

Oil & Natural Gas Technology

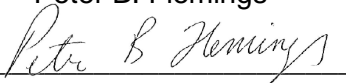
DOE Award No.: DE-FE0023919

Quarterly Research Performance Progress Report (Period Ending 03/31/2015)

Deepwater Methane Hydrate Characterization and Scientific Assessment

Project Period 10/01/2014 – 09/30/2018

Submitted by:
Peter B. Flemings


Signature

The University of Texas at Austin
DUNS #:170230239
101 East 27th Street, Suite 4.300
Austin, TX 78712-1500
e-mail: pflerings@jsg.utexas.edu
Phone number: (512) 475-9520

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

April 27, 2015



Office of Fossil Energy

1. ACCOMPLISHMENTS:

What was done? What was learned?

This report outlines the progress of the second quarter of the first budget period.

a. What are the major goals of the project?

The goals of this project are to plan and execute a state of the art field program in the Gulf of Mexico to characterize methane hydrates. The project team will acquire conventional core, pressure core, and downhole logs, and perform in situ testing and measure physical properties in methane hydrate reservoirs in the Gulf of Mexico (GOM) to meet this goal.

In Budget Period 1, we will analyze potential drilling sites and submit a Complementary (sp?) Project Proposal (CPP) to the Integrated Ocean Drilling Program (IODP). In Budget Period 2, detailed operational planning will commence as specific drilling plans are drawn up at each site, science party members are identified, the pressure coring system is tested and permitting takes place. In Budget Period 3, we will execute the drilling program and collect natural methane hydrate samples and characterize the in situ methane hydrate reservoir at the site locations in the Gulf of Mexico. Following the successful drilling program, we will perform initial analysis of the results and report our findings in the cruise specific IODP Proceedings Volume and in a special peer-reviewed journal volume. The Project Milestones are listed in the table below.

Milestone Description	Planned Completion	Actual Completion	Verification Method	Comments
Milestone 1A: Update Project Management Plan	9/15/2014	03/18/2015	Project Management Plan	Turned in within 30 days of award definitization
Milestone 1B: Project Kick-Off Meeting	10/1/2014	12/11/2014	Presentation	Complete
Milestone 1C: Achieve ranked list of priority drilling locations	3/31/2015		Phase 1 Report	In progress (80%) – Potential sites identified and general prioritization set
Milestone 1D: Achieve detailed plan on scientific drilling goals	9/30/2015 (Y1 Q4)		Phase 1 Report	75% - Scientific plans set for each potential site, need to add operational and logistics planning
Milestone 1E: Updated CPP submitted	9/30/2015 (Y1 Q4)		Quarterly Report / Phase 1 Report	99% - All documentation complete, CPP to be submitted April 1st
Milestone 2A: Scheduling of Hydrate Drilling Leg by IODP	6/30/2016 (Y2 Q3)		Scheduling of Hydrate Drilling Leg by IODP	
Milestone 2B: Demonstration of a viable PCS tool for hydrate drilling	9/30/2016 (Y2 Q4)		Pressure Core Field Test Report	
Milestone 3A: Research Expedition Staffing Complete	12/1/2016 (Y3 Q3)		Quarterly Report	

Milestone 3B: Drilling/Logging/Coring/Sampling Operation Plan Completed	1/01/2017 (Y4 Q2)		Phase 3 Report	
Milestone 3C: Complete Hazards Review	6/30/2018 (Y4 Q3)		Phase 3 Report	
Milestone 3D: Acquisition of all drilling permits	4/1/2018		Phase 3 Report	
Milestone 3E: Acquisition of intact pressurized sandstone cores rich in hydrate	6/30/2018 (Y4 Q3)		IODP Report / Volume	
Milestone 3F: Acquisition of detailed log suite through log interval	6/30/2018 (Y4 Q3)		IODP Report / Volume	
Milestone 3G: Acquisition of in situ pressure & temperature measurements	6/30/2018 (Y4 Q3)		IODP Report / Volume	
Milestone 3H: in situ pressure measurements and pressure drawdown test in hydrate	6/30/2018 (Y4 Q3)		IODP Report / Volume	
Milestone 3I: Analysis of composition, habit, concentration, and petrophysical properties in hydrate-rich sandstone core	9/30/2018 (Y4 Q4)		IODP Report / Volume	

b. What was accomplished under these goals?

