

Comparative Analysis of Water Quality Impacts to the Tongue River, Powder River Basin

Brian Bohm, ALL Consulting and **Tom Richmond**, Montana Bureau of Oil and Gas Conservation

ALL Consulting
1305 E. 15th Street, Suite 205
Tulsa, Oklahoma 74120
Phone: 918-382-7581 Email: bbohmed@all-llc.com

Biographical Sketches of Authors

Mr. Bohm earned a Master of Science Degree in Geology from the University of Missouri-Columbia, with a research emphasis in Karst Hydrogeology. Mr. Bohm received a Bachelor of Arts Degree in Geology and Sociology from Monmouth College in Monmouth, Illinois. Mr. Bohm has been a project geologist with experience working both in the office and in the field. Prior to coming to work for ALL-LLC, Mr. Bohm worked for a large international consulting firm as a project geologist on several large USCOE contracts. He has experience in all facets of fieldwork, including well installation, and sampling and report writing and preparation.

Tom Richmond attended Montana Tech in Butte, graduating with a B.S. degree in Petroleum Engineering. Richmond worked for Phillips Petroleum before taking a position at the U.S. Geological Survey, which eventually brought him back to Montana as the Billings District Engineer. He joined the Montana Board of Oil and Gas Conservation as Senior Petroleum Engineer in 1982 and was named Administrator in 1990. Richmond is Montana's Associate Official Representative to the Interstate Oil and Gas Compact Commission and serves on the Board of Directors of the Ground Water Protection Council. He has chaired state data management committees for both associations and is currently working with GWPC and the Department of Energy to implement a Risk Based Data Management System. Richmond participated in development of the 1989 Programmatic Environmental Impact Statement on Oil and Gas Drilling in Montana that is being supplemented by the Statewide EIS on CBM. He has primary responsibility for programs and regulations to apply environmental requirements, manage federal primacy delegation, and implement legislative changes for the Board.

Abstract

A substantial degree of controversy exists relative to water quality impacts to the Tongue River as a result of coal bed methane development in the Powder River Basin of Montana and Wyoming. The Tongue River is a key item of consideration due to the quality of the water in the river, water users along the river, presence of the Northern Cheyenne Indian Reservation along the river in Montana, issues specific to the Tongue River Reservoir, and aquatic wildlife in the river - just to name a few of the key concerns being considered relative to CBM development. This paper will present analysis comparing potential impacts of CBM development to other impacts to the river, including irrigation return discharges, raw sewage discharge, surface runoff, non-point source discharges, access by cattle, as well as other activities. To-date, this sort of analysis has been unavailable, but will likely be the item of future analysis as water quality standards and Total Maximum Daily Loads (TMDLs) are developed for the Tongue River watershed.

