From: Mark Kram (GT)
Sent: Tuesday, April 08, 2014 11:55 AM
To: 'David Dzombak'
Cc: Hanlon, Edward;
Subject: RE: Hydraulic Fracturing Monitoring Observations and Recommendations

Greetings,

I hope you are all doing well.

Perhaps you may have already seen this article (http://www.degruyter.com/view/j/reveh.ahead-of-print/reveh-2014-0002/reveh-2014-0002.xml?format=INT). Please note that the authors present the following statements:

1) "The objective of this paper is to illustrate that current methods of collecting emissions data, as well as the analyses of these data, are not sufficient for accurately assessing risks to individuals or protecting the health of those near UNGD sites."
2) "First, current protocols used for assessing compliance with ambient air standards do not adequately determine the intensity, frequency or durations of the actual human exposures to the mixtures of toxic materials released regularly at UNGD sites. Second, the typically used periodic 24-h average measures can underestimate actual exposures by an order of magnitude."
3) "Appropriate estimation of safety requires nested protocols that measure real time exposures."

These statements are consistent with what I described in my note below. In addition, these are consistent with what has been observed during continuous vapor intrusion monitoring (e.g., Kram et al., 2011; Johnson et al., 2012; Holton et al., 2013; ASTM, 2013). Risks can occur episodically and at a frequency that requires continuous monitoring in order to avoid false-negative conclusions.

Methods currently exist to measure and automatically display the geospatial distributions and temporal dynamics of key parameters (e.g., Methane, VOCs) and indicators (e.g., particulate matter). I know this because we've developed and implemented these methods for other types of environmental monitoring applications. For the past several years, we've approached key entities responsible for overseeing hydraulic fracturing operations, as we believe these same technologies are well-suited to meet key safety and emergency response objectives in this arena as well.

Question:
Is your group the correct entity to be in discussion with regarding our desire to integrate our concept into the safety verification and response components of hydraulic fracturing oversight? If not, would you be so kind as to introduce us to entities that would be willing to support a pilot demonstration?

If you would please be so kind as to post my note to the referenced web site below for the panel's consideration, that would be greatly appreciated.

http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/bcdc0be7c8d18b1685257ba30071a755!OpenDocument&Date=2013-11-20

Kindest Regards,

Mark

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ASTM STP1570, "Continuous Soil Gas Measurements: Worst Case Risk Parameters", eds. Everett and Kram;
http://www.astm.org/DIGITAL_LIBRARY/STP/SOURCE_PAGES/STP1570.htm

"Water is the most critical resource issue of our lifetime and our children's lifetime. The health of our waters is the principal measure of how we live on the land." Luna B. Leopold