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Can knowledge of shale rock inorganic and organic geochemistry help to predict possible contamination of formation water geochemistry and help to inform a proactive remediation/prevention programme before drilling?

Without drilling, there will be no access to samples from the formation. Once drilling is completed, the best approach would be to analyze produced fluids and gases to fingerprint their compositions.

Is it possible to have an isotopic marker for each drilling company that would constitute a unique signature for that company's frack fluid?

Artificial tracer compounds do exist, but their admixture to drilling fluids in the required quantities would be cost prohibitive. Also, the large number of hydraulic fracturing jobs in some basins will make it impossible to have a distinct tracer for each event.

What has your air quality monitoring revealed? What air pollutants are being monitored?

We have not conducted any air quality monitoring work.

Collaboration on water monitoring must also include communities. How can they become involved?

Communities can become involved in surface water and spring water sampling after training. Also, once results from monitoring become available the communities should be regularly informed.

Are you aware of any Canadian catalog about groundwater contamination caused by methane migration?

To my best knowledge, such a catalog does not exist. It must also be noted that methane may be occurring naturally in groundwater.