CURRENT - BUDGET PERIOD 1 – SITE SELECTION

Task 1.0 Project Management and Planning

Plan Finish: 09/30/18

Actual Finish: In progress

- Project Management Plan was submitted to DOE on March 18, 2015
- Began hiring process for two postdoctoral positions at UT-Austin
 - Conducted interviews and hosted two candidates on campus
- Regular Project Team meetings
- Definitization discussions and modifications support
- Sub-award negotiations
- Agreed on process for reporting accruals to DOE
- Accounting meeting held with UT-Austin administration to establish procedures for drawdown requests to DOE and documentation of match
- Subawards sent to Ohio State University (OSU), Lamont-Dohearty Earth Observatory (LDEO), and the Consortium for Ocean Leadership (COL) for signature
 - LDEO subaward fully executed

Task 2.0 Site Analysis and Selection

Plan Finish: 03/31/15

Actual Finish: In progress

Subtask 2.1 Site Analysis

Plan Finish: 12/31/14

Actual Finish: 3/31/15

- Site Review was held in Austin, Texas on January 27 and 28
 - Site Review Team members, BOEM representatives, and DOE sponsors attended
- Seismic acquired
 - Seismic agreements executed with Schlumberger WesternGeco covering the Orca Basin and Perdido areas
 - Schlumberger WesternGeco also provided seismic data over the former JIP sites (Terrebonne and Sigsbee)
- Non-disclosure agreement amendment negotiated with BP for project's use of Mad Dog data under existing UT/Mad Dog Parties NDA
- UT began building ArcGIS model encompassing data over all sites
- IODP CPP Submission
 - Weekly meetings held in March with proponents to discuss seismic interpretation, drilling locations, etc.
 - Site scientific objectives, desired measurements, and tools required outlined for each potential site
 - 11 sites identified – 9 primary, 2 alternate
 - Terrebonne (WR313) – 3 sites
 - Sigsbee (GC955) – 1 site
 - Mad Dog – 2 sites
 - Orca – 4 sites (2 primary, 2 alternate)
 - Perido – 1 site

Subtask 2.2 Site Ranking

Plan Finish: 03/31/15

Actual Finish: In Progress

- Team has identified primary v. alternate sites
- Once base logistics and operations plans set, will have enough information to prioritize sites further

Task 3.0 Develop Pre-Expedition Drilling / Logging / Coring / Sampling Operational Plan

Plan Finish: 09/30/15

Actual Finish: In progress

- Started as part of CPP submission

Task 4.0 Complete and Update IODP CPP Proposal

Plan Finish: 09/30/15

Actual Finish: In Progress

- CPP proponents named
- CPP Writing Workshop held in Austin, Texas on January 26 – 30

- CPP Update web conferences held to coordinate progression of analysis, documentation, and submittal
- CPP will be submitted to IODP on April 1, 2015 (copy to be submitted with Phase 1 Report)
- Began preparations for submitting data to IODP SSDB (due to IODP by May 1)

Task 5.0 Pressure Coring and Core Analysis System Modification and Testing

Plan Finish: 09/30/15

Actual Finish: In Progress

- Project Introduction / Kickoff meeting held with Geotek Coring (February 23, 2015)
 - Overview of project
 - Initiation of contract negotiations/establishment
 - Attendees
 - Peter Flemings
 - Anna Tachau
 - Peter Polito
 - Tom Pettigrew
 - Jim Aumann
 - Richard Baker
 - David Divins
 - Timothy Collett
 - William Waite
- Pressure Coring Scientific Planning Workshop held in Austin, Texas on March 9 and 10, 2015
 - Topics:
 - Review scientific, technical and logistical goals of the DOE drilling experiment
 - Review recent scientific achievements in pressure coring
 - Review current pressurized coring capabilities
 - Develop Science Plan for DOE Drilling
 - Shipboard science, and sampling
 - Shore-based analysis
 - Develop a project team composed of scientists and institutions enthused with participating in research program
 - PCS experts attended to discuss past experiences and work on scientific plans for this project
 - PCS Workshop Report drafted
 - Presentations and other documents posted to Box account for participants to download
 - Attendees
 - Brian Anderson
 - Richard Baker
 - Sheng Dai
 - Hugh Daigle
 - Kristopher Darnell
 - David DiCarlo
 - David Divins
 - Nicolas Espinoza
 - Peter Flemings

