



February 15, 2008

**LICENSE SUA-1341
DOCKET NO. 40-8502**

U. S. Nuclear Regulatory Commission
Mr. Keith I. McConnell, Deputy Director
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management & Environmental Protection
Office of Federal & State Materials &
Environmental Management Programs
Mail Stop T-8 F 5
11545 Rockville Pike
Rockville, MD 20852-2738

RE: Submittal of the 2007 Annual Effluent and Monitoring Report

Dear Mr. McConnell:

Pursuant to License Sections 12.1 And 12.6, two copies are enclosed of COGEMA Mining Inc.'s *2007 Annual Effluent and Monitoring Report*. Note that the report also serves as the *Semi-Annual Monitoring Report* to the Wyoming Department of Environmental Quality for the second half of 2007.

Please contact me if you have any questions regarding this report.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Larry Arbogast'.

Larry Arbogast
Radiation Safety Officer

cc: D. Blair Spitzberg - NRC, Region IV
Don McKenzie - WDEQ, Sheridan WY.
T. Hardgrove - COGEMA

Cogema Mining Inc.
Irigaray and Christensen Ranch Projects

2007 ANNUAL EFFLUENT AND MONITORING REPORT (NRC)
and
SEMI-ANNUAL MONITORING REPORT (WDEQ)

1.0 INTRODUCTION

In accordance with Sections 12.1 and 12.6 of the Nuclear Regulatory Commission (NRC) Source License No. SUA-1341, COGEMA Mining Inc. (COGEMA) hereby submits the 2007 Annual Effluent and Monitoring Report. This document summarizes the required operational and environmental monitoring conducted at the Irigaray (IR) and Christensen Ranch (CR) projects from January 1 through December 31, 2007.

The analytical data from the monitor wells for the period of July 1 through December 31, 2007 included in this document is also a requirement by the Wyoming Department of Environmental Quality (WDEQ), Permit to Mine No. 478. However, for the sake of continuity, the entire year's data is provided.

2.0 OPERATIONAL SUMMARIES

2.1 Irigaray (IR) Project

Decommissioning activities at Irigaray during 2007 included the following:

- Six hundred ninety six (696) wells were plugged and abandoned by the approved WDEQ method. A summary of the data is located in Table 5 of Appendix 1
- A small amount of equipment within the older portion of the Irigaray plant was removed, decontaminated or sent to Shirley Basin for disposal.
- Equipment storage areas were cleaned, with much of the materials disposed of at the Shirley Basin disposal facility.

Other activities included:

- The wellfields and plant area were not sprayed for weed control during 2007. Two different weed spraying contractors were hired but neither of them came to the site.
- When no work is ongoing at the IR site, the facilities are secured with door locks and locking gates at all outer perimeter access points. The Christensen staff conducts security checks daily. A General Location Map showing the layout of the IR project site is provided in Appendix 5 of this report.

2.2 Christensen Ranch Project

Mining activities ceased at CR in June 2000. Only groundwater restoration, project decommissioning and related activities have since been conducted.

2.2.1 Operational Activities

- As with IR, weed control at CR was not done during 2007, for reasons stated in section 2.0.
- In the C.R. plant some decommissioning was done of unused pumps, piping and one tank. This equipment was either decontaminated or sent to Shirley Basin for disposal.
- Refurbishment of the four sand filters in the C.R. plant was done during 2007.
- Sampling of monitor wells in Mine Units 2 through 6 continued, as discussed in Section 3 of this report.

A General Location Map showing the layout of the CR project site is provided in Appendix 5 of this report.

3.0 OPERATIONAL MONITORING

3.1 Groundwater Volumes Injected and Recovered

No injection of ground water was done during 2007. There was some Recovery of ground water done in 2007 for excursion control. On May 7, 2007 one recovery well was turned on in M.U.5 to control the excursion of 5MW 48 the control well was shut off on May 23, 2007 with a total of 288,000 gals. recovered and put in pond 4 at the C.R. site. On September 11, 2007 a recovery well in M.U. 4 was turned on to control the excursion of 4MW 1 the control well was shut off on September 27, 2007 with a total of 276,000 gals. recovered and put in CR pond 2.

3.2 Injection Manifold Pressures

Injection manifold pressures at the CR project are limited to 140 psi during wellfield operations and 168 psi during maintenance tasks, as per License condition 11.1. Condition 11.1 requires that the injection manifold pressures be recorded daily. COGEMA uses continuous chart recorders on the injection manifolds, which record pressure 24 hours per day. The results are tabulated in graphical format and retained as permanent record at the CR offices. There are no injection records for 2007.

3.3 Waste Water Control

3.3.1 Evaporation Ponds

Weekly inspections are conducted on all active evaporation ponds at the IR site, and the four evaporation ponds and one permeate pond at CR. During 2007 no freeboard limits were exceeded, and no leaks were detected.

