Oil & Natural Gas Technology

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Quarterly Report

Comprehensive Lifecycle Planning and Management System for Addressing Water Issues Associated With Shale Gas Development in New York, Pennsylvania, and West Virginia

Submitted by:
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Prepared for:
United States Department of Energy
National Energy Technology Laboratory

Office of Fossil Energy

Quarterly Progress Report

Title: Comprehensive Lifecycle Planning And Management System For Addressing Water Issues Associated With Shale Gas Development In New York, Pennsylvania, And West Virginia

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Period: October 1, 2009 – December 31, 2009

Executive Summary

The objective of this project is to develop a modeling system to allow operators and regulators to plan all aspects of water management activities associated with shale gas development in the target project area of New York, Pennsylvania, and West Virginia ("target area"), including water supply, transport, storage, use, recycling, and disposal and which can be used for planning, managing, forecasting, permit tracking, and compliance monitoring.

The proposed project is a breakthrough approach to represent the entire shale gas water lifecycle in one comprehensive system with the capability to analyze impacts and options for operational efficiency and regulatory tracking and compliance, and to plan for future water use and disposition. It will address all of the major water-related issues of concern associated with shale gas development in the target area, including water withdrawal, transport, storage, use, treatment, recycling, and disposal. It will analyze the costs, water use, and wastes associated with the available options, and incorporate constraints presented by permit requirements, agreements, local and state regulations, equipment and material availability, etc.

By using the system to examine the water lifecycle from withdrawals through disposal, users will be able to perform scenario analysis to answer "what if" questions for various situations. The system will include regulatory requirements of the appropriate state and regional agencies and facilitate reporting and permit applications and tracking. These features will allow operators to plan for more cost effective resource production. Regulators will be able to analyze impacts of development over an entire area. Regulators can then make informed decisions about the protections and practices that should be required as development proceeds.

To ensure the success of this project, it has been segmented into nine tasks conducted in three phases over a three year period. The tasks will be overseen by a Project Advisory Council (PAC) made up of stakeholders including state and federal agency representatives and industry representatives. ALL Consulting will make the catalog and decision tool available on the Internet for the final year of the project.

In this, the first quarter of the project, work progressed on schedule, and all project deliverables were submitted on time. The Project Management Plan and Technology Status Assessment were submitted as required, and data collection under Tasks 2.0 and 3.0 was begun. No problems have been encountered to date. There were three milestones scheduled for completion during this quarter and all were met as scheduled.

Results of Work During the Reporting Period

Approach

Task 1: Project Management Plan and Technology Status Assessment

Under this task, ALL Consulting completed and submitted the Project Management Plan (PMP) and the Technology Status Assessment (TSA) for this project. The PMP was submitted on October 6, 2008, and the TSA on November 13, 2009. The TSA was revised to incorporate NETL comments on December 2, 2009. Other project management activities planned for this task were also completed. All work is progressing according to schedule.

Task 2: Research Water Issues in the Target Area, Initial System Design, and Establish a Project Advisory Committee

ALL Consulting has begun to water issues in the Marcellus shale region. ALL is reviewing previous NETL reports and other available literature prior to arranging site vists to get more detailed information on the issues and water management needs. All work is progressing according to schedule.

Task 3: Data Gathering and Field Site Assessments

ALL Consulting has begun to gather data on water requirments in the Marcellus shale region. ALL is reviewing previous NETL reports and other available literature prior to arranging site vists to get more detailed information on the issues and water management needs. All work is progressing according to schedule.

Task 4: Technology Transfer

ALL Consulting established a project web-site with initital project information and structured to provide updates to project team members and others. Work on this task is proceeding according to schedule.

Results

There are no results to report for this quarter. This is the first quarter of the project and all tasks are in the data collection phase.

Conclusion

All activities proceeded according to schedule in the first quarter of the project. The project Management Plan and the Technology Status Assessment were submitted on or before the scheduled dates. Data collection under tasks 2.0 and3.0 is proceeding as planned. All milestones were met asscheduled for this quarter, and no problems have been encountered to date.

Milestone Status Table

Budget Period	Milestone Description	Status	Planned Completion Date	Actual Completion Date
I	Completion of PMP	Completed	12/04/09	12/01/09
	Completion of Technology Status Assessment	Completed	11/14/09	11/14/09
	Develop project web-site	Completed	12/04/09	12/04/09
	Completion of Initital issue Analysis	On Track	03/30/10	
	Complete Site Visits	On Track	09/30/10	
	Deliver topical report	On Track	09/30/11	

COST/PLAN STATUS

Baseline Reporting Quarter	YEAR 1 Start:10/01/08 End: 09/30/09 Q1	Q2	Q3	Q4	YEAR 2 Start: 10/01/09 End: 09/30/10 Q1	Q2	Q3	Q4	YEAR 3 Start: 10/01/10 End: 09/30/11 Q1	Q2	Q3	Q4
Baseline Cost Plan (from SF-424A)												
Federal Share	81,258	81,258	81,258	81,256	83,511	83,511	83,511	83,511	64,652	34,546	34,546	34,552
Non-Federal Share	27,599	27,599	27,599	27,599	21,232	21,232	21,232	21,232	16,708	11,025	11,025	11,025
Total Planned (Federal and Non-Federal)	108,857	108,857	108,857	108,857	104,743	104,743	104,743	104,743	81,360	45,570	45,570	45,570
Cumulative Baseline Cost	108,857	217,714	326,571	435,426	504,169	644,912	749,655	854,398	935,758	1,017,118	1,098,478	1,179,838
Actual Incurred Costs												
Federal Share	40,882											
Non-Federal Share	17,640											
Total Incurred Cost-Quarterly (Federal and Non-Federal)	58,522											
Cumulative Incurred Costs	58,522											
Variance												
Federal Share	40,376											
Non-Federal Share	9,959											
Total Variance-Quarterly (Federal and Non-Federal												
Cumulative Variance	50,335											

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