- Tetsuya Fujii
- Melanie Holland
- Tim Kneafsey
- Carolyn Koh
- Yoshihiro Konno
- Joo Young Lee
- Dylan Meyer
- Jiro Nagao
- Tom Pettigrew
- Peter Polito
- Carolyn Ruppel
- Peter Schultheiss
- Yongkoo Seol
- Kiyofumi Suzuki
- Anna Tachau
- William Waite
- Jun Yoneda
- Kehua You
- Test plans created for lab and field testing
- Draft plans created for offshore testing
- Land-based Field test planning initiated
 - Started negotiations with Schlumberger for use of Cameron testing facility
 - Field testing dates set for Schlumberger's Cameron testing facility: December 4 – 14
- PCTB Lab/Bench testing conducted at Aumann and Associates in Salt Lake City, Utah the week of March 23
 - Attendees
 - Jim Aumann
 - Tom Pettigrew
 - Peter Polito
 - Aumann and Associates staff
 - Tool generally functioned well
 - Pressure data shows PCTB seals correctly
 - We think some potential mechanical issues could be due to testing tool in horizontal position (causing curvature in the pipe) instead of vertically straight
 - No anticipated tool modifications resulting from findings during lab testing
- Summary of March lab tests
 - Executive Summary: Four days were spent bench testing the PCTB at Aumann and Associates. The tool was tested using two different fluids (water and mud) at two different simulated bottom hole pressures (500 and 1200 psi). Prior to testing there were concerns that the ball would not fully close prior to the pressure boost in the presence of mud, leading to an unpressurized autoclave. When operated correctly, the tool performed as expected under all conditions. The ball actuated when activated and shut prior to the pressure boost release. Once the autoclave was pressurized it held pressure indefinitely. Analysis of the tests where the PCTB did not operate as expected revealed human error as the source of the failure.
 - Full Function Test (FFT) #1 – Autoclave pressure tested to 3,000 psi, boost @ 700 psi, bottom hole pressure set @ 500 psi

- Failure, autopsy showed release sleeve collet was mismade; sleeve re-worked at machine shop (human error)
- FFT #2 – Boost @ 700 psi, bottom hole pressure set @ 500 psi.
 - Success
- FFT #3 – Autoclave pressure tested to 3,000 psi, boost @ 700 psi, bottom hole pressure set @ 500 psi.
 - Success
- FFT #4 – Autoclave pressure tested to 3,500 psi, boost @ 700 psi, bottom hold pressure set @ 500 psi
 - Success
- FFT #5 – Boost @ 1,700 psi, bottom hole pressure @ 1,500 psi
 - Failure (inner rod had partial stroke, ball actuated but boost did not dump) – autopsy showed valve closed in test setup and external plumbing caused the inner rod to hydro lock (human error)
- FFT #6 – Boost @ 1,700 psi, bottom hole pressure @ 1,500 psi
 - Success
- FFT #7 (begin testing tool with mud) - boost @ 700 psi, bottom hole pressure set @ 500 psi
 - Failure (inner rod stopped moving after ~4", ball and boost did not actuate) – autopsy showed partially cut polypak seal as if it had been in a bind
- FFT #8 - boost @ 700 psi, bottom hole pressure set @ 500 psi
 - Success (inner rod stopped moving after ~5") – reviewed test setup, found nothing wrong, adjusted jack stand to straighten and level tool, pulled on inner rod and ball actuated then boost dumped; binding of inner rod may have been problem all along
- FFT #9 - boost @ 700 psi, bottom hole pressure set @ 500 psi
 - Failure (inner rod did not pull) – autopsy found hoses incorrectly hooked up creating a different hydraulic lock (human error)
- FFT #10 – boost @ 700 psi, bottom hole pressure set @ 500 psi
 - Success

