Regional Groundwater Assessment Monitoring

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North western Alberta and elsewhere require large volumes of water as fracturing fluids that stress existing water resources and can exceed existing water availability. With water necessary for a single shale gas well ranging from 30,000 to 90,000 m3 per well, development stresses are so significant that during periods of low run-off drainage basins such as the Kiskatinaw in British Columbia have been closed to diversions through energy sector constraints. As the price of gas increases and more aggressive shale gas development occurs, such water shortages will become more acute, single user water diversions cannot be expected to meet all users' needs, and conflicts with other water users can be anticipated. In addition to water availability issues, there is widespread public concern regarding the use of chemical additives in fracking fluids and the perceived impact that these chemicals may have on groundwater systems.

Further to the concern about contamination of aquifers with fracking additives, there are also public perceptions related to the negative impact of fracking operations on drinking water. Such perceptions have

been fueled by documentaries such as “Gasland” and a recent lawsuit by Jessica Ernst who filed a multimillion-dollar lawsuit against EnCana, Alberta Environment and the Energy Resources Conservation Board. The accusation was related to negligence and unlawful activities associated with fracking activities, which she claims resulted in gas migration pathways opening up and contaminating her drinking water. Such widespread public misconception has intensified the need for industry to develop regional monitoring networks.

Policy Issue
Regional surface water and groundwater baseline information and inventories

Knowledge Gap
Three basic water sources for industrial use include: surface water, shallow groundwater and deep groundwater. For most areas, there are various data gaps inhibiting available water inventories. In key conventional gas play areas, undertake regional assessments of water inventories based on available data; define data gaps; and identify mechanisms to fill gaps. E.g., from BC’s Montney water project.

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2013 Project Review: Review of Current Practices and Data Resources