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Balancing Environmental Tradeoffs Associated with Low Impact Drilling Systems to Produce Unconventional Natural Gas Resources

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Abstract

An environmental scorecard has been developed to determine the tradeoffs associated with implementing low impact drilling technology in environmentally sensitive areas. The scorecard assesses drilling operations and technologies with respect to air, site, water, waste management, biodiversity and societal issues. Low impact operations reduce the environmental footprint of operations by the adoption of new methods to use in (1) getting materials to and from the rig site (site access), (2) reducing the rig site area, (3) using alternative drilling rig power management systems, and (4) adopting waste management at the rig site. The scorecard enables a dialog to be established and maintained among all interested, concerned and affected stakeholders. In this manner, the industry has a new way of seeing itself within the larger network. The scorecard that will be presented in the paper provides the means to demonstrate the connectivity between energy production and the affected ecosystem. The Houston Advanced Research Center (HARC) is leading a consortium effort to investigate the development of low impact drilling systems. The work originated in 2005 and funding was obtained by the U.S. Department of Energy for 2006 – 2009. Additional funding for the effort was obtained through the Research Partnership to Secure Energy for America (RPSEA), industry and environmental organizations. The goal of this project is to reduce the environmental impact of rig operations through integration of low-impact site access and site operations. The paper discusses the scorecard that is being developed. The scorecard methodology presents an ecological understanding of the tradeoffs associated with producing energy. The scorecard methodology was developed through a series of workshops being held with ecologists, botanists, wildlife management experts and others in addition to oil and gas industry experts.