

## **Methane Seepage: Measuring the Flux, Recovering Lost Resources, and Protecting the Environment**

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Since the mid-1990's, the seepage of methane has added complexity to how production companies are required to operate in Colorado. Residents near methane seepage are demanding that governments understand this reservoir seepage; how methane impacts human health and the environment; what impacts the loss has on unrecovered mineral resources; and the affects on global climate change. Recent rule changes in Colorado have been promulgated in an attempt to address these concerns.

Monitoring methane seepage in La Plata County, Colorad has been performed with an overriding goal of quantifying the temporal changes in the magnitude and extent of the flux. The objectives of the monitoring program are: to understand how seepage affects vegetation, coal fires, and explosion hazards; evaluate losses in production; identify preferential pathways; verify seepage model predictions; and evaluate contributions to greenhouse gas emissions.

Recent application of methane flux equipment has aided in better quantifying seepage rates. With more than 10 years of data, methane seepage, primarily from 5 discreet areas, along a 23-mile stretch of the San Juan Basin north rim is estimated at approximately 6,000 MCFD.

Quantifying methane seepage has focused efforts toward implementation of mitigation measures by county governments, the COGCC, the Southern Ute Indian Tribe, and CBM operators. Mitigation is currently being performed or evaluated through surface and subsurface capture and changes to county building codes. Development of mitigation approaches is evolving and may include strategic CBM production (infill or near the outcrop), potential carbon credit incentives, and local conversion to electricity.