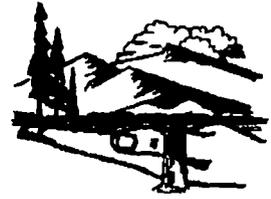




Department of Environmental Quality

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



Matthew H. Mead, Governor

Todd Parfitt, Director

CERTIFIED MAIL, RETURN RECEIPT REQUESTED : 7012 1640 0000 8427 5670

March 21, 2013

Mr. Ken Garoutte
Cameco Resources, Inc.
PO Box 1210
Glenrock, WY 82637

**Subject: Concurrence to Plug and Abandon Excursion Well FM-009
Request for Additional Information to Evaluate F-11 Header House Area
Request for Information Failed MITs in Permitted Monitor Wells
Notice of Violation Docket No. 5131-13, Permit 603, Cameco Resources**

Dear Mr. Garoutte:

The Land Quality Division (LQD) has reviewed the request to plug and abandon monitor well FM-009 as proposed during our meeting on March 15, 2013. The proposal was discussed as a result of the referenced NOV. LQD concurs with the proposal and recommends the well be plugged as soon as possible. Please note that a Non-significant permit revision will be required to replace Well FM-009 with Well FM-009A. The enclosed review includes requirements for the submittal which should be provided **within 60 days of receipt of this letter**. CR will also need to provide documentation of the well status change in the next monthly and quarterly Excursion reports.

Through the meeting discussions and the PowerPoint presentation provided by email to LQD subsequent to the meeting, the LQD has identified additional information necessary to evaluate the status of the F-11 Header House area. Information related to the historic restoration research project discovered in the area of header house FM-11 should be fully disclosed as it is unraveled through file research by your staff. It is requested that updates be provided to LQD at a minimum of **once a month**. In addition, the casing leak investigation (Administrative Order, Docket No. 3211-00) should be expanded to include the F-11 Header House area, with **biweekly updates** provided to LQD.

Finally, CR will be required to conduct a records investigation to identify all failed monitor well MITs where action has not occurred to plug or repair the wells. A tabulation of the information should be provided to the LQD **within 60 days of receipt of this letter**. LQD and CR will need to work together to decide how best to proceed with each instance of a failed MIT that has not been adequately addressed.

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ADMIN/OUTREACH (307) 777-7758 FAX 777-7682	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
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The LQD understands the effort required to investigate the associated issues with Header House F-11 and appreciates the attentiveness from you and your staff to provide information to the LQD for an understanding of the historical legacy issues as well as the ongoing mining and restoration activities. The deadlines assigned with this letter can be adjusted should CR need additional time. Please contact me at pam.rothwell@wyo.gov or 777-7048 to discuss adjustments to the recommended deadlines or if you have additional questions.

Sincerely,

A handwritten signature in cursive script that reads "Pam Rothwell".

Pam Rothwell
District 1 Assistant Supervisor
Land Quality Division

cc: Cameco Resources, Cheyenne, WY
Doug Mandeville, NRC
TFN 3 2/290, Casing Leak Administrative Order
Excursion Status Reports Volume, Tab 35, Permit 603

Review of Request for Plug and Abandonment of Well FM-009

Notice of Violation (NOV) Docket No. 5131-13

Permit 603, Cameco Resources (CR)

BACKGROUND

The Land Quality Division (LQD) issued the referenced NOV on March 5, 2013 primarily due to the lack of operational control in MU-F. The LQD sought information from CR to confirm the lack of control through a Letter of Conference and Conciliation (LCC) issued on October 11, 2012 due to an elevated concern that Well FM-009 was on excursion in the area where control was deficient. The response to the LCC confirmed the operational control deficiency resulting in issuance of an NOV. However, on March 15, 2013, CR presented information during a meeting in Cheyenne, suggesting that Well FM-009 was on excursion as a result of well conditions and not due to the migration of fluids from the well patterns of header house F-11. CR noted that an MIT was performed in March 2011 on Well FM-009 because they noted the water level was rising in the well. The test showed that at least two intervals failed in this well; the surficial (0-20') and a deeper interval. The deeper interval may be what's described as a spiral groove in the casing from 485-487 feet bgs which was identified by using a downhole camera. This interval appears to correlate with an approximately 35 foot thick sand body. Information regarding the actions taken when the MIT was confirmed was unknown at the time of the meeting.

CR installed Well FM-009A in October 2012 approximately 13 feet from Well FM-009 to evaluate the conditions of the aquifer near the excursion well. Well FM-009A has not shown evidence of an excursion. CR explained that as a result of the up-hole casing breaks poor water quality from upper aquifers is entering the well and appears to be contaminating the water quality of the production zone sample thus giving the indication of an excursion of Well FM-009. Because Well FM-009A has not shown evidence of contamination whereby the production zone interval is leaking contaminated groundwater from Well FM-009 (approximately 13 feet) or from the wellfield pattern area, CR suggests that the sample interval at Well FM-009 is falsely indicating an excursion from the wellfield pattern production zone. However, contaminated water in the sample interval is an excursion with potential to contaminate the production aquifer outside the monitor well ring, not as a result of mining fluids but as the result of the up-hole contaminated groundwater. CR requests the well be plugged and abandoned as soon as possible.