FUTURE – BUDGET PERIOD 2 – REFINE AND PLAN DRILLING PROGRAMS

Task 6.0 Technical and Operational Support of CPP

Plan Finish: 09/30/16

Actual Finish: Not Started

Task 7.0 Research Vessel Access

Plan Finish: 09/30/16

Actual Finish: Not Started

Task 8.0 Refine Detailed Drilling / Logging / Coring / Sampling Operational Plan

Plan Finish: 09/30/16

Actual Finish: Not Started

Task 9.0 Assemble and Contract Pressure Coring Team Leads

Plan Finish: 09/30/16

Actual Finish: Not Started

Task 10.0 Plan for Permitting Process

Plan Finish: 09/30/16
Actual Finish: Not Started

Task 11.0 Review and Complete NEPA Requirements

Plan Finish: 09/30/16
Actual Finish: Not Started

Task 12.0 Pressure Coring and Core Analysis Systems

Plan Finish: 09/30/16
Actual Finish: Not Started

Subtask 12.1 Pressure Coring and Core Analysis System Modifications

Plan Finish: 09/30/16
Actual Finish: Not Started

Subtask 12.2 Field Test of Pressure Coring System

Plan Finish: 09/30/16
Actual Finish: Not Started

FUTURE – BUDGET PERIOD 3 – DRILLING AND POST EXPEDITION ANALYSIS

Task 13.0 Contract Project Scientists and Establish Project Science Team

Plan Finish: 12/01/16
Actual Finish: Not Started

Task 14.0 Finalize Drilling/Logging/Coring/Sampling Operational Plan

Plan Finish: 01/01/17
Actual Finish: Not Started

Task 15.0 Perform Hazard Review

Plan Finish: 04/01/17
Actual Finish: Not Started

Task 16.0 Field Operations

Plan Finish: 09/30/18
Actual Finish: Not Started

Subtask 16.1 Mobilization of a Scientific Ocean Drilling and Pressure Coring Capability

Plan Finish: 04/01/18
Actual Finish: Not Started

Subtask 16.2 Field Project Management, Operations and Research

Plan Finish: 07/01/18
Actual Finish: Not Started

Subtask 16.3 Demobilization of staffs, labs, and equipment

Plan Finish: 09/30/18
Actual Finish: Not Started

Task 17.0 Project Data Analysis and Reporting

Plan Finish: 09/30/18
Actual Finish: Not Started

Subtask 17.1 Sample and Data Distribution and Archiving

Plan Finish: 09/30/18
Actual Finish: Not Started

Subtask 17.2 Collaborative Post-Field Project Analysis of Geologic Data and Samples

Plan Finish: 09/30/18
Actual Finish: Not Started

Subtask 17.3 Proceedings of the IODP Volume

Plan Finish: 09/30/18
Actual Finish: Not Started

Subtask 17.4 Scientific Results Volume and Technical Project Presentations

Plan Finish: 09/30/18
Actual Finish: Not Started

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

- At the Pressure Coring and Analysis: Gulf of Mexico Scientific Planning Workshop, experts shared their past experiences and providing insight into future PCS developments
- Two project team members (Peter Polito and Tom Pettigrew) were able to participate in the Pressure Core Tool with Ball (PCTB) lab/bench test at Aumann and Associates in Salt Lake City, Utah
 - This was beneficial to the team's general understanding of the tool's current functionality as well as the modifications required for the tool to meet our testing objectives

d. How have the results been disseminated to communities of interest?

- As a follow up to the Pressure Coring and Analysis: Gulf of Mexico Scientific Planning Workshop, a PCS Scientific Report was drafted
 - Final version will be posted to the project's website (targeting April)
 - Presentations and other documents from workshop have been posted to a Box account for participants to download and share with their respective organizations and colleagues

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

Task 4.0 Complete IODP CPP Proposal

- Submit IODP CPP proposal documentation on April 1
- Upload site surveys to IODP SSDB database by May 1

Task 5.0 Pressure Coring and Core Analysis System Modifications and Testing

- Complete final lab testing of PCTB (last mud tests remaining)
- Geotek Coring to provide test results, data, and findings upon completion

- Finalize negotiations / prepare Schlumberger Cameron field testing contract for execution

2. PRODUCTS:

What has the project produced?

- PCS Scientific Planning Workshop
 - Drafted PCS Scientific Planning Workshop Report
- Complementary Project Proposal (CPP)
 - To be submitted on April 1

a. Publications, conference papers, and presentations

Nothing to Report.

b. Website(s) or other Internet site(s)

The Project's Website was set up and can be found here: <http://www.ig.utexas.edu/gom2/>

The site is structured to contain:

- Project Description (summary, timeline, etc.)
- Project Status (photos, videos, etc.)
- Press (news articles, press releases, videos, etc.)
- Team (bios, contact information, etc.)
- Hiring
- Publications
- Other Useful Links

c. Technologies or techniques

Nothing to Report.

d. Inventions, patent applications, and/or licenses

Nothing to Report.

e. Other products

Nothing to Report.

