



State of Utah

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February 15, 2011

Mr. Barclay Cuthbert
Earth Energy Resources, Inc.
Suite # 950
633- 6 Avenue SW
Calgary, AB T2P 2Y5 Canada

Dear Mr. Cuthbert:

Subject: PR Spring Tar Sands Project, Uintah/Grand Counties, Utah
Revised Ground Water Discharge Permit-By-Rule

The Division of Water Quality (DWQ) has reviewed the information submitted by Earth Energy Resources, Inc. (Earth Energy) on February 8, 2011 regarding planned changes to the PR Spring Tar Sands Project since DWQ's original ground water discharge permit-by-rule determination was issued on March 4, 2008. The proposed operation consists of open-pit mining of tar sands, extraction of bitumen, and storage of tailings and waste rock.

Below are the changes that Earth Energy had made to its plans for this project since the original permit-by-rule determination, including DWQ's response to each change.

1. The stabilizer component that was originally planned as part of the cleaning emulsion used for bitumen extraction will not be used. DWQ does not consider this change to affect the original finding of *de minimis* effect on ground water quality, which was made considering use of the stabilizer.
2. Earth Energy will use a horizontal belt filter to remove process water from tailings sands, and a disk filter to dewater fines. The expected water content of the blended tailings will be less than 15% by weight. The original proposal was to use a "shale shaker (or similar device)" to produce tailings with a water content ranging from 10 to 20 percent, which would not be free-draining. As the proposed change will still produce tailings within the original estimated range for water content, this change does not affect the determination of *de minimis* effect on ground water quality.

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3. The original request stated that there would be two overburden/interburden storage areas approximately 25 acres each. Since then, Earth Energy has changed the storage areas for overburden/interburden from two areas of 25 acres each to two areas of 34 and 36 acres, respectively. This change does not affect our original permit-by-rule determination for having a *de minimis* effect on ground water quality.
4. The original project plan was to backfill the open pit with tailings. However, Earth Energy has determined this to be infeasible during the early stages of mine development. Earth Energy now plans to dispose of some tailings in the overburden/interburden storage area. The revised plan is to place tailings generated during the early stages of mine development within the overburden/interburden storage areas, in cells surrounded by coarser waste rock. The original permit-by-rule determination found that natural precipitation leaching through tailings would have *de minimis* effect on ground water quality. Also, proper reclamation of waste rock disposal areas would minimize any potential for increased dissolution of salts and hydrocarbons caused by the increased surface area of the broken-up rock. The proposed changes to the original plan should not affect the original determination that disposal of tailings and waste rock would have *de minimis* effect on ground water quality at this site.

In summary, the proposed changes to the mining and bitumen extraction project do not change the March 4, 2008 permit-by rule determination for having a *de minimis* potential effect on ground water quality and the project still qualifies for permit-by-rule under UAC R317-6-6.2.A(25). If any of the factors considered when making this determination change because of changes in your operation or from additional knowledge of site conditions, this permit-by-rule determination may not apply and you should inform DWQ of the changes. If future project knowledge or experience indicates that ground water quality is threatened by this operation, the Executive Secretary may require the submission of an application for a ground water discharge permit in accordance with UAC R317-6-6.2.C.

If you have any questions about this letter, please contact Mark Novak at (801) 536-4358.

Sincerely,



Rob Herbert, P.G., Manager
Ground Water Protection Section

RFH/MTN/mhf

cc: Paul Baker, DOGM
Scott Hacking, District Engineer
Dave Ariotti, District Engineer
Tri-County Health Department
Southeastern Utah Health Department