Sampling of all operative ponds is conducted on a quarterly basis and the sample analytical data are provided in Table 1 of Appendix 1. At the IR site for the first quarter of 2007 ponds B & RB were not sampled because of a spring blizzard that kept employees from the site for four days and

drifted snow three to four feet deep over the ponds.

3.3.2 Disposal Wells

Two Class I injection wells are located at CR and are licensed under the WDEQ Underground Injection Control Permit Number UIC 00-340. During 2007 a total of (0) gallons of restoration brine was injected into disposal well Cogema DW No. 1, and (0) gallons were injected into disposal well Christensen No. 18-3. Required quarterly reports were submitted to the WDEQ.

As required by UIC Permit 00-340 section I, paragraph 4, "*COGEMA shall shut one of the wells covered by this permit in annually for a period of time long enough to observe a valid pressure falloff curve. Each year, a well which was not tested in the previous year shall be tested, until all wells are tested in sequence.*" To comply with this regulation, COGEMA Christensen DW No. 1 was tested on September 6, 2007 by Petrotek Engineering of Littleton, Colorado. Petrotek performed a static bottom hole pressure survey, which indicated no concerns regarding the reservoir properties of Christensen DW No 1.

3.4 Well Integrity Testing

Well mechanical integrity testing (MIT) results are reported to the WDEQ by phone quarterly and in a written report semi-annually. A list of 2007 (MIT) results are given in Table 4 of Appendix 1. A total of four hundred fifty five (455) wells were tested during 2007, with thirty (30) wells failing the test.

3.5 Chemical Inventory

A small amount of hydrochloric acid was stored at both the IR and CR sites during 2007. The acid is used for decontamination purposes. Other on site chemicals included liquid propane gas for heating, diesel fuel, and gasoline fuel.

4.0 ENVIRONMENTAL MONITORING

The environmental monitoring locations are given on the Environmental Monitoring Station Locations Map in Appendix 5. The layouts of each site, including the locations of monitor/trend wells, ponds, surface discharge points and disposal wells are given in the General Location Map, also located in Appendix 5.

4.1 Groundwater Monitoring

Groundwater quality at both projects is monitored by sampling 327 monitor and/or trend wells surrounding and/or within the wellfields. Sampling frequency varies for these wells. Monitor wells on excursion status are sampled weekly. Monitor wells not on excursion and trend wells are sampled quarterly during the post-restoration and stabilization phase and thereafter. Sample analytical results along with water level elevations for 2007 are provided in Appendix 2. Seven monitor wells surrounding the 5I7 and USMT sites at IR are sampled annually and reported in the WDEQ Annual Report submitted in August of each calendar year. Also all perimeter, internal monitor wells and baseline wells were sampled during 2007.

4.1.1 Wells on Excursion Status

One well continued on excursion status during 2007. The well is Christensen well 5MW66, located adjacent to Mine Unit 5. On July 21, 2004 this well exceeded all three of its upper control limits (UCL) during its routine quarterly sampling (MU 5 has been restored and stabilization monitoring

completed). To avoid reactivation of wells within this unit, COGEMA requested, and was granted, special sampling and evaluation parameters until the excursion could be fully evaluated. Essentially, COGEMA's plan for the well is to continue monitoring 5MW66 on a quarterly basis until the MU 5 restoration package is submitted to and approved by the WDEQ. Updates of the well will be submitted to the WDEQ and NRC quarterly. The final status of 5MW66 would then be addressed in the agency approval of the restoration for MU 5.

The following Table provides the sampling data during the 2007 monitoring period:

5MW-66 Christensen Ranch

Date	Chloride mg/l UCL 22.7	Conductivity umhos/cm UCL 1004	Alkalinity mg/l UCL 134.3	pH	U ₃ O ₈	Water Level Elevation
1/3/07	33.9	1256	284.4	7.8	< 0.4	4619.5
4/18/07	41.8	1521	389.6	7.8	< 0.4	4624.7
7/3/07	34.6	1410	332.	7.4	< 0.4	4626.5
10/29/07	39.	1463	378.	7.5	< 0.4	4629.3

4.1.2

Two wells went on excursion status during 2007. The excursions of 5MW 48 and 4MW 1 were reported to the WDEQ and NRC with all data and termination of the excursions. They will not be duplicated in this report.

4.1.3 Regional Ranch Wells

Annual groundwater samples were collected from four ranch wells near the CR project and one ranch well near IR. The samples were analyzed for Uranium along with Thorium-230, Radium-226, Lead-210 and Polonium-210. The resulting data are given in Table 2 of Appendix 1. All radionuclides were at very low or non-detectable (ND) concentrations, as is typical. No negative trends in the data were noted.

