



Department of Environmental Quality

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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

LOCATION

November 30, 2010

Mr. Angelo Kallas
Cameco Resources, Inc.
PO Box #240
Glenrock, WY 82637

Subject: November 2010 Inspection Report, Cameco Resources, Permits 603 & 633

Dear Mr. Kallas:

Please find enclosed the above referenced report. The November inspection was conducted with assistance from your staff on November 4 and 5, 2010. 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.

Sincerely,

Pam Rothwell
District 1 Assistant Supervisor
Land Quality Division

cc: Joe Brister, Cameco Resources, Lakewood, CO
Douglas Mandeville, NRC
Tom Foertsch, BLM/CFO



NOVEMBER 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 INSPECTION: November 4 and 5, 2010

DATE OF REPORT: November 24, 2010

INSPECTORS: Pam Rothwell, LQD Permit Coordinator

CONDITIONS: Partly cloudy, 55°, calm

COMPANY REPRESENTATIVES: Dawn Kolkman, SHEQ Coordinator
Angelo Kallas, SHEQ Manager
Toby Hewitt, Chief Hydrologist
Shawn DeGraugh, Reclamation Manager
Tom Cannon, Mine Manager
Sean Schaub, Geologist

INTRODUCTION

The focus of the inspection was to evaluate the status of the deep disposal wells, evaluate the erosion repairs to the DDW# 10 and begin inspection of plug and abandonment (P&A) of on-permit delineation drilling reported in the 2009-2010 Annual Report for Permits 603 and 633. In addition, the inspector requested an update of the production and restoration activities on both permitted sites.

ACTIVITIES UPDATE (pre-inspection meeting with Tom Cannon, Angelo Kallas, Toby Hewitt and Dawn Kolkman)

Spills Evaluation

CR reported that they have had only four reportable spills in the past year which is a 90% reduction. They attribute the significant decrease to: 1) new leak detection system in wellfields, 2) observation and scrutiny from wellfield operators to identify and repair seeps and drips in early stages of potential spills

Development Activities

- MU-21 (not permitted yet, operating under DN 236) – 53 drill holes of 300 completed for delineation of ore body; drill rigs moved to MU-10 for cased hole installations.

- MU-27 (not permitted yet, operating under DN 236) – Toby Hewitt is working on responses to LQD review comments regarding the Hydrologic Test Report
- MU-K-North – 6 rigs working cased hole installations in HH-K-10 through K-12; 125 cased holes installed and some under-reaming in progress
- MU-10 – 3 rigs working; 70 of 109 wells are cased and passed MIT
- MU-7 – no update

Production Activities

- MUs-H, J, K, L, 9, 15, 2 & 3 are in production
- MU-15A – recently turned on HH 15-22; also working on surface development
- MU-9 – recently turned on HH-9-13 (furthest west HH)

Restoration Activities

- MU-C – Continue working on washouts of wells used for bioremediation; 61 of 103 are complete. Toby Hewitt is working on responses to LQD review T2 comments regarding the Final Report for bioremediation. Toby's target date for completing the responses is December 15, 2010
- MU-E – drilled and under-reamed approximately 22 restoration wells
- MU-4 – HH-4-4 is ready for reverse osmosis (RO) through Satellite SR-1; issue with deep disposal well approval from DEQ/WQD
- MU-1 – currently in RO @ 400gal/min; began test of circulating NaS at HH-5/ if no issues with plugging detected, will continue. Plan to use 6 pore volumes in permeate and evaluate effectiveness over the next few months
- MU-F – Needs refurbishment of header houses and wells to proceed with restoration which is now in the budget

Other Activities

- The in-house laboratory used to process/analyze samples collected at monitor wells and other sampling activities is being expanded to provide more room
- The Southwest road leading to MUs 15 and 9 is currently being widened, and a hill reduced for better visibility to haul traffic. In addition to addressing safety issues the road design is considering the high maintenance issues to try to minimize the constant need to construct rock checks and straw bale controls along the sides of the road. A gravel surface is being added as well.
- CR has hired a new restoration engineer currently working under Toby Hewitt
- CR is developing a mine-wide disposal network to connect disposal wells to multiple Satellites for enhanced utilization of the deep disposal wells.
- CR is working on a water balance modification that is adjusted for "flow centers". The intent is to maximize efficiency of water usage. When the modification is conceptually complete, CR will propose a revision to the permit.
- Selenium Plant was in operation and irrigation at PSR-2 was continuing due to favorable weather conditions
- Radium ponds – soil samples have been collected and prepared for analysis. Currently, CR is training staff to use a gamma spectrometer for the analysis

