



# Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

4D-850Z

July 6, 2010

Mr. Jon Winters  
Energy Metals Corporation  
Suite 260  
907 N. Poplar Street  
Casper, WY 82601

**RE: Irigaray-Christensen Operations 2009 Annual Inspection Report, Permit No. 478**

Dear Mr. Winters:

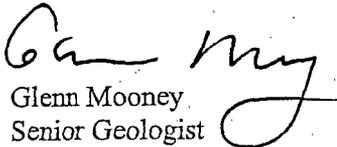
Enclosed is a copy of the report on the 2009 Annual Inspection of the Irigaray-Christensen ISL Operations. This inspection was conducted November 18, 2009, in the presence of Larry Arbogast.

A copy of this report will be placed in the permanent inspection file for the Irigaray-Christensen ISL Operations, as will any written comments you may have.

The cooperation and assistance of Mr. Arbogast is greatly appreciated.

Please feel free to call if you have any questions.

Sincerely,

  
Glenn Mooney  
Senior Geologist

\gm

Attachment

cc: Cheyenne file w/attach.  
NRC-MD w/attach.

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## ANNUAL INSPECTION REPORT

**Subject:** Cogema Mining Inc.'s (now Uranium One, USA) Irigaray and Christensen In Situ Uranium Operations

**Permit No.:** 478

**Inspectors:** <sup>GM</sup> Glenn Mooney, Kris Thompson, Land Quality Division; Carrie Steinhorst, Water Quality Division

**Person Contacted:** Larry Arbogast, Cogema Mining, Inc.

**Date of Inspection:** November 18, 2009

### Introduction

Mining has been completed at both the Irigaray and Christensen operations. With an increase in uranium prices, the staff at Cogema is planning for a restart of mining. The property has been sold to Uranium One, USA. Permit No. 478 was transferred to Uranium One, USA, Inc. on January 25, 2010.

### Irigaray Operations

At Irigaray restoration of Wellfield Units 1 through 9 has been completed and acceptance of the groundwater restoration effect was granted on November 1, 2005.

In Units 1 through 6 all wells have been sealed and abandoned and the wellheads removed. The surface piping was removed a number of years ago. The restoration building is currently being used for storage.

In Units 7, 8 and 9, the well field buildings, buried trunklines and manholes leading to the buried trunklines have been removed (Photo No. 1). The buried pipelines leading to each well in Unit 7 have now been removed as well. A few wellheads remain to mark the locations of the buried piping which still remains in the ground in Units 8 and 9. Some power poles remain, but others have been removed.

Mr. Arbogast said there were no current plans to retopsoil Mine Units 6-9 where the topsoil was salvaged and stockpiled over 30 years ago.

Most of the plant building has been gutted with the exception of the equipment needed to strip the resin and precipitate the yellowcake which still remains. The dryer and dry-pack units also still remain and are intact. The work on the floor of the newer annex is complete. Mr. Arbogast said about 80% of the floor had been removed and sent to the licensed disposal area at the Pathfinder mill in Shirley Basin.

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Work is set to resume refurbishing the older part of the plant building once winter sets in. The floor here is badly cracked and will require extensive repairs.

Most of the liners of the evaporation ponds at Irigaray have been removed. Only Restoration Pond RB and Plant Pond B remain with liners, each containing about two feet of water. The sludge and liners have been removed from Ponds A, C, D, E and RA. When the mine is restarted, the evaporation ponds would be fitted with new liners.

The sites of the 5I7 evaporation ponds and 5I7 well field were reviewed. The sites have been reclaimed and reseeded and little evidence of them remains.

### **Christensen Operations**

Mining was completed at Christensen in June 2000. The dismally low price for uranium at that time led COGEMA to suspend construction of Mining Units 7 and 8 several years ago, as well as all other future mining.

All groundwater restoration and stabilization has been completed, according to the 2006-2007 Annual Report. A report on groundwater restoration has been received and is awaiting review.

The badly cracked floor in the plant building has been repaired and sealed. The plant equipment has been refurbished in anticipation of restart. The control room has been remodeled.

Five reverse osmosis R/O units remain in the plant building.

All four of the lined evaporation ponds remain and all contain some water. Mr. Arbogast said no leaks had occurred in the ponds this past year. Some of the water in the lined ponds was generated from backwashing the sand filters. The unlined permeate pond was dry.

A well field data package for Unit 7 was received in June 2007 and is currently under review. Unit 7 remains unchanged as it has for the past several years. Some of the wells were completed in preparation for mining of the unit, but work was abruptly halted in mid-construction and no mining was ever begun there. Stacks of PVC well casing and the large black polyethylene trunkline remain on-site.

### **Deep Disposal Wells**

Neither of the deep disposal wells was in use. The injection pressure for DDW-1 was at 0 psi. and the annulus pressure was noted about 400 psi.

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**Mechanical Integrity Testing**

A mechanical integrity test (MIT) of Christensen Ranch Unit 6 well 6AV44-1 was observed. The test pressure used on this well reached 168 psi. and passed. Mr. Arbogast said many wells that fail do so at about 100 psi. He said wells where hydrogen sulfide gas was used during restoration operations often present problems with the packers slipping.

He said water for the MIT's came from nearby production wells when production and injection wells were to be tested. For monitor wells, potable water from the plant well was used.

Mr. Arbogast said plans were to finish MITs by Christmas with some 482 wells needing to be tested. About eight wells per day are tested.

**Vegetation**

The grass cover in Christensen Ranch Units 2, 3, 4, 5, 6 and 7 was generally good. The isolated and undeveloped Unit 8 was not inspected.

Mr. Arbogast said COGEMA had an active and expensive weed spraying program. Weeds including Canada and musk thistles had been sprayed this past summer, along with some tamarisk found next to the Christensen Ranch permeate ponds.

**Archeological Site**

The archeological site in Unit 6 was reviewed. It appeared undisturbed. The fence was in good repair.

**Signs**

Permit identification signs carrying the required information were in place along the access roads to both the Irigaray and Christensen Ranch plant areas. Mr. Arbogast noted that calves had eaten some of the north Irigaray entrance identification sign and that it would be repaired.

Topsoil identification signs were in place on all topsoil stockpiles seen.

**Bond**

The bond for Permit No. 478 is Letter of Credit No. BMCH278567OS written in the amount of \$9,714,299.00 by the Bank of Montreal, Chicago, Illinois. The necessary bond amount will be reviewed during review of the past several Annual Reports to begin soon.

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**Conclusions**

The inspection did not find any items out of compliance.

Attachments: photo page

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**Cogema Mining Co. (now Uranium One, USA)**  
**Irigaray-Christensen Ranch Project**  
**Permit No. 478**  
**2009 Annual Inspect**



**Photo No. 1** Looking west to north across Irigaray Wellfield Units 8 and 9. All of the wellfield buildings have been removed along with all underground piping and wiring. A few well heads remain for orientation purposes, but the well casings themselves have been cemented up. Topsoil was salvaged from these wellfields over 30 years ago and stockpiled. The Irigaray plant buildings are visible in the center distance.

Photos for panorama taken November 18, 2009, by Glenn Mooney