

***** MARCELLUS MATTERS: SPECIAL REPORT *****

**PROPOSED NYSDEC REGS GUARD AGAINST CONTRIBUTING FACTORS
IN WYOMING HYDRAULIC FRACTURING GROUNDWATER CASE**

The USEPA draft report on groundwater contamination in Wyoming caused by high volume hydraulic fracturing (HVHF) is being strongly questioned by Industry regarding the connection between the contamination and HVHF. The USEPA report is still in draft form, so the conclusions may change. Nonetheless, the draft report may have lessons for New York State. A closer look at the same scenario in New York State demonstrates that several HVHF practices in Pavillion, Wyoming would have violated proposed NYSDEC requirements and regulations.

On December 8, 2011 USEPA released a draft report on its investigation of groundwater contamination in Pavillion, Wyoming ("USEPA Draft Report"), which was the source of numerous complaints by domestic well owners of bad taste and odor problems. The USEPA Draft Report concludes that both shallow and deep groundwater was likely contaminated by nearby High Volume Hydraulic Fracturing ("HVHF") activities. While the release of the USEPA Draft Report is likely to be cited as evidence that HVHF cannot be conducted safely, a more careful reading of the report shows that several of the HVHF practices in Pavillion would have violated proposed NYSDEC requirements and regulations. Under those proposals, the HVHF and related operations and procedures conducted in Pavillion, Wyoming either would have not occurred or would have occurred very differently, with very likely no resulting groundwater contamination.

First, USEPA has tentatively concluded that shallow groundwater had been contaminated due to the use of surface pits for disposal of drilling cuttings, flowback and produced water. Such pits are prohibited under the NYSDEC proposed requirements and regulations for flowback and produced water, and only certain air or freshwater based drill cuttings could be managed and disposed in an on-site lined pit.

Second, USEPA noted that it was difficult to determine the source of deep groundwater contamination because (a) proprietary ingredients in the fracking additives were not known, so it was unknown whether some groundwater contaminants originated from those ingredients; and (b) there was very limited domestic well baseline data to compare before and after drilling contamination. Neither of these difficulties should occur in New York, because under the NYSDEC proposals all fracking fluid additives must be disclosed by a HVHF permit applicant and a permittee must test local well water before, during and after HVHF drilling occurs.

Third, USEPA has tentatively concluded that HVHF drilling occurred at fairly shallow depths very close to deep aquifers, surface casing did not extend below the maximum depth of the deep aquifer and cementing was insufficient in the deep aquifer zone. This

was a very likely cause of deep aquifer contamination because at one production well a blowout occurred below the surface casing, which allowed gas to enter the aquifer for a period of time. Again, NYSDEC proposals would not allow this, at least without a site-specific Environmental Impact Study, because NYSDEC's proposed regulations require site-specific study if HVHF occurs more shallow than 2000 feet below ground surface or within 1000 feet of a known underground water supply. Many of the HVHF wells in Pavilion would have triggered this requirement. In addition, casing requirements in the NYSDEC proposals would have required surface casing 75 feet below the bottom of a freshwater aquifer.

While it is impossible to remove all environmental risks associated with any industrial activity (including HVHF), the quick lesson to be learned here is that the proposed NYSDEC requirements and regulations, while adding cost and restricting gas development, may be necessary to minimize those risks and convince the public that HVHF can be conducted in an environmentally safe manner. Moreover, the additional New York-mandated costs may largely disappear or at least narrow as USEPA and various state agencies begin to regulate HVHF activities in response to this USEPA Draft Report and others likely to be issued in the future.

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