

Monday, February 6, 2012

Westchase Hilton • 9999 Westheimer
Social Hour 5:30–6:30 p.m.
Dinner 6:30–7:30 p.m.

Cost: \$28 Preregistered members; \$35 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

Walk-ups may pay at the door if extra seats are available.

HGS General Dinner Meeting

Lisa Molofsky

John A. Connor, Albert S. Wylie,

Tom Wagner, Shahla Farhat

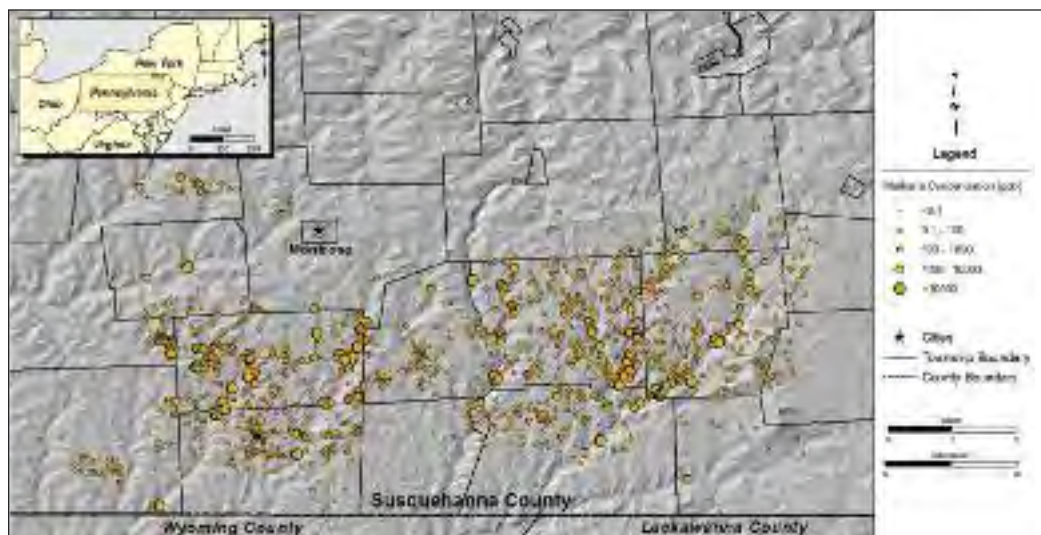
GSI Environmental Inc.

Houston, TX

HGS General Dinner Meeting

New Geochemical Data Show Methane in N.E. Pennsylvania Water Wells Unrelated to Hydraulic Fracturing

New data demonstrate that hydraulic fracturing of the Marcellus Shale has not resulted in deep shale gas impacts on water wells in northeastern Pennsylvania, as previously asserted. Rather, it appears that elevated methane concentrations in water wells originate from shallower thermogenic or biogenic gas deposits penetrated by local water and gas wells.



Test results from over 1700 water wells sampled prior to drilling or hydraulic fracturing operations show that methane is ubiquitous in water wells throughout this region, with no statistically significant difference between gas production areas — defined as the area within 1 km of an active gas well — vs. non-gas production areas. Higher concentrations are observed in topographic lows, which indicates that on a regional scale, elevated methane concentrations are best correlated to hydrogeologic features rather than shale gas fracturing. In addition, isotope analyses show the dissolved methane in these water wells to be primarily consistent either with thermogenic gas from the Upper and Middle Devonian formations overlying the Marcellus Shale or with biogenic gas from the shallow alluvium, and not indicative of impacts by Marcellus Shale gas. Historical records confirm that many shallow water and gas wells have encountered natural gas from these same horizons long before the implementation of hydraulic fracturing in the area.

Consequently, any allegation that hydraulic fracturing of the Marcellus Shale has contributed to widespread water well impacts by deep formation gas is unfounded. This apparent misapprehension underscores the need for a multiple lines-of-

evidence approach during the investigation of stray gas incidents that considers relevant geologic, historical, well construction, and isotopic data. ■

Biographical Sketch

Ms. MOLOFSKY is a Geologist with GSI Environmental Inc. in Houston, TX. Since joining GSI in 2009, she has conducted research on effective analytical approaches to the characterization and investigation of stray gas incidents, water resource management issues associated with hydraulic fracturing, the nature, occurrence, and cost of oilfield remediation projects, and the identification and quantification of sources of variability in groundwater monitoring. Prior to joining GSI, Ms. Molofsky conducted research in the use of radiogenic and stable isotopes as tracers. She received an M.S. degree in Geochemistry from the University of Arizona and a B.A. degree in Geology from Washington University in St. Louis.