- **PSR-2 Irrigation Circle** – Selenium sampling has been completed; 44 samples were collected. The consultant is preparing a response to the LQD comments regarding the selenium issues
- **CR** has purchased and is currently calibrating a meteorological station with a data recorder. The plan is to install the station within the next week
- **Planning for the Highland Uranium Project (HUP) Central Processing Facility (CPF)** to be converted to a resin stripping, elution and precipitation facility is in the design and cost analysis phase
- **MU-B restoration issues** are being evaluated to address NRC concerns

INSPECTION (November 4, 2010)

New Deep Disposal Well Status

- **Inspection of SHRUP #9** – disturbance was recently seeded and mulched; crimper is not working as well as desired, CR may purchase additional crimping equipment. Work crew was working on general surface and building work to complete backfill following power and pipeline installations (Figure 1). The disposal well will be used in part for disposal of waste water from MUs D and E; waiting on approval from WDEQ/WQD
- **Inspection of Vollman 33-27** – need power from well to injection pump hooked up; some additional pad work needed and reclamation; waiting on approval from WDEQ/WQD
- **Morton** – in operation, pumping approximately 40 gal/min, pumping from Satellite 2 (noted on computer screen in pump house)
- **SHRUP #6** – (not inspected during November inspection), working on back pressure in casing using nitrogen pressurizing system; Shawn DeGraugh (CR) hand delivered photographs of the additional reclamation work conducted in the drainage adjacent to the reclaimed well pad. The photos indicate that the perimeter and slopes of the reclaimed disturbance has been reinforced with additional seeding (hydroseeded) to help stabilize areas that could potentially erode. The photos have been filed in the LQD inspection file. CR is waiting approval from WDEQ/WQD

INSPECTION (November 5, 2010)

Inspection of SHRUP #10 – waiting on power installation; surface reclamation in progress (Figure 2); also conducting some road work for the landowner. The disposal well will be used in part for the disposal of waste water from MU-4; waiting on approval from WDEQ/WQD. The sediment that was located outside the disturbance noted during the September inspection was removed and the surface reseeded. A topsoil stockpile remains on the location (Figure 3). A connecting road has been improved from the DDW site to Satellite No. 1.

Inspection of Plugged and Abandoned Holes - the 2009-2010 Annual Reports for Permits 603 and 633 indicate there were 89 and 629 delineation holes drilled respectively plus nine pilot holes on Permit 633 during the report period. LQD policy is to inspect 20-30% for verification

that the holes were adequately plugged and abandoned according to the Wyoming Environmental Act (ACT) § 35-11-404(c).

The inspector attempted to inspect some of the abandoned drill holes located in MU-3. A GPS locator was used to find the hole locations, however, the sites had been backfilled, topsoiled and seeded without a stake placed at the hole location making it impossible to be confident of the hole location. The inspector attempted to probe the approximate location but could not be sure that the cap was located. Without a confident means of inspecting the hole plugging, the hole inspections are postponed until other inspection methods can confirm the holes are adequately plugged and abandoned.

The following drill sites were verified as backfilled, topsoiled and seeded (Figure 4):

Mine Unit	Hole Delineation Number	Grading	Topsoil	Seeding	Surface
MU-3	3674-26-2475	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2480	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2484	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2488	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2493	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2497	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2501	Rough	Applied	Broadcast	Federal
MU-3	3674-26-2536	Rough	Applied	Broadcast	Federal

COMPLIANCE ASSESSMENT

- 1 CR has nearly completed the installations and reclamation of the new deep disposal wells and continues to wait for approval from the DEQ/Water Quality Division for the permits to inject into the wells.
- 2 The LQD acknowledges the significant improvement in reducing the number of reportable spills. The training of wellfield operators has apparently heightened awareness for early detection of spills (and/or potential spills). CR will need to ensure the training and motivation to prevent and/or detect spills is maintained as operations continue to expand at the mine.
- 3 With reclamation complete at DDW #10 and a topsoil stockpile remaining, it is unclear where the topsoil will be applied. The topsoil volume will be tracked through the Annual Report reviews.

- 4 Delineation and exploration drill holes are plugged and abandoned without surface stakes/markers for inspection of abandonment. Although the locations can be approximated with GPS, it is not possible to confidently locate a subsurface cap that has been backfilled, topsoiled and seeded without a surface marker. Further, locating a subsurface cap provides assurance that a hole is capped but does not ensure the plug is in place. Therefore, LQD will request excavation and removal of caps for a percentage of drill holes during future inspections to verify the plug is in place and is not settling. LQD does not have the resources to inspect plugging activities during the activity and therefore will need to conduct the inspections after the work is completed. These inspections will be announced to ensure CR has adequate staffing on site to provide the excavation and cap removal.

