ENVIRONMENTAL QUALITY COUNCIL

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July 8, 2010

TO: EQC members
FR: Sonja Nowakowski, ETIC staff
RE: Follow-up to May ETIC update

EQC members,

During your May meeting you requested that staff provide you with a copy of the carbon sequestration update that was given to the Energy and Telecommunications Interim Committee (ETIC) at their May 13 meeting. Attached is the CO_2 background and status report provided by Tom Richmond, administrator of the Montana Board of Oil and Gas Conservation.

Sonja Nowakowski

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Carbon Dioxide Sequestration Update

ETIC Meeting
May 13, 2010
Tom Richmond, Administrator; George Hudak, UIC Director
Board of Oil and Gas Conservation, Billings
406-656-0040

Background

Underground injection is regulated under the Safe Drinking Water Act (SDWA) of 1974. Injection wells are divided into five classes, depending on what they inject:

Class I Hazardous or industrial waste
Class II Oil and Gas related injection
Class III Solution mining (salt, uranium, potash)
Class IV Hazardous waste injected above a drinking water source (this class is banned)
Class V all other

The injection of carbon dioxide for permanent storage ("sequestration") would normally come under Class V, but EPA is proposing to regulate this injection under a new class of injection wells, to be called Class VI.

The underground injection of carbon dioxide for enhanced oil recovery (EOR) is regulated by Montana under their Class II injection well program. *Injection of carbon dioxide for EOR purposes will remain a Class II activity and is specifically exempted from the Class VI regulations*.

Status

EPA published draft regulations for the Class VI injection well program in the *Federal Register* on July 25, 2008. The public comment period closed later that year, and EPA is now preparing a response to those comments. EPA expects to publish a final rule later this year or in 2011.

On May 6, 2009, Governor Schweitzer signed into law SB-498, directing the Board of Oil and Gas Conservation to seek primary enforcement authority ("primacy") for the Class VI injection well program from EPA.

Board staff are currently working on a "pre-draft" set of regulations for Class VI injection wells.

Approach to Rulemaking

Special Considerations for Carbon Dioxide

Large Volumes
Buoyancy
Mobility
Corrosivity

Basic Program Elements

Site Characterization
Area of Review
Well Construction
Well Operation
Site Monitoring
Well Plugging and Post-Injection Site Care
Public Participation
Financial Responsibility
Site Closure

Remaining Issues

SDWA Section 1422 or 1425?

The Board's Class VI regulations will be drafted in anticipation of applying for primacy under Section 1422 of SDWA. Section 1422 requires a state seeking primacy to develop regulations which are "at least as stringent" as the Federal regulations.

However, there is a (remote) possibility EPA will allow states to apply for primacy under Section 1425 of SDWA. Section 1425 allows states to develop regulations which are "equivalent in their protection of human health and the environment" to the federal regulations. This is a much more flexible standard. The Board, through the Ground Water Protection Council, has commented on this issue, in favor of allowing a Section 1425 submission.

If a 1425 submission were to be allowed, the Board would modify its draft regulations.

Injection above a USDW

An underground source of drinking water (USDW) is any aquifer which contains water with less than 10,000 mg/l total dissolved solids. The primary purpose of the injection well

program is to protect all USDWs from contamination from injection activities.

In certain regions of the country where the geology is uncomplicated, USDWs are found from the surface, down to a certain (predictable) depth. Below that depth, the aquifers are no longer USDWs. In those states, requiring injection to take place below all USDWs is reasonable.

But in states with mountainous uplifts, deep rock formations have been brought to the surface by geologic uplift. The surface exposure of these rocks in the mountains allows them to be recharged with fresh water in the form of rain and snow, and this recharges the aquifer to a great depth with fresh water. States like Montana have aquifers which are legally classified as USDWs at very great depths; depths far deeper than anyone would likely drill a drinking water well.

EPA's original proposal to permit injection only below all USDWs would mean a huge area of Montana would be off-limits to sequestration.

EPA is reconsidering this issue, and they may allow waivers to this requirement. The Board also commented on this issue, in favor of allowing injection above a USDW.

Other well classes

EPA has long had a policy of allowing a state to apply for primacy for either (a) class II alone, or (b) for the other three classes together.

Unless EPA changes its policy, to obtain the class VI program, Montana would also have to apply for classes I, III, and V. The Board commented on this issue, in favor of allowing a state to seek primacy for the class VI program alone.

Class II to become class VI?

It is possible a Class II carbon dioxide EOR project could be transitioned to a Class VI sequestration project after EOR is completed. How the class II standards would apply to a Class VI project has not been determined.