

# Coeur Rochester, Inc.

## WATER CONSERVATION PLAN

### 1. INTRODUCTION

#### 1.1. General Operations

Coeur Rochester, Inc. (CRI) the operator of the Rochester and Packard mines, is a wholly owned subsidiary of Coeur Mining Incorporated, formerly Coeur d'Alene Mines Corporation of Coeur d'Alene, Idaho. The mines are located on private land controlled by CRI and public land administered by the U.S. Bureau of Land Management, Winnemucca District, Humboldt River Field Office. Primary access to the mine is provided via the Limerick Canyon Road from Interstate Highway 80 (I-80) at the Oreana-Rochester Exit (Exit 119).

The Rochester and Packard mines are open pit mining operations employing cyanide heap leach facilities to historically produce up to approximately 4.8 million ounces of silver and 48,000 ounces of gold annually. Mining methods include typical open pit techniques where ore and waste rock are drilled, blasted, loaded, and hauled to either leach pads (ore) or waste rock RDSs. Production has historically averaged approximately 22,500 tons of ore and 33,000 tons of waste rock per day, although the operation is authorized to crush 40,800 tons of ore per day through the main crushing circuit, approximately 11,000 tons of ore per day through a portable crusher, and 8,200 tons of ore per day through a portable screening plant. Silver and gold are leached from the ore through the application of a weak cyanide solution from a drip irrigation system and the occasional use of "wobbler" sprinklers. Silver and gold are extracted from the process solution using the Merrill-Crowe zinc precipitation method.

Four heap leach facilities have been constructed. The Stage I HLP was actively leached until 1998 and is presently in the closure process. The Stage II HLP is projected to continue being leached through 2014, the Stage III HLP is actively being stacked with fresh ore with leaching expected to continue for another seven to nine years, and the Stage IV HLP is also actively being stacked with leaching expected to continue for another three to five years.

#### 1.2. Water Use and Conveyance

Mine and ore processing operations require an average of 400,000 gallons of fresh water per day (gpd), which equates to approximately 276 gpm or 445 acre feet per annum (afa). These operations include: ore crushing; non-potable water use in the administration building, warehouse and maintenance shop; road dust suppression; drill rig water; maintaining the fire water supply; and the addition of fresh makeup water to the process fluid management system to maintain the proper solution balance for heap leaching and process plant operations.

Fresh water for mine and ore processing operations is obtained from three production wells, PW-1a, PW-2a, and PW-4a. The approved annual use rate for each of these wells is 1,926 afa (628,202,000 gallons). As stipulated by the water rights permits, the combined

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annual fresh water use from all permitted groundwater sources cannot exceed 628 million gallons per year (1,926.38 afa). Based on the current needs, an estimated 1,482 afa of permitted fresh water is available for future mine and ore processing operations.

Fresh water for previous mine operations (road watering, drilling, blasting) at the Packard Mine was obtained from the Packard production well. Water from the Packard production well is only utilized for mine-related operations within the Packard mine area. Annual allowable use from this well is 161 afa (52,250,000 gallons).

Water is pumped from the three Rochester production wells to water tanks TW-1 and TW-2. The TW-1 tank has a capacity of 145,000 gallons and is located southeast of the on-site laboratory. The water from the TW-1 tank is distributed to the crushing facilities, the maintenance shop, the warehouse building, the process facilities, and the administration building for sanitary facilities.

The TW-2 tank has a capacity of 440,000 gallons and supplies the fire water system, as well as supplying mine water trucks with water for dust suppression on roads and drill rigs with water for drilling purposes. This tank is located by the large diesel fuel island above the maintenance shop by the Rochester pit.

Potable water is obtained from PW-3a and pumped to a water treatment plant and potable water tank for distribution to buildings. The potable water system is located near the truck shop. The potable water system is permitted by the NDEP.

Table 1 below presents annual pumpage for the preceding ten years.

**Table 1: Annual Pumpage**

CY2003	91.5 mg <sup>1</sup>
CY2004	137.94 mg <sup>1</sup>
CY2005	149.65 mg <sup>1</sup>
CY2006	126.40 mg <sup>1</sup>
CY2007	122.90 mg <sup>1</sup>
CY2008	47.0 mg <sup>1,2</sup>
CY2009	27.3 mg <sup>1,2</sup>
CY2010	29.4 mg <sup>1,2</sup>
CY2011	86.64 mg <sup>1</sup>
CY2012	115.98 mg <sup>1</sup>
CY2013	180.61 mg <sup>1</sup>

<sup>1</sup> mg = million gallons; <sup>2</sup> = 2008 through 2010 active mining was shut-down, residual leaching only

## **2. CONSERVATION PLAN PROVISIONS**

### **2.1. Water conservation education**

Each CRI employee and contractor is required by Federal Mine Safety & Health Administration (MSHA) regulations to receive at least eight hours of safety refresher training annually. In conjunction with this annual refresher training (ART), CRI also provides one hour of environmental awareness information. Water conservation topics are presented to

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employees and contractors in conjunction with the environmental awareness unit. Topics covered include those specific to conservation procedures at CRI such as controlling evaporative losses, water system maintenance and use, etc.; as well as broader cultural topics such as pumpage from remote and isolated groundwater basins to support growing populations in desert areas in the American West.

