

# Oil & Natural Gas Technology

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## Quarterly Research Performance Progress Report (Period ending 6/30/2013)

### Methane Hydrate Field Program

Project Period (October 1, 2012 - September 30, 2013)

Submitted by:

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Signature

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Office of Fossil Energy

## **ACCOMPLISHMENTS:**

The primary objective of the project is to conduct scientific planning that will help enable future scientific ocean drilling, coring, logging, testing and analytical activities to assess the geologic occurrence, regional context, and characteristics of methane hydrate deposits along the continental margins of the U.S. with an emphasis on the Gulf of Mexico and the Atlantic margin.

### **What are the major goals of the project?**

The goals that must be reached to obtain the objective are to assemble the gas hydrate project science team led by a community liaison. Engage the hydrate community through a community workshop and to develop an implementable methane hydrate “science plan” for a future hydrate sampling program.

### **What was accomplished under these goals?**

The major activities and accomplishments of this reporting period were to:

- Finalize the Methane Hydrate Historical Review and Synthesis document and post on the project website. This was an important step to complete prior to the June 4-6<sup>th</sup> workshop to ensure all participants had access to the documents. The historical review document was also created to serve as guiding document to the workshop agenda. The project team held regular meetings with the Methane Hydrate Science Team using audio conference calls to finalize the document. The document as then sent to DOE and posted on the project website.
- Workshop planning also continued during the reporting period with the finalization and distribution of workshop agenda. Substantial effort was been applied to completing the draft workshop plan which led to the creation of a list of challenges as determined by the methane hydrate research community. The list of challenges was used to create an engaging workshop agenda that will lead to a vital methane hydrate science plan. The challenges that will be explored in the workshop through plenary and breakout groups are:
  1. Methane Hydrate Resource Assessment
  2. Methane Hydrate Production Analysis
  3. Methane Hydrate Related Geohazards
  4. Methane Hydrate Role in the Global Carbon Cycle
  5. Methane Hydrate Petroleum Systems
  6. Methane Hydrate Laboratory and Field Characterization
- The Marine Hydrate Workshop was successfully completed on June 4-6<sup>th</sup> in Washington, D.C. The workshop was attended by 59 scientists and engineers who engaged in structured dialog to work towards creating a clear outcome. The challenges listed above, were distributed among three breakout groups for detailed discussion and soliciting for possible drill site locations to address the methane hydrate challenges. A comprehensive set of notes and presentations were collected at the workshop and then prepared for posting on the project website.
- A draft workshop report has been created and circulated to science team for comment. The document will be refined early in fourth quarter and then posted on the project website.

A list of the milestones and associated completion dates are listed in the chart below.

Milestone Title/Description	Planned Completion Date	Actual Completion Date	Milestone Status Report	
			Verification Method	Comments (Progress towards achieving milestone, explanation of deviation from plan, etc.)
Secure Lead Community Liaison	5-Oct-12	5-Oct-12	Email notification to DOE	Completed. Tim Collett will serve at LCL
Attend the project kickoff meeting	15-Oct-12	15-Oct-12	Participate in online Meeting	Completed. Team attended online meeting
Finalize Hydrate Science Team	9-Nov-12	31-Dec-12	Email list to DOE	Completed. Team finalized
Complete review of historical projects	4-Jan-13	31-Mar-13	Email report to DOE	Completed. Compiled report, circulated for hydrate team review, finalized draft and sent to DOE. Now preparing for website distribution
Create workshop plan and send invitations	4-Jan-13	5-Feb-13	Email plan and invitation to DOE	Completed. Generated the draft workshop plan and invitee list. COL sent out invitations
Hold workshop and complete workshop report	21-Jun-13		Execute workshop plan	The workshop was successfully completed on June 4-6, 2013. A draft workshop report has been circulated and will be completed in early Q4
Complete hydrate science plan writing meeting	5-Jul-13		Hold science plan writing meeting	Now scheduled for July 24-26, at COL - Washington, D.C.
Circulate the hydrate science plan draft for review	16-Sep-13		Email draft plan to DOE	The draft science plan will be provided to DOE in advance of the end of the fiscal year
Finalize and submit hydrate science plan to DOE	30-Sep-13		Email science plan to DOE	When complete, the hydrate science plan will be disseminated by mail, email and web

The milestones have been established to support the creation of the primary project deliverables listed below.

