are located in cabinets adjacent to the cyanide unloading areas and the cyanide storage tanks. Additionally SCBAs are located in nearby buildings.
where they can be easily accessed in the event of an emergency at the unloading areas and other areas where cyanide is used. The antidote kits (amyl nitrite) are stored in three temperature controlled areas on site. First Responders are trained and informed on the location of the equipment and antidote kits. Radios are used extensively throughout the mine operation. The Cortez Operation has First Responders and mill workers who have received cyanide First Aid training – training in the use of oxygen and amyl nitrate for treatment of cyanide exposure. The mine has a fully equipped Emergency Response Vehicle to transport workers exposed to cyanide to a medical facility, if necessary. Cyanide antidote kits, SCBAs, oxygen kits and body suits with gloves are inspected quarterly. Supplies are replaced if used and inspection records are maintained. Cortez has written correspondence with the hospital and the air ambulance service of the potential need to administer to cyanide patients. Cortez conducts mock drills to periodically test response procedures and modify emergency response plans and procedures.

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

**Standard of Practice 7.1:** Prepare detailed emergency response plans for potential cyanide releases.

- [x] in full compliance with

- [ ] in substantial compliance with Standard of Practice 7.1
- [ ] not in compliance with

**Basis for Audit Finding:** Cortez has developed a Hazardous Materials Spill and Emergency Response Plan (ERP) to address potential accidental releases of cyanide. The ERP and Water Pollution Control Permit (WPCP) Operating Plan address site-specific circumstances and responses for potential release scenarios at the site that may be reasonably expected to occur from storage or process facilities. The ERP contains procedures for mitigation and clean-up of cyanide spills and releases, and procedures for review and assessment of the ERP.

- [x] in full compliance with

- [ ] in substantial compliance with Standard of Practice 7.2
- [ ] not in compliance with

**Basis for Audit Finding:**

Cortez employees participate in emergency mock drills that allow them to experience and comment on the procedures developed in the ERP. Training records show that employees have participated in a 40-hour Hazardous Materials Emergency Response training program, which involved several
exercises that allowed employees to comment and discuss response procedures. Cortez employees attend meetings of the Lander County Local Emergency Planning Committee (LEPC). Through participation on the LEPC these employees have been able to inform the community that Cortez uses cyanide at the site and that it has prepared an ERP to address emergency situations. Cortez has submitted the ERP to the LEPC for their use and reference. Cortez has notified Northeast Nevada Regional Hospital in Elko in writing that the mine operation uses cyanide and there is the potential for a cyanide poisoning victim. The hospital has acknowledged that the emergency room staff knows the proper procedure for treating cyanide poisoning.

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

- ✔ in full compliance with

The operation is
- □ in substantial compliance with Standard of Practice 7.3
- □ not in compliance with

**Basis for Audit Finding:** The ERP defines the primary and alternate individuals in charge of an emergency situation. The definition of roles applies to all emergency response situations including cyanide related incidents. The ERP designates primary responsibility to the Shift Foreman who will work with the Emergency Response Team (ERT). The ERP defines the ERT, provides a Notification Flow Diagram, and provides a list of names and telephone numbers for members of the ERT. The ERP defines the ERT in terms of specially trained employees who are trained to work with hazardous materials. Training records show that employees have participated in 40-hour Hazardous Materials Emergency Response training. The ERP includes call-out procedures and 24-hour contact information for the ERT members. Specific duties and responsibilities of the coordinators and team members are defined in the ERP. The ERP contains a section on “Personnel Responsibilities” that provides the title and role of each individual or group. The Cortez ERP contains a list of emergency response equipment that can be used for an emergency response. All emergency equipment and supplies (oxygen, first aid kits, bag valve mask, and amyl nitrite) are inspected quarterly.

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

- ✔ in full compliance with

The operation is
- □ in substantial compliance with Standard of Practice 7.4
- □ not in compliance with

**Basis for Audit Finding:** The ERP Emergency Phone Numbers include contact numbers for: facility personnel responsible for emergency response, along with the Cyanide Hotline Control Line, Chemtrek, Dupont Carlin Terminal, and Sentinel Transportation (cyanide transporter). Additionally, the ERP lists procedures and contact information for notifying management, emergency response organizations and agencies, and regulatory agencies in the event of an emergency incident, including
the National Response Center, Nevada Division of Emergency, Nevada Department of Environmental Protection, and LEPC.

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

- ✗ in full compliance with
- The operation is
  - □ in substantial compliance with
  - □ not in compliance with

**Basis for Audit Finding:** The ERP includes response and remediation plans that address the appropriate uses and situations for cyanide treatment chemicals. The ERP discusses clean-up of contaminated soils by removing them to designated areas and calls for monitoring of spill sites to validate clean up.

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

- ✗ in full compliance with
- The operation is
  - □ in substantial compliance with
  - □ not in compliance with

**Basis for Audit Finding:** The ERP states that the plan will be reviewed annually or as significant changes in the operation or spill mitigation review warrant. In addition, Cortez conducts mock drills to practice and prepare for emergencies and to provide insight into the effectiveness of the ERP. The mock drill report includes numerous evaluation points including identification of problems and follow-up actions.

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

*Standard of Practice 8.1:* Train workers to understand the hazards associated with cyanide use.