Broader cultural topics also include information on how each employee and contractor may, in his or her personal life, conserve home water usage by installation of low-flow fixtures, xeriscape residential landscaping, etc.

## **2.2. Water conservation measures to meet the needs of the service area**

CRI's public water system is actually a privately-owned non-community non-transient (NCNT) water system providing industrial process water and human contact water to support precious metals mining and processing in a remote location of rural Pershing County, Nevada. No specific conservation measures are required by law other than maintenance of CRI as a zero-discharge facility under Nevada Division of Environmental Protection Bureau of Mining Regulation & Reclamation regulations.

## **2.3. Water conservation management**

- 2.3.1. CRI employees and contractors are instructed to identify and reduce leakage from water storage and conveyance structures in the course of their periodic workplace inspections.
- 2.3.2. CRI employees and contractors are instructed in expected fluid flow parameters such that inaccuracies in water meters can be easily identified.
- 2.3.3. High pressure in water supplies is inherent in the gravity-flow nature of CRI's water system; and necessary to the overall industrial process. However, employees and contractors are instructed to observe leakage from storage and conveyance structures that may result from fluid pressure through loose connectors in the course of their periodic workplace inspections and report and repair the leakage.
- 2.3.4. Inherent in the CRI industrial process is the recirculation (reuse) of process water effluent.
- 2.3.5. CRI uses lignin sulfonate as a dust suppressant on the roads to decrease the amount of water needed for dust suppression.
- 2.3.6. There are no landscaped areas that require irrigation on the mine site.

## **2.4. Potable water contingency plan for drought conditions**

CRI's potable water supply well is completed deep into the Black Ridge Fault aquifer system. It is unlikely that a supply of potable water would not be available during drought conditions. Despite drought conditions occurring occasionally during the history of the facility, CRI has never experienced unavailable potable water due to a lowering of the water table below the level of the water production wells.

In the event that CRI experiences loss of water due to drought conditions, the emergency contingency plan for the potable water system will be to haul water to the site from an approved potable water source. Only water haulers that meet the requirements set forth in

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NAC 445.67275 and 445.6731, are eligible to haul potable water to the Coeur Rochester mine site. Storage tanks can only be filled at approved connection points that are easily accessible to the water hauler. Connections must also be placed on the discharge side of all potable water distribution pumps to allow pipes and fittings to be flushed. This eliminates the pooling of stagnant water during periods of inactivity.

All appropriate personnel, such as the plant operator, the process maintenance department, the emergency response coordinator, the environmental department, the BSDW, etc. will be informed of the emergency and notified of the steps that need to be taken until service is restored. In addition, employees will be informed if needed by posting notices at bathroom facilities, break rooms, etc. and by distributing an e-mail notification. These measures will only be taken if a resolution to the emergency is not anticipated before the depletion of the finished water storage supply. Water will be hauled and pumped into the potable water tank until normal operation of the water system is restored.

**2.5. Schedule for water conservation plan implementation**

CRI's initial water conservation plan has been in-place as a part of basic operating procedures since CRI commenced operations in 1986. Individual components of the formalized plan identified herein have been introduced and implemented over the years of operation of the facility.

**2.6. Water conservation plan review and evaluation of effectiveness**

NRS 540.131.4(c) requires conservation plan updates every five years. The next update for CRI's conservation plan will be completed by June 30, 2019.

CRI's water appropriation permits require periodic monitoring of water pumpage and consumption using instantaneous and totalizing flow meters. Monthly totals of water production and consumption are reported to the Nevada Division of Water Resources (NDWR) as required on a quarterly basis. Monthly or quarterly maintenance of pumpage and consumption records provides the opportunity for periodic and frequent review of the effectiveness of the conservation plan. Sharp increases in pumpage unrelated to increased demand for make-up water would signal a breakdown in a component(s) of the conservation plan.

**2.7. Estimated volume of water conserved**

CRI is unable to estimate the amount of water that will be conserved each year as a result of the adoption of the plan and stated in terms of gallons of water per person per day (NRS 540.141.1(g)). CRI's make-up water needs are wholly dependent on reductions in process fluid inventory due to drought conditions and/or evaporative losses and use of potable water by employees. CRI is unable to predict annual climatic condition changes; and the number of employees is anticipated to remain around 300 until shut-down or further expansion occurs.

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**3. FEASIBILITY OF CHARGING VARIABLE RATES TO ENCOURAGE WATER CONSERVATION**

The requirement of NRS 540.141.2 does not apply to CRI. CRI's public water system is actually a privately-owned non-community non-transient (NCNT) water system providing industrial process water and human contact water to support precious metals mining and processing in a remote location of rural Pershing County, Nevada. CRI does not charge itself for the water it produces. However, as a private enterprise, CRI has great interest in conserving water as reduction in the amount of water pumped translates into cost savings to the Company from reduced electrical consumption, labor and maintenance.

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