4.2 Surface Water Monitoring

Willow Creek is the only source of surface water present within and adjacent to the permit boundaries of both the IR and CR projects. Willow Creek is an intermittent stream and is sampled annually in the spring, when flow is typically available. Three sample locations are designated at both project sites; upstream, downstream and within the permit boundary. The Powder River is also sampled annually at the Brubaker Ranch, which is approximately 4.5 miles downstream from its confluence with Willow Creek. Analytical data for both chemical and radionuclide parameters are provided in Table 3 of Appendix 1. All radionuclides were low or ND, and no exceedances of NRC 10 CFR 20, Appendix B effluent limits occurred. No negative trends in this data were noted.

4.3 Surface Discharge Monitoring

A surface discharge outfall was available during the report period at the Christensen Ranch for disposal of treated groundwater generated by restoration activities. This outfall is licensed by the U.S. Environmental Protection Agency (EPA) under a National Pollutant Discharge Elimination

System (NPDES) permit issued by the WDEQ. However, no water was discharged at the CR site (Permit No. WY0033642, discharge 002) during this report period.

4.4 Spill and Leak Reports

There were no reportable spills during 2007.

4.5 Air Monitoring

4.5.1 Radon

Environmental monitoring of radon was eliminated beginning in 2002, as per the NRC approved Decommissioning Plan.

4.5.2 Dryer Stack Emissions

The yellowcake dryer did not operate in 2007.

4.5.3 Airborne Radionuclides

During dryer operations, continuous airborne radionuclide sampling is required at the five specified environmental air sampling locations at the IR project. No drying was conducted in 2007.

4.6 Gamma Radiation Monitoring

Environmental monitoring of gamma radiation was eliminated beginning in 2002, as per the NRC approved Decommissioning Plan.

5.0 OTHER INFORMATION REQUIRED BY SECTION 12.6 - NRC LICENSE

5.1 ALARA Audit

The 2007 As Low As Reasonably Achievable (ALARA) audit report was completed on February 11, 2008 by Tom Hardgrove, the RSO for Pathfinder Mines Corporation. His audit report is found in Appendix 4. No increasing dose trends or other concerns were noted.

5.2 Land Use Survey

The primary use of surrounding lands at both IR and CR projects continues to be rural sheep and cattle ranching. The livestock graze these lands, but are fenced-out of areas such as the evaporation ponds, plant sites and wellfields.

The secondary use of surrounding lands continues to be petroleum production from wells dispersed throughout the region. The closest oil well at the CR project is located approximately one third of a mile west of the CR plant. The closest oil well at the IR site is located approximately one half mile east of the PU 9 wellfield. To our knowledge, no new oil wells have been drilled in close proximity to either project during 2007.

Over the past several years (2001 - 2007) some additional interest has developed in the immediate area of the CR project in the development of coal bed methane (CBM) gas. Several CBM wells were drilled within a half-mile of CR MU 5 & 6 during 2002. At present these wells are capped and awaiting additional evaluation and pipeline installation before development continues. No CBM wells were drilled in close proximity to either project during 2007.

The nearest residence to the IR site is 4 miles to the north (the Brubaker ranch) and the nearest residence to CR is the John Christensen ranch located 3 miles southeast of the CR plant site. Both are ranch housing with a population of 5 or less. No new residences have been added within 5 miles of either site since the regional demography was evaluated in Section 2.3.1 of the 1996 License Renewal Application.

5.3 2007 Site Inspections

5.3.1

On May 2, 2007 a Wyoming State Mine Inspection was conducted at the IR & CR sites by Mr. Cary Ashley, Deputy Inspector of Mines, and of the contractor working for Cogema, Mike Everhart Mine Services, No violations of state mine regulations or corrective actions were cited. Also Cogema had another contractor on site that day at the IR site it was Steel Structures Mr. Ashley inspected there truck and tools and found three violations. These items were taken care of before they returned to the site again.

5.3.2

On September 4, 2007 Mr. Cary Ashley, Deputy Inspector of Mines inspected the Irigaray and Christensen sites; one violation was cited for one fire extinguisher that was not inspected for the month. On the same inspection Mr. Ashley inspected Mike Everhart Mine Services that was working for Cogema. They had two violations, one of which was abated. The other one was for a fire extinguisher that was on a water truck it had not been inspected for the month.

5.3.3

On June 26, 2007 the NRC was at the IR & CR sites for a three day inspection. The inspectors present were Linda M. Gersey and Robert J. Evans. Cogema had two violations from this inspection. The first was for Drying more than 50,000 lbs. of yellowcake annually in 2005. The second was for having an expired waste disposal agreement. These two violations were brought in to full compliance by letter dated August 20, 2007.

5.3.4

On October 24, 2007 Mr. Glenn Mooney of the WDEQ, held the annual inspection of the Irigaray and Christensen sites – both sites were found to be in compliance.

5.4 SERP Summary

COGEMA's Safety and Environmental Review Panel (SERP) [NRC License Condition 9.4 (C)] was not called upon for any reviews during 2007.