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New Report Finds Methanol an Essential, Low Risk “Fracking” Fluid

(Washington, D.C.) – A new report prepared for the Methanol Institute concludes that methanol is not expected to be a concern if it reaches groundwater or surface water when used as a component of hydraulic fracturing fluids. While the physical properties of methanol make it an essential component of hydraulic fracturing—or fracking—fluids used for enhanced natural gas extraction, methanol represents only a small fraction of the total fracking fluid volume used. The report examined several hypothetical scenarios of methanol impacting groundwater (as a result of a leaking well casing) and surface water (from discharging treated flowback water) and in each case methanol concentrations were shown to be orders of magnitude lower than methanol health-based screening levels.

“When conducted properly, fracking is a safe and strategic operation that is rapidly expanding the world’s access to natural gas,” said Methanol Institute Executive Director Gregory Dolan. “Methanol is a biodegradable chemical and an essential component in the fracking process that for all practical purposes poses no risk.”

With increasing public attention on hydraulic fracturing operations, the Methanol Institute commissioned a white paper from engineering and scientific consultant Exponent examining the fate and transport of methanol in hydraulic fracturing operations. This report examines the use of methanol in hydraulic fracturing as a common component of enhanced recovery operations by exploring its role as a fracking fluid additive, evaluating hypothetical exposure scenarios, and assessing methanol’s health risks. The Exponent report is meant to work as a supplement to a 1999 report from environmental consulting firm Malcom Pirnie on the general fate and transportation behavior of methanol. The Malcom Pirnie report concluded, “The fate and transport of methanol in the environment is well understood. Methanol spills to the soil, groundwater, and surface water will quickly biodegrade under both aerobic and anaerobic conditions and, consequently, methanol is not expected to persist.”

Although methanol has been cited as the most widely used additive in fracking fluids, it represents a miniscule portion of those liquids – commonly less than 0.001%. The Exponent report states, “While a beneficial additive for fracking operations, the actual volume of methanol used is a small fraction of the total fluid system, typically just a several hundred pounds out of what may be tens of millions of pounds of fracking fluids at a single site.” Fracking fluids are composed of 99.5% or more of water and sand, with chemicals additives included to ensure proper function of machinery and effective recovery of natural gas from certain types of rock formations. Methanol is employed in fracking due to its favorable chemical properties; namely that it aids in resisting corrosion, helps prevent freezing, and reduces friction in the fluids to enhance recovery.

Among the hypothetical scenarios examined by this report is the leak of fracking fluids from a well casing or piping resulting in a residential drinking water exposure. Even in this scenario using the most conservative assumptions, the report finds that the estimated methanol intake from drinking water would be more than 40 times *less* than the daily dietary intake from common sources like fruits and juices.

Methanol, also known as wood alcohol, is one of the most common chemical commodities in the world. Produced from natural gas, coal or renewable feedstocks, this year global methanol consumption is expected to reach 17 billion gallons.

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The Methanol Institute serves as the trade association for the global methanol industry.

The white paper is available on our website, www.methanol.org

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