REVIEW

CR proposes abandoning Well FM-009 and replacing it with Well FM-009A as a monitor well. A review of the evidence presented by CR is compelling. Based on the investigation and evidence presented, the LQD concurs with the need to plug Well FM-009. However, the following items must be considered in the monitor well change to use Well FM-009A:

- 1 A Non-significant revision is required to replace Well FM-009 with Well FM-009A including a map showing the location of the new well. Provide a brief discussion in the

text change for the submittal that explains the reason for the change. The revision should be provided to LQD **within 60 days** of receipt of this review. **(PCR)**

- 2 When FM-009A is brought on-line to replace FM-009, none of the regularly scheduled sampling events should be missed in the transition. Please indicate this commitment in the revision. **(SI/PCR)**
- 3 Well FM-009A will have the same UCL's as Well FM-009. Please indicate this commitment in the revision. Review of the baseline water quality for Well FM-009 shows that the water quality in Well FM-009A is slightly better than Well FM-009. **(SI/PCR)**
- 4 A baseline water level is needed for Well FM-009A. Because the current water level has been affected by the excursion remediation pumping, the baseline water level for Well FM-009 should be used. Please indicate this commitment in the revision. **(SI/PCR)**
- 5 During the March 15, 2013 meeting with LQD, CR disclosed the failed MIT at Well FM-009 that occurred in March 2011. It is requested that CR investigate records for all failed MITs in monitor wells where no action to plug or repair the wells has occurred. Chapter 11, Section 8(c) states, "*If a well lacks mechanical integrity, repair or plugging of the well is required to prevent the movement of fluid into unauthorized zones or onto the surface caused by the lack of mechanical integrity. Repair or plugging of the well must be completed within 120 days of the testing which indicates the well lacks mechanical integrity...*"

A tabulated summary identifying all monitor wells where no action has occurred following failed MITs should be completed for Permits 603 and 633 and reported to LQD **within 60 days of this review**. LQD and CR will need to discuss the disclosed information with an evaluation of each well status subsequent to the submittal and prior to proceeding with plugging or repairing the wells. **(PCR)**

- 6 During the meeting on March 15, 2013, CR disclosed a potential historic restoration research project that may have been the cause of the failure in Well FM-009. The information has only recently been discovered by CR staff. LQD understands that CR intends to fully review the file information to better understand the impacts on the current status of the wellfield. It is expected that CR will fully disclose the information to the LQD as it becomes available. **Please provide monthly updates of the investigation.** **(PCR)**
- 7 The resolution for the "confirmed" excursion at Well FM-009 must be documented in the **next monthly and quarterly excursion reports** with a reference to the Letter of Conference and Conciliation, NOV Docket No. 5131-13, the meeting discussion on March 15, 2013 and this review providing concurrence to plug the well and reassign Well FM-009A as the replacement monitor well. **(PCR)**

- 8 CR has proposed expanding the Casing Leak Investigation (CLI) to include the area of Header House F-11 under the Administrative Order Docket No. 3211-00. The Administrative Order item 1(a) states, "*Power Resources Inc. (PRI) will provide within 60 days, a compliance schedule to the Land Quality Division. The schedule will include: (a) A list of wells suspected of having casing breaks, joint failures, or otherwise compromised mechanical integrity, in the C, E, and F-Wellfields and a schedule for testing and either repairing or abandoning these wells;*" Investigation of the F-11 HH pattern area is therefore allowed under the Order.

It is noted that the recent CLI quarterly update does not include wells identified with MIT failures in the HH F-11 area. It is unknown whether an investigation has been conducted in this area of the wellfield. The apparent contamination of shallow aquifers in Well FM-009, implies an extensive migration of fluid leakage from HH-F11 pattern wells, CR must conduct extensive investigation of this area under the Administrative Order. Please provide updates of progress toward the investigation in **biweekly email or conference call updates to LQD. (PCR)**

NOTES:

- The MIT showed that at least two intervals failed in Well FM-009, the surficial (0-20 feet) and the deeper interval (485-487 feet). Either of these intervals or unidentified intervals at the joints could be contributing poorer quality water to the well. **(SI)**
- The wells associated with Header House F-11 are isolated from the rest of the F-Wellfield and therefore, would be the most logical source for CLI water. **(SI)**

CONCLUSION

LQD concurs with the request to plug monitor well FM-009. This action should be completed as soon as possible to prevent further contamination of groundwater impacted by the identified casing leaks. CR is required to provide the following information according to the assigned deadlines as follows:

- 1 CR should prepare a submittal to replace Well FM-009 with Well FM-009A committing to the items listed in comments 1-4 above. Due to the urgent necessity to plug Well FM-009 to prevent groundwater contamination in the region of the well, LQD will allow the well to be plugged in advance of receiving and approving the Non-significant revision. The submittal should be provided to the LQD **within 60 days of receipt of this review.**
- 2 CR must document the status of the confirmed excursion at FM-009 with a discussion/explanation in the **next monthly and quarterly excursion reports.**
- 3 CR must disclose all failed MITs where no action has occurred to plug or repair the wells **Within 60 days of this review.**
- 4 CR must provide **monthly updates** of the file research into the historic restoration project in the area of the F-11 Header House.

- 5 CR should proceed with expanding the CLI into the HH-F-11 area with updates to LQD on a **biweekly schedule** by email or conference call.

The LQD will continue to evaluate the information submitted for Conclusion Item Nos. 3, 4 and 5. The disclosures provided by CR at the March 15, 2013 meeting indicate an additional violation has occurred as defined by Chapter 11, Section 8(c). CR's diligent effort to disclose information in an expeditious manner and to focus resources to avert potential environmental harm is needed. The LQD appreciates the effort required to fully understand the complexity of this situation and welcomes further exchange of ideas from you and your staff to address the issues.

Cc: TFN 3 2/290, Casing Leak Administrative Order
Excursion Status Reports Volume, Tab 35, Permit 603