Proactive Water Communication by Oil and Gas Operators in the Lochend Area

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Alberta’s oil and gas industry prioritizes water resource management through the proactive approach of many industry producers. Baseline Water Resource Inc. (Baseline Water) conducted a regional hydrogeological/hydrological study in the Lochend Industry Producers Group (LIPG) oil and gas operating field northwest of Calgary. This study is an example of how landowner concerns regarding potential water quality/quantity impacts due to hydraulic fracturing can be addressed cooperatively. The objective was to characterize regional hydrogeology and provide a baseline of natural variation in groundwater chemistry. LIPG practices include offering landowners pre-drilling quality and quantity (yield) tests on water wells within 400 metres of hydraulic fracturing activity. The study consisted of 323 water well and 29 spring assessments throughout the LIPG field. Additionally, long term groundwater quality monitoring was performed for a duration of two years coinciding with oil and gas production. Groundwater from the shallow Paskapoo Formation sandstone aquifer is the primary water source for local landowners. Indicators of potential groundwater impacts from oil and gas activity may include elevated chloride and Total Dissolved Solids (TDS) concentrations or the presence of hydrocarbons. The groundwater quality results were comparable to regional background groundwater chemistry and demonstrate natural variation. The data may serve as a baseline for comparison with future water quality analyses. Results of the long-term groundwater quality monitoring indicated no adverse impacts from adjacent oil and gas operations. Study findings were used to prepare communication documents to facilitate water quality discussion between LIPG and private landowners. Stakeholder communication and engagement are paramount to expediting project timelines and improving public perception of the oil and gas industry.

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