- Historical Methane Hydrate Project Review and Synthesis**  
 This brief report includes a systematic review of goals and accomplishments of the ODP-IODP and other industry sponsored historical methane hydrate research drilling expeditions to date. This effort identifies the most critical unknowns (challenges) relative to our understanding of the geologic controls on the occurrence of methane hydrate in nature and how these factors may impact the energy resource potential of methane hydrates. This review includes the analysis of both technical concerns that are related to the universal occurrence of methane hydrates and specific regional concerns that may be unique to a given region or hydrate accumulation. This “living document” is being used to construct the agenda for the “U.S. Hydrate Community Drilling Workshop”.
- Workshop Report**  
 The Workshop Report will include a complete synthesis of the results of the U.S. Hydrate Community Drilling Workshop, which will be incorporated into the final version of this historical review and will be used as the genesis of the Methane Hydrate Project Science Plan. A draft of this report has been circulated to the hydrate science team and DOE staff.

- **Methane Hydrate Project Science Plan**  
Methane hydrate project science plan document represents the primary deliverable of this proposed project. The methane hydrate project science plan is intended to set the goals for a future hydrate drilling expedition and sampling program. The methane hydrate project science plan, as prepared by the Project Science Team, will build upon the foundation of the “Historical Methane Hydrate Project Review and Synthesis” and the “workshop report”. The science plan will include specific recommendations for location of drilling leg(s) and drill sites specifically selected to address the methane hydrate research goals identified in this study. Various technical concerns will also be addressed, including recommendations regarding the type and amount of conventional and pressure cores that should be acquired, the type of core analysis that should be performed, the acquisition of the wireline and/or logging-while-drilling log data, and possible allocations for formation testing. It is envisioned that “methane hydrate project science plan” will be similar to a less detailed version of an IODP Expedition Prospectus that are produced as part of the normal IODP planning process.

**What opportunities for training and professional development has the project provided?**

Nothing to report

**How have the results been disseminated to communities of interest?**

A website was established in the first quarter, and located at [www.oceanleadership.org/methane](http://www.oceanleadership.org/methane). This has been used for disseminating workshop information, meetings reports and other pertinent documents to the communities of interest. The presentations from the workshop and the workshop report will be posted on the website as soon as all releases have been obtained.

**What do you plan to do during the next reporting period to accomplish the goals?**

The draft workshop report will be finalized early in the fourth quarter. The science team will convene again in Washington DC on July 24-26 to draft the methane hydrate science plan. The team will draw from the comments and notes collected during the workshop to create coherent and succinct science plan draft. The science plan will be completed by the end of the fourth quarter.

**PRODUCTS:**

**What has the project produced?**

A working draft of the Historical Methane Hydrate Project Review and Synthesis document was reviewed and finalized by the Methane Hydrate Science Team and sent to DOE during a previous reporting period. This document has been posted on the project website located at [www.oceanleadership.org/methane](http://www.oceanleadership.org/methane). The project has also conducted a community workshop that has energized the community and effectively solicited information needed to write the hydrate science plan.

**PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS:**

**Who has been involved?**

**What individuals have worked on the project?**

**Greg Myers-COL**

PI

Nearest Person Month Worked: 0.5  
Contributions to the project: Led the project  
Funding Support: N/A  
Collaborated with individual in foreign country: Yes  
Countries of foreign collaborators: Korea, Norway  
If traveled to foreign country(ies), duration of stay: 0

**David Divins-COL**

PI

Nearest Person Month Worked: 0.25  
Contributions to the project: Led the project  
Funding Support: N/A  
Collaborated with individual in foreign country: Yes  
Countries of foreign collaborators: Korea, Norway  
If traveled to foreign country(ies), duration of stay: 0

**Tim Collett-USGS**

Lead Community Liaison

Nearest Person Month Worked: 0.5  
Contributions to the project: helped lead the workshop and science team  
Funding Support: N/A  
Collaborated with individual in foreign country: Yes  
Countries of foreign collaborators: Korea, Norway  
If traveled to foreign country(ies), duration of stay: 0

**What other organizations have been involved as partners?**

Nothing to report

**Have other collaborators or contacts been involved?**

We continue to utilize the Methane Hydrate Science Team to discuss project issues and deliverables. The team meets via teleconference bi-weekly.

**IMPACT:**

By engaging academic and industry experts in the field of marine methane hydrates, the project team heightened the awareness of work being initiated by DOE-NETL. Through the community workshop, the methane hydrate community has been energized and the project now has the information need to create an impactful methane hydrate science plan.

**CHANGES/PROBLEMS:**

Nothing to report

**SPECIAL REPORTING REQUIREMENTS**

Nothing to report

**BUDGETARY INFORMATION:**

See SF-425 under separate cover

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