



Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Mr. Larry Teahon
Crow Butte Resources, Inc.
P.O. Box 169
Crawford, Nebraska 69339-0169

NOV 25 2008

Dear Mr. Teahon:

On September 29, 2008, the Nebraska Department of Environmental Quality (NDEQ) received a copy of the Surety Cost Estimate document submitted by Crow Butte Resources, Inc. (CBR) to estimate costs associated with mining, restoration, decommissioning, and reclamation at the Uranium Facility through 2009.

Last year, staff at the US Nuclear Regulatory Commission (NRC) noted that CBR had specified a total restoration pore volume (PV) of 8 PVs in the 2008 surety estimate. NRC staff reviewed the restoration report for Mine Unit 1 and noted that at least 9 PVs were required to restore this mine unit. Using this as a baseline, it was determined that an estimate of 8 PVs for restoration was inadequate, even with newer and more efficient RO units and new restoration pipelines, which increased flow capacity. The NRC also addressed the use of the restoration circuit in recovering soluble uranium after injection of mining solution has ceased. Between September of 1994 and February of 1999, 26.2 PVs of groundwater in Mine Unit 1 underwent ion exchange treatment. Because the restoration circuit was used for this ion exchange treatment, the additional PVs should have been included as part of the restoration process for mine units in the 2008 surety estimate, rather than viewing it as a continuation of the mining process through the commercial production circuit. Mine Unit 2 began restoration in 1996. Since this time, 747,764 kgal of water have been pumped through the aquifer for restoration purposes. This equates to 41.5 pore volumes. The table below outlines the amount of water used for each type of restoration within the circuit.

TRANSFER	499,606,826 gal	28 Pore Volumes
SWEEP	1,155,539 gal	.1 Pore Volume
**TREAT(IX)	115,026,034 gal	6.4 Pore Volumes
TREAT(RO)	106,063,042 gal	5.9 Pore Volumes
RECIRC	19,338,600 gal	1.1 Pore Volumes

**This is water that is processed through ion exchange (IX) prior to starting RO treatment.

Even if the transfer water is removed from the equation, 13.5 PVs are required for restoration. Not including the water treated through IX before RO treatment as restoration water, 7.1 of the estimated 8 PVs have already been used for restoration. Therefore, the estimate in your 2009 Surety of a total of 8 PVs for restoration is inadequate. The use of 8 PVs as a restoration estimate for *each* mine unit is also inappropriate. Mine Unit 10 will have 720 production/injection wells, and encompasses 112 acres. This is 10 times the size of Mine Unit 2, which is 11.7 acres, and will likely require a greater number of pore volumes for restoration.

Upon review of the restoration section of your 2009 Surety Estimate, the Department has determined that 8 PVs for restoration is inadequate, and requests a more realistic number of pore volumes for each mine unit. The Department will wait for an adjusted pore volume estimate for restoration of each mine unit before processing the surety.

If you have any questions or comments concerning this letter, please do not hesitate to contact me at (402) 471-4290.

Sincerely,



Jennifer Abrahamson
UIC Coordinator
Ground Water Unit
Water Quality Division

JLA/rd

word/cbr/surety/PVestimateCVR.doc
Cc: Dave Carlson, NDEQ
Steve Cohen, NRC