

Resolving Environmental Barriers To Oil And Gas Production On Federal Lands

DE-IA26-03NT15420

TASK 1

APD NEPA Analysis Toolkit (2003 4776-DOE3-BLM10)

Goal

The goal of this project is to perform research that will enhance oil and gas operations and associated environmental protection opportunities in partnership with the Bureau of Land Management. Specifically, it calls for the project performers to research and develop enhanced modeling tools to assist in streamlining the coalbed natural gas (CBNG) Application for Permit to Drill (APD) process in energy production basins in Wyoming.

Performers

Bureau of Land Management (BLM), Cheyenne, WY
Wyoming Geographic Information Science Center, University of Wyoming, Laramie, WY

Results

Phase I products were delivered to BLM by the University of Wyoming's Geographic Information Science Center (WyGISC), in October 2004. Phase II products were delivered to BLM by WyGISC in August, 2005. Further enhancement and refinement of these products is underway during field testing financed by contributed funds from the BLM. The toolkit was used in completing National Environmental Policy Act (NEPA) analysis of the effects of surface disturbance on soil and water resources for the Fortification Creek Oil and Gas Environmental Impact Statement. BLM and the University of Wyoming are continuing to make refinements in the toolkit during its use and application.

Benefits

Utilization of models in support of decision making provides resource managers with a defensible mechanism for resource management. Spatially distributed models that can compute and model runoff, erosion, and water quality developed for these different scales can assist resource managers in addressing these spatial complexities, validating sound management decisions, and making more timely permitting decisions. Money and time will be saved by the Federal and State regulatory agencies, as well as the industry, and more resources can be allocated to preservation or conservation of the resources on these lands.

Background

Water resource issues are a special concern in the development of conventional oil and gas and CBNG in the Powder River Basin, Atlantic Rim, and Pinedale areas of Wyoming. To date, the APD NEPA analysis has been a very time-consuming process using the data and analysis tools available for assessing effects of energy development upon soil and water resources.

This is a multi-year, three phase research and development project under an Assistance Agreement between BLM and the WyGISC. This project involves the research and development of an enhanced version of EPA's Basins 3 software package that incorporates available high-resolution, 1:24,000-scale watershed and hydrography geospatial datasets. It incorporates a link with 1:24,000-scale soils geospatial data and associated databases (soil properties and interpretations) and the development of a standard GIS protocol for use of the package in APD environmental analysis and Water Management Plan (WMP) preparation/evaluation.

Summary

Upon completion the project will deliver a cost effective, multi-resource GIS analysis package equipped with the best available GIS datasets and associated navigation, query, and analysis tools. It will provide 1) a more rapid, comprehensive, and accurate analysis of water, watershed, and soils resource impacts (e.g., erosion, runoff, sedimentation); 2) a data archive platform; 3) a standard resource analysis protocol that will not only speed the

environmental analysis process but will also provide a consistent, well-documented protocol that will aid BLM in more quickly evaluating WMPs required as part of APDs; and 4) a means to accumulate analysis results from the sub-watershed to sub-basin scale so that larger-scale cumulative water resource impact analysis and monitoring is possible. The enhanced Basins 3 package will be public domain and available to land management and regulatory agencies and industry as well. This enhanced Basins 3 package will serve the same function in other areas of the state as high-resolution soils datasets become available.

Current Status (July 2007)

Project is completed. Request for information should be directed to Rick Schuler with the BLM.

A DVD of the canned data, assessment tool, output reporter, and predictive modeling software has been delivered to BLM. Users should contact Rick Schuler (rick_schuler@blm.gov) for delivery of the Phase I and II products. Operation of the toolkit requires ArcView 3.3 and ArcGIS 9.0 be loaded on the user's computer.

Project Start: September 30, 2003

Project End: August 30, 2007

Anticipated DOE Contribution: \$28,000

Performer Contribution: \$38,000

Contact Information

NETL – John Ford (john.ford@netl.doe.gov or 918-699-2061)

BLM – Mary Nagel (mary_nagel@blm.gov or 303-236-0837)

BLM – Rick Schuler (rick_schuler@blm.gov or 307-775-6092)