STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
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Colorado Department
of Public Health
and Environment

March 27, 2000

Joseph A. Legare
U.S. Department of Energy,
Rocky Flats Field Office
10808 Highway 93
Golden, CO 80403-8200

Dear Mr. Legare:

The State cannot concur that the objectives of the Solar Ponds Decision Document were met by completion of this project.

The first objective, to reduce the mass loading of nitrate to North Walnut Creek has not been attained. Nitrate levels are currently increasing at surface water monitoring locations.

The second objective to design and install a passive system to intercept and treat the contaminated water has not been met for several reasons. First and most obvious, no water has yet been treated. Second, the design as modified was not evaluated to ensure most ground water in the plume would be intercepted. The design modification presented no evaluation that the increased head required to drive the treatment system could be met and there was no consideration given to the effects of increased head on underflow of the system. The other modification of the project, shortening the panels on the top end has not been evaluated in relation to the raising of the required head to drive the treatment system.

Objectives 5 and 6 can not be met until the treatment system is operational.

There is no diagram that shows the relationship of the treatment cell to the colluvial and bedrock lithologies or to the potentiometric surface in the area. What information was this system designed from? The vertical as built drawings should also be included in this report.

Changes made to the design of the system, i.e., the treatment cell location, were presented in the final decision document, but the 12-foot head requirement and its consequences were not disclosed until the January 2000 meeting. Detailed design documents appear not to have been completed for this project, or if completed, not presented to either regulator.

Evidence exists that water is underflowing the system at an estimated ½ gpm at the discharge gallery, this adds up to 720 gallons per day. Using existing low flow measurements for this segment of North Walnut Creek and the current loading from the discharge gallery provided in your letter the resulting calculated instream nitrate concentration is 99 mg/l. Given the prior treatment system resulted in instream observations below 10 mg/l, the efficacy of this treatment has not been demonstrated.

We have serious concerns about the additional head requirement in this system driving underflow of the system, ground water will take the path of least resistance. Evaluation of the underflow of this system needs to be added to the Performance Monitoring of this system. The site should also to set up an

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evaluation of water coming into the system to help manage the treatment system operation. We have evaluated the monitoring information available in the area through the Integrated Monitoring Plan (IMP) and Performance Monitoring specified in the Decision Document. A separate memorandum has been sent to your technical staff detailing the information we believe necessary for an analysis of the problems. After an initial evaluation of this data the ground water and surface water groups of the IMP should meet to develop decision rules for the operation of this treatment system. We must be certain this system can meet the underlying standard of 10 mg/l Nitrate.

Another concern we have is for the stability of the hillside with 12 feet of water backed up behind the barrier wall. We would like to see the analysis that was done to evaluate that concern.

Although it seems contradictory to our current concerns of not enough water to run the treatment system the minor modification of shortening the barrier panels should be evaluated for the potential of overflowing the barrier during periods of high recharge. What is the volume discharge of the pipe influent to the treatment cell in relation to the water permeable volume behind the barrier and a major recharge event?

Issuing a closeout report prior to the system actually functioning seems premature. The agencies have agreed to wait for anticipated spring moisture to test the hydraulics and operating efficiencies of the system. We hope to continue to work with the Site to agree on solutions that will allow the system to operate so stream standards can be met. Should you have questions on these issues please contact Elizabeth Pottorff at 303-692-3429 or Carl Spreng at 303-692-3358.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

cc: Tim Rehder, EPA
Gary Kleeman, EPA
Norma Castañeda, DOE
John Stover, DOE
Bob Nininger, KH
Tom Greengard, SAIC
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