Coalbed Methane Product Water Quality Across the Powder River Basin of Wyoming. (A05-reddy092942-Oral)

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Abstract:

Extraction of methane (natural gas) from coal deposits is facilitated by pumping of aquifer water. Coalbed methane (CBM) product water, produced from pumping ground water, is discharged into associated unlined holding ponds. The objective of this study was to examine the chemistry of CBM product water at discharge points and in associated holding ponds across the Powder River Basin (PRB), Wyoming. Product water samples from discharge points and associated holding ponds were collected from the Cheyenne River watershed, Belle Fourche River watershed, and Little Powder River watershed within the PRB over a period of two years. Samples were analyzed for pH, EC, TDS, SAR, and trace elements. Results of this study show that pH of product water from three watersheds increased from 7.21 to 8.26 in holding ponds. Among three watershed, the CBM product water from Cheyenne River watershed exhibited relatively less changes in the chemistry of product water in holding ponds. In this presentation geochemical processes controlling the chemistry of major and trace elements in holding ponds will be discussed.

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