

Coos County Coal Bed Methane Extraction Project Update

Hearing to be Held On October 30, 2007

Proposed Permit

The Oregon Department of Environmental Quality (DEQ) has proposed to issue a water quality discharge permit, known as a National Pollutant Discharge Elimination System (NPDES) permit, for wastewater that would be produced by the methane extraction project.

Background

The development of coal bed methane is growing in several areas of the country. Natural gas from coal bed methane is estimated to provide 10% of the total U.S. natural gas production. Recognizing the importance of this resource, the Western Governors' Association in 2005 endorsed development of the resource provided that it is performed in an efficient and environmentally sound manner.

Coos County Methane Project

Methane Energy Corp (MEC), an Oregon-based wholly owned subsidiary of Torrent Energy, has been exploring the potential natural gas reserves contained in the coal seams of the Coos Bay Basin.

MEC holds over 100,000 acres in the basin under lease from a variety of public and private landowners, including a major area under lease from Coos County. MEC estimates that 1.2 trillion cubic feet of pipeline-quality methane (99% purity) exists in the basin. The wholesale market rate in Oregon for natural gas is about five to ten dollars per million cubic feet.

Several state agencies are involved in reviewing and permitting coal bed methane development, including the Department of Geology and Minerals Industry (DOGAMI), the Department of Fish and Wildlife, and DEQ.

Initial Exploration

In 2005, MEC installed a series of directionally drilled wells that reached over 4,000 feet deep into the coal seams in two locations northwest of Coquille. In 2006, MEC installed an additional 5 wells in the Westport area. These were shallower wells, with depths of about 2,000 feet.

Current Exploration

After extensive testing of these exploratory wells, MEC chose four Westport-area wells for their next stage of research, and has recently conducted "stimulation" tests at the Westport wells to determine the potential for extracting methane from the coal seams. Nitrogen gas was injected into select wells under pressure to open up cracks in the deep coal formations to help release methane. Stimulation of these wells will help determine the amount of gas flow as well as to determine how much water will be produced from the wells. To facilitate this testing, MEC has proposed a production water collection system that will allow this water to be monitored, treated, and discharged into Davis Slough at regulated times (high tide) only.



Proposed discharge point

Project Status

MEC reports that the results are currently being analyzed, as further tests continue. If the results are favorable, methane will be released to the wells, and pilot production facilities will be used to evaluate the economic feasibility of extracting the resource.

If gas production appears economically viable, MEC or a gas-production company will likely install 30 to 60 well pads which will house up to 300 production wells. The project will involve



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building connections from the wells to existing or planned pipelines, and extracting and marketing methane for the next 10 to 30 years.

Currently the groundwater produced from the coal beds, which resembles dilute seawater, is taken to either the Coos Bay Wastewater Treatment Plant or the North Bend Wastewater treatment plant where it is treated and discharged under a DEQ permit. However, as larger volumes of water are produced, MEC will use a combination of the proposed collection system and the permitted facilities noted above.

MEC has applied for a water quality discharge permit from DEQ. They propose to treat the produced groundwater by using a two-stage filtration process which removes particulates and trace metals from the water. The resulting effluent is salty water, and MEC is proposing to discharge this saline water to Davis Slough. The Slough is an estuary with a salinity that's slightly more than the water proposed to be discharged.

Potential Concerns

There is concern both nationally and locally about the potential for contamination of shallow drinking water aquifers in areas where coal bed methane development is taking place. A 2004 EPA national study concluded that injecting nitrogen or water (hydrofracturing) to stimulate methane production was unlikely to adversely affect drinking water sources. Based on their research they were unable to identify a single case where similar well stimulation activities had resulted in a drinking-water aquifer impact.

Each of the MEC production wells in Coos Bay is cemented and cased to total depth, and each has a second outer casing that is installed and cemented in place to about 400 feet to protect aquifers that serve as a water resource. Drinking water wells in the area are no deeper than 200

feet. Given the construction of the MEC wells and the thick sequence of low-permeability siltstones overlying the Coos Bay coal bed resource, it seems unlikely that the gas wells will cause shallow groundwater contamination. However, full-scale production will mean that each drilling pad will need to be located carefully to minimize impacts to groundwater resources.

Regulatory Issues

The drilling-pad construction and well drilling, and ultimately the site reclamation, is conducted under a DOGAMI permit.

The initial, one-time nitrogen injections received written authorization from DEQ under its Underground Injection Control rules. Long-term injection or full production well "stimulation" will require a permit that will govern the underground injection controls.

Potential Long-Term Issues

The drilling pads and areas around the gas wellheads will be reclaimed to a more natural state under DOGAMI, and the relatively small wellheads will not have much visual impact. Although EPA's research on hydrofracturing indicated that shallow groundwater was not impacted, the potential for long-term impacts on shallow groundwater is unknown

Additional resources can be found at:

www.methaneenergy.com

www.torrentenergy.com

Alternative formats

Alternative formats (Braille, large type) of this document can be made available. Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696.