- ✗ in full compliance with
- The operation is
  - □ in substantial compliance with
  - □ not in compliance with
Basis for Audit Finding: All site personnel are trained for cyanide safety as part of the “New Hire Training”. Employees who are assigned to specific areas of operations where cyanide is an integral part of the process are trained on the safe use and handling of cyanide. Training is augmented by regularly scheduled safety meetings. Cortez requires all employees to have a periodic refresher training that includes cyanide training. The training includes an examination on specific cyanide health and safety issues. Cortez maintains records of the training and the safety meetings.

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

- in full compliance with
- in substantial compliance with Standard of Practice 8.2
- not in compliance with

Basis for Audit Finding: Employees assigned to specific areas where cyanide is an integral part of the operation – such as unloading, processing, and maintenance activities - are trained on the safe use and handling of cyanide. The primary training method is on-the-job training and is provided by the Safety Coordinator or individuals who have received training on the processes and equipment - they are experienced workers who are familiar with the equipment and have been previously “signed-off” on the equipment and processes. The employee is instructed on the proper use of the equipment and related safety issues. An employee is required to demonstrate competency prior to working in an area. This is achieved through dialogue with the trainer and by observing the employee. A record is maintained demonstrating the level of training the employee has received. Training manuals and SOPs augment the training. Employees are trained on the equipment and required to demonstrate competency prior to unsupervised assignment to a job. This is documented on the “Skills Requirement Training Record” and the MSHA 5000-23 forms. Cortez uses written examinations, supervisor questioning, and observation to evaluate the effectiveness of the training and the employee’s knowledge of cyanide issues and safety measures. Cortez’ employees receive annual refresher training on cyanide use and hazards. Mock drills are used to evaluate the effectiveness of the training. Cortez maintains records on training for each employee throughout the entire period of their employment. The records include the name of the employee and the trainers, the dates of training; the topics covered, and any test results.

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

- in full compliance with
- in substantial compliance with Standard of Practice 8.3
- Not in compliance with

Cortez Mine
Name of Facility

Signature Lead Auditor
Date

Golder Associates
Basis for Audit Finding: Employees involved in the use and handling of cyanide, such as unloading, mill operations, and maintenance, are trained on the risks and proper handling techniques including decontamination and first aid procedures. These employees receive training on cyanide equipment decontamination, emergency response, and first aid for cyanide release incidents. Emergency Response Coordinators and members of the ERT (First Responders) are trained on the procedures and guidelines outlined in the ERP such as the response to a cyanide spill, release, or emergency. Training also includes the use of the cyanide antidote, SCBA, and other PPE necessary to respond to a cyanide emergency. Cortez has conducted mock drills involving worker exposure to elevated levels of cyanide and environmental releases. Training records are retained documenting the employee training on cyanide use and safety procedures. The records include the name of the employee and the trainers, the date of training; the topics covered, and any test results demonstrating an understanding of the training materials. Off-site responders are familiar with the Emergency Response Plan through Cortez’s involvement with the Lander County LEPC. Cortez has provided a copy of the Emergency Response Plan to the LEPC.


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

☑ in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 9.1
☐ Not in compliance with

Basis for Audit Finding:

Members of Cortez’s management participate in numerous civic activities where they interact with the general public and public officials. The public is provided the opportunity to express interest and concerns about the Cortez operation and the use of cyanide. Parallel to this there have been several newspaper articles discussing the use of cyanide at the Barrick operations, thus providing information to the general public about the use of cyanide at Cortez. Any person or organization can request a visit to the mine site to learn more about the operation. Cortez is in the process of expanding its operation where the Bureau of Land Management has published the availability of a Draft Environmental Impact Statement (DEIS). Along with the notice of the availability of the document, there is the solicitation of comments on the proposed project. This provides stakeholders the opportunity to communicate concerns about the operation including the use of cyanide. Cortez (Barrick) maintains a website that provides a means for stakeholders to contact the company, to communicate issues of concern related to cyanide use and management.
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Standard of Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

X in full compliance with

The operation is                            in substantial compliance with   Standard of Practice 9.2

☐ Not in compliance with

Basis for Audit Finding: Visitors to the Cortez property would be provided with information describing the use of cyanide in the recovery of gold. This would present them the opportunity to ask questions about the use of cyanide; and provide the company the opportunity to describe the use of cyanide at the site. Stakeholders are provided the opportunity to express interest and concerns about the Cortez operation and the use of cyanide. The expansion of the Cortez operation and the public notice soliciting comments on the DEIS provides stakeholders the opportunity to communicate concerns about the operation including the use of cyanide. Additionally, Cortez (Barrick) has a website that serves as a means of contacting the company to communicate issues of concern related to cyanide use and management. (http://www.barrick.com/ContactUS/default.aspx). Cortez (Barrick) publishes a “Barrick North America Responsibility” report were the company explains the use of cyanide and various programs the company has implemented to protect human health and the environment.

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

X in full compliance with

The operation is                            in substantial compliance with   Standard of Practice 9.3

☐ Not in compliance with

Basis for Audit Finding: Cortez has prepared a written description of the use and management of cyanide at the site in the Nevada Water Pollution Control Permit. This is a public document and is complemented by a Fact Sheet that also describes the operation. Cortez provides quarterly reports to the Nevada Division of Environmental Protection (NDEP) that include a summary of any cyanide spills and releases, and environmental performance monitoring. These reports are available to the public by request. Cortez is required to complete MSHA reports that would include any cyanide related worker exposure or death. Barrick provides operational and environmental information in their annual corporate safety and health, environment and social responsibility reports on the internet website, www.Barrick.com.

Cortez Mine                                      Signature Lead Auditor
Name of Facility                                Date
December 31, 2007

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