



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

August 16, 2010

Mr. Angelo Kallas
Cameco Resources, Inc.
PO Box 1210
Glenrock, WY 82637

**Subject: June 2010 Inspection Report, Second Part-Vegetation Inspection
Cameco Resources, Permits 603 and 633**

Dear Mr. Kallas:

Please find enclosed the above referenced report. The June inspection was conducted with assistance from your staff on June 22, 2010. The enclosed report addresses the vegetation review by LQD Robin Jones. Please review the report at your convenience. If you have any corrections, please respond in writing so that it may become part of the permanent record.

If you have any questions, please do not hesitate to contact me at prothw@wyo.gov or 777-7048, jstauf@wyo.gov or 777-7069 or rjones@wyo.gov or 777-8956.

Sincerely,

Pam Rothwell
District 1 Assistant Supervisor
Land Quality Division

cc: Joe Brister, Cameco Resources, Lakewood, CO
Douglas Mandeville, NRC

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**JUNE 2010 INSPECTION REPORT
DISTRICT 1/LAND QUALITY DIVISION**

COMPANY: Cameco Resources (CR), Highland Ranch, Permit #603
& Smith Ranch, Permit 633

LOCATION: North of Glenrock, off Ross Road

DATE OF INPECTION: June 22, 2010

DATE OF REPORT : August 16, 2010

INSPECTORS: Jonathan Stauffer, Surface Water Hydrologist, District 1
Robin Jones, Vegetation Ecologist, District 1

COMPANY REPRENTATIVES: Shawn DeGraugh, Joe Brister, Ken Garoutte

INTRODUCTION

This is the second part of the June 2010 inspection report referenced above. The inspection of surface water hydrology issues was sent to Cameco on June 23, 2010. Through the review of the 2008-2009 Annual Reports for Permits Nos. 603 & 633, it became apparent that certain reclaimed areas of both permits should be field reviewed during the 2010 growing season. Field review of these areas was completed during a June 22, 2010 visit of the permits. The following discussion includes the documentation of this field visit.

DISCUSSION

Initially, DEQ-LQD personnel (Mr. Jonathan Stauffer and I) met Cameco personnel (Shawn DeGraugh, Joe Brister & Ken Garoutte) at the main office. After some discussion, the plan for the field reconnaissance was established and the participants divided into two vehicles for transport through the two permit areas. The first stop (at least vegetation related, as several areas of interest to the surface water hydrologist were also visited and are included in a separate report) was MU15. Cameco pointed out this area had been seeded fairly recently. However, what was interesting to note is that Cameco had covered half of the seeding area with Terraplex[®] and the other half with Cocoplex[®]. The fiber mats were then seeded and covered with a thin layer of gravel and sand. Cameco indicated that this treatment was accidental and not your typical use of this material but the result appeared to be favorable at this particularly harsh site, as many grass seedlings were observed by DEQ-LQD. The area where the fiber-mat was utilized in unit MU15 should be visited occasionally to document the vegetation establishment. This fiber-mat utilization should be remembered for possible future applications if favorable vegetation establishment is noted at unit MU15. Of particular interest in regards to this site, is the landscape position of the site, it is situated on a hill, positioned up in the prevailing wind, with southern exposed slopes. Plus the hill is composed of "blow sand", large expanses of vegetated sand dunes area common in this area. The combination of exposure to the prevailing wind, southern exposure and sand growing medium make this site particularly harsh. The methodology that Cameco accidentally utilized at this site is showing promise, this fact is noteworthy and the status of the reclamation at this site should be monitored by DEQ-LQD in the future and based

upon these observations, the utilization of this fiber-mat application may prove useful at other harsh sites.

The equipment park-up area near unit MU9 was visited next. Cameco showed DEQ-LQD their seeding equipment. Discussion centered on the distinct advantages of possessing your own reclamation equipment.

Primarily, reclamation operations can be conducted in concert with favorable weather conditions, rather than scheduling a contractor and relying on the too often variable schedule of the contractor to get seed into the ground. When a mining company has reclamation equipment, seed and trained personnel available, reclamation operations can be performed somewhat immediately prior to favorable weather events, that in-turn increase the chances such reclamation will be successful (i. e. perennial seeded species will become established quickly and will be robust, thereby making the given reclamation area more resistant to the establishment of weedy species). Cameco indicated that they had purchased a seed drill (Photo 1), mulch crimper and tractor (Photo 2) and a bale grinder and bale handler (Photo 3).



Photo 1. tye[®] seed drill.



Photo 2. Tractor and mulch crimper.



Photo 3. Bale grinder and bale handler.

DEQ-LQD noted winterfat seed in the hopper of the seed drill and mentioned that this type of seed is likely too light to pass through a conventional drill. Cameco verified this observation, which prompted DEQ-LQD to suggest Cameco contact Mr. Kyle Wendtland at Antelope Coal Mine (ACM) to discuss the re-configuration of conventional seed drills for adaptation to the rigors of mine land reclamation.

DEQ-LQD related that ACM has two retro-fitted seed drills, one for seeding large seeded grasses and one that “dribbles” the small seeds of shrubs and sub-shrubs onto a firm seedbed and the seeds are immediately pressed into the seedbed by a row of cultipacker wheels attached to the drill, behind the seed delivery tubes. Cameco took Mr. Wendtland’s information and seemed interested in contacting him to discuss reclamation.

After viewing the Cameco reclamation equipment, the unit adjacent to the equipment parking area (MU9) was indicated by Cameco. This unit had been seeded recently plus mulch had been crimped into the seeding unit (Photo 4).



Photo 4. The recently seeded and mulched Unit MU9.

DEQ-LQD noted that much of the mulch was mostly laying on the soil surface rather than sticking-up, like wheat or grain stubble, which is more typical when mulch is crimped into a seeding unit. This led DEQ-LQD to believe the crimper (Photo 2) had not been weighted during the mulch crimping operation. The implication of this observation was an afterthought by DEQ-LQD and was not related to Cameco during the inspection. Perhaps Cameco should consider the addition of some weight plates to the crimper (Photo 2) next time there are crimping operations. Crimping mulch in such a way produces stubble that aids the soil to resist wind erosion at the surface. Indeed, maybe Cameco did use weight during crimping but this was not apparent based upon the state of the mulch in unit MU9 and the observation of the crimper with no additional weight plates (Photo 2).



Photo 5. H-Field mitigated surface spill area.

Next, the soil contamination area in H-Field was visited. This area had experienced a surface spill of “pregnant” well fluid a couple of years ago. The mitigation included removal of contaminated soil and the import of clean subsoil and topsoil that was subsequently seeded. The area is well re-vegetated (Photo 5) and it appears as if the mitigation measures were successful.

CONCLUSIONS

DEQ-LQD should continue to monitor the vegetation growth in the fiber mat application area of MU15. It will be interesting to note the success/failure of this “accidental” application of fiber mat. DEQ-LQD is pleased with the Cameco purchase of reclamation equipment. Further, DEQ-LQD anticipates the future use of this equipment across the two permits. Additionally, Cameco is encouraged to contact Mr. Kyle Wendtland at ACM to “pick his brain” about retro-fitting conventional seeding equipment and other reclamation issues. The mitigation area in H-Field appears to have re-vegetated quite well. It is to Cameco’s credit that this mitigation was performed in a timely fashion and is proving successful. DEQ-LQD looks forward to assessing the condition of reclaimed vegetation at the Cameco permits during the 2011 growing season.