

# **ENVIRONMENTAL IMPACTS OF SHALE GAS AND OIL DEVELOPMENT: ASSESSMENT, MANAGEMENT AND MITIGATION**

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## **ABSTRACT**

The extraction of natural gas and oil from unconventional shale plays using horizontal drilling and hydraulic fracturing has added significantly to global gas production and reserves in recent years. At the same time, significance concerns have been raised in the media and among stakeholders regarding the environmental consequences of shale gas and oil development. In this presentation, I will layout a foundation for assessment, management and mitigation of environmental risks related to the drilling, completion and production of shale wells. Issues of particular interest are: (a) impacts on water resources, (b) groundwater contamination from surface leaks/spills and/or loss of wellbore/cement integrity, (c) methane contamination in groundwater, and (d) induced seismicity from fracturing and/or flow back.