

**Award No. DE-FC26-05NT42666
Battelle Pacific Northwest Division**

**Gas Hydrates Assessment
B. Peter McGrail, Principal Investigator**

Q4 (Jul-Sep) FY2006

Executive Summary

This project will compare and contrast, through numerical simulation, conventional and innovative approaches to producing methane from gas hydrate-bearing geologic reservoirs. Initially, the project will investigate the production of gas hydrates from idealized reservoir configurations. If the initial investigation shows promise for the innovative approaches, additional simulation studies will be conducted using actual gas hydrate reservoir data from the Alaska North Slope (ANS) region. The project is still in the initial planning phase with the work so far focused on development of a comprehensive Research Management Plan and Statement of Project Objectives. Issuance of Statements of Work to partner institutions, University of Alaska – Fairbanks, and International Separations Technologies, Inc. is in progress. Preparation of a Technology Status Assessment Report will begin in the Q1 of FY07.

Results of Work During Reporting Period

Phase I

Task 1: Project Management

B.P. McGrail traveled to Morgantown, WV on July 20-21 for a project kickoff meeting. A presentation on the planned project work scope and computer simulation tool we plan to use was given. Additional comments on the RMP were received from the NETL COR and a final draft submitted and accepted by the COR.

Task 2: Tech Status Assessment

Statements of Work have been initially drafted in preparation for issuing subcontracts to the University of Alaska – Fairbanks and International Separations Technologies, Inc. These subcontracts need to be issued prior to start of work on the TSA document.

Task 3: Basic reservoir Simulation

Until approval to start work on Task 3 has been received, very limited activities have been performed. Some review and testing of the newly developed solution algorithms for computing the hydrate and ice saturations and flow of liquid CO₂ was done during a visit by Dr. Won Suk Lee from the Korea Institute of Geoscience and Mineral Resources (KIGAM). Dr. Lee executed and tested the STOMP-HYD simulator on a suite of verification problems involving gas hydrate production using thermal stimulation, depressurization, and CO₂ exchange. We plan to follow-up with Dr. Lee in having KIGAM formally join this project as a partner.

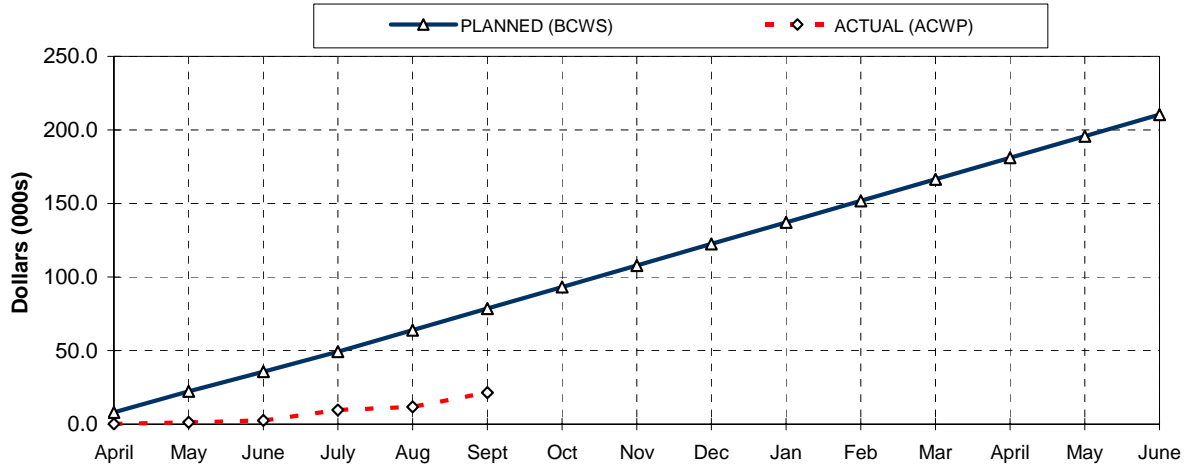
Task4: Reservoir Simulation with ANS Field Data

This task is not scheduled to start until Task 3 scope has been completed.

Significant Issues and Corrective Action

Initiation of Task 2 and Task 3 work has been delayed due to more extensive modification and revisions to the RMP than expected. Senior staff have also had very limited time available due to other project commitments. This situation is expected to significantly improve after Q1 of FY07.

Planned and Actual Cumulative Spending Curve
(DOLLARS IN THOUSANDS)



(\$K)	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	FY07
Planned Cost	7.97	14.33	13.37	13.7	14.64	14.64	14.6	14.6	14.64	14.6	14.64	14.6	14.6	14.6	14.64	210.4
Actual Cost by Month	0.2	1.1	1.2	7.1	2.2	9.7										21.5
Variance Cost	7.7	13.2	12.2	6.6	12.5	4.9										
Cumulative Planned	8.0	22.3	35.7	49.4	64.0	78.6	93.3	107.9	122.6	137.2	151.8	166.5	181.1	195.8	210.4	210.4
Cumulative Actual	0.2	1.3	2.5	9.6	11.8	21.5										
Cumulative Variance	7.7	21.0	33.1	39.7	52.2	57.1										

Milestones	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
Task 1. Prepare a Research Development Plan	—————☆														
Task 2. Prepare a technology Status Assessment									△						
Project Kickoff Meeting				☆											
Complete Research Management Plan						☆									
Quarterly Reports			☆			☆			△			△			△

LEGEND	SCHEDULED	△	DEVIATION	□	COMPLETED	☆
	TIME LINE	—————	⊗			⊗

Cost share is not applicable until start of Task 3 activities has been approved.