CR is drilling at a very high rate of 700 to 1000 holes/year. Typically, the LQD tries to inspect 20-30 percent of hole abandonment. However, inspection of this percentage of abandoned holes given CR's drilling rate is not reasonable given LQD resources. Therefore, the inspector will conduct subsurface investigation of one percent of the holes reported in the Annual Reports to establish confidence that holes are adequately plugged and continue with inspection of 20-30% including probing for subsurface caps, grading, topsoiling and seeding. CR's practice of not using surface markers may need to be modified. If this is the preferred practice, the caps will require more accurate location methods such as metal detectors to allow the inspector to probe the cap.

- 5 The LQD will request concurrence from the BLM for verification of hole P&A.

PHOTOS

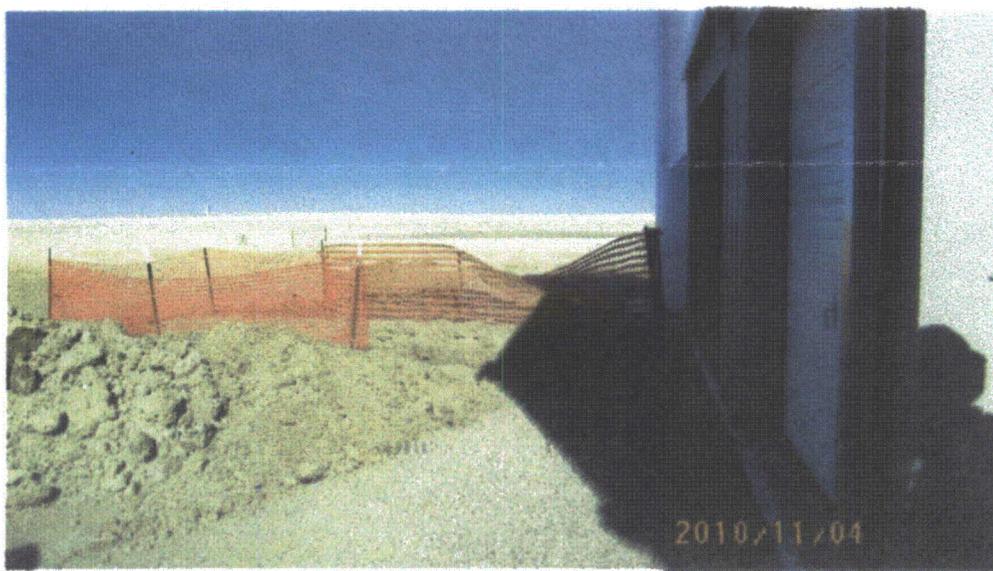


Figure 1 power line installation at SHRUP #9

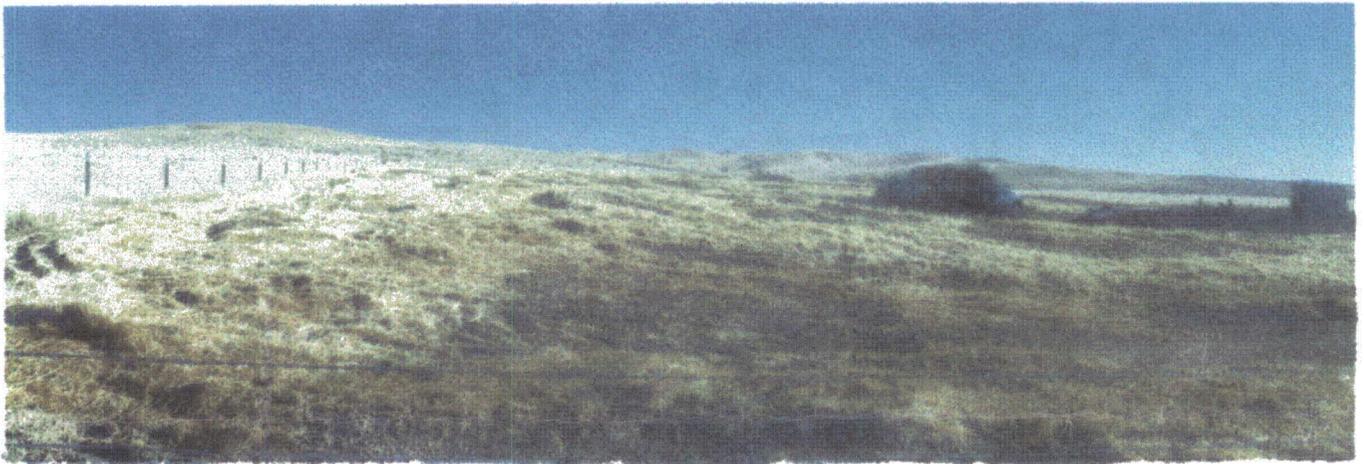


Figure 2 Reclaimed wellpad SRHUP #10



Figure 3 Topsoil stockpile at SRHUP #10



Figure 4 Graded, toposited and seeded drill site in MU 3