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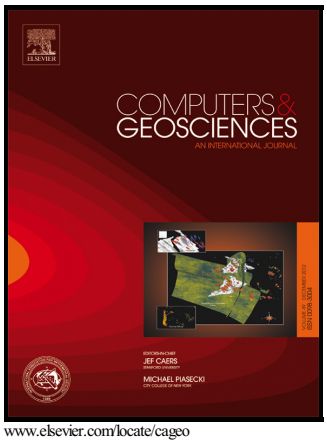

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GIS-based Geospatial Infrastructure of Water Resource Assessment for Supporting Oil Shale Development in Piceance Basin of Northwestern Colorado

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Abstract

Oil shale deposits of the Green River Formation (GRF) in Northwestern Colorado, Southwestern Wyoming, and Northeastern Utah may become one of the first oil shale deposits to be developed in the U.S. because of their richness, accessibility, and extensive prior characterization. Oil shale is an organic-rich fine-grained sedimentary rock that contains significant amounts of kerogen from which liquid hydrocarbons can be produced. Water is needed to retort or extract oil shale at an approximate rate of three volumes of water for every volume of oil produced. Concerns have been raised over the demand and availability of water to produce oil shale, particularly in semiarid regions where water consumption must be limited and