3. CHANGES/PROBLEMS:

This section highlights changes and problems encountered on the project.

a. Changes in approach and reasons for change

SOPO was revised to add a task for Pressure Coring System modifications and testing in Budget Period 1. Retrieving pressure cores is an integral part of this project, and both UT and DOE agreed it would be best to start modifications and testing as soon as possible.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Field testing of the PCTB has been delayed to Budget Period 2. Geotek Coring (anticipated PCS contractor) has several conflicting sea expeditions during Budget Period 1 and will not be able to conduct a field test until late 2015. However, some of the expeditions Geotek Coring will be participating in may be using the PCTB as part of their programs which would provide further tool testing and identify any additional modifications. Budget and scope adjustments will be negotiated with DOE in the third and/or fourth quarter.

c. Changes that have a significant impact on expenditures

Although no costs have been quoted, and no contract is in place with Geotek Coring for their PCS services, we anticipate a price increase due to decreased competition and vendor availability.

d. Change of primary performance site location from that originally proposed

Nothing to Report.

4. SPECIAL REPORTING REQUIREMENTS:

Special reporting requirements are listed below.

CURRENT - BUDGET PERIOD 1 – SITE SELECTION

Task 1 – Project Management Plan

- Submitted to DOE

Task 2 – Site Location and Ranking Report

- Will be included as a sub report in the Phase 1 Report

Task 3 – Preliminary Drilling/Logging/Coring/Sampling Operational Plan Report

- Will be included as a sub report in the Phase 1 Report

FUTURE – BUDGET PERIOD 2 – REFINE AND PLAN DRILLING PROGRAMS

Tasks 8 to 11 – Refined Operational Plan (Task 8), Pressure Coring Team Report (Task 9), Permitting Report (Task 10), and Environmental Review Report (Task 11)

- Will be included as sub reports in the Phase 2 Report

Task 12 – Pressure Core Field Test Report

- Will be issued within 60 days of field test completion

FUTURE – BUDGET PERIOD 3 – DRILLING AND POST EXPEDITION ANALYSIS

Task 14 - Final Drilling/Logging/Coring/Sampling Operational Plan Report

- Will be included as a sub report in the Phase 3 Report

Task 15 – Field Program Hazards Report

DOE Award No.: DE-FE0023919

Quarterly Research Performance Progress Report (Period ending 3/31/2015)

Deepwater Methane Hydrate Characterization and Scientific Assessment

- Will be included as a sub report in the Phase 3 Report

Task 16 – IODP Preliminary Expedition Report

- Will email copy of publication to DOE Officer

Task 17.1 – Project Sample and Data Distribution Plan

- Will be included as a sub report in the Phase 3 Report

Task 17.3 – IODP Proceedings Expedition Volume

- Will email copy of publication to DOE Officer

Task 17.4 – Expedition Scientific Results Volume

- Will email copy of publication to DOE Officer

5. BUDGETARY INFORMATION:

The Cost Summary is located in Exhibit 1.

EXHIBIT 1 – COST SUMMARY

Baseline Reporting Quarter	Budget Period 1							
	Q1		Q2		Q3		Q4	
	10/01/14-12/31/14		01/01/15-03/31/15		04/01/15-06/30/15		07/01/15-09/30/15	
	Q1	Cumulative Total	Q2	Cumulative Total	Q3	Cumulative Total	Q4	Cumulative Total
Baseline Cost Plan								
Federal Share	\$ 546,303	\$ 546,303	\$ 2,171,304	\$ 2,717,607	\$ 1,341,303	\$ 4,058,910	\$ 546,303	\$ 4,605,213
Non-Federal Share	\$ 324,627	\$ 324,627	\$ 15,057,876	\$ 15,382,503	\$ 324,627	\$ 15,707,130	\$ 324,627	\$ 16,031,757
Total Planned	\$ 870,930	\$ 870,930	\$ 17,229,180	\$ 18,100,110	\$ 1,665,930	\$ 19,766,040	\$ 870,930	\$ 20,636,970
Actual Incurred Cost								
Federal Share	\$ 51,635	\$ 51,635	\$ 1,818,533	\$ 1,870,168				
Non-Federal Share	\$ 15,345	\$ 15,345	\$ 92,845	\$ 108,190				
Total Incurred Cost	\$ 66,980	\$ 66,980	\$ 1,911,378	\$ 1,978,358				
Variance								
Federal Share	\$ (494,668)	\$ (494,668)	\$ (352,771)	\$ (847,439)				
Non-Federal Share	\$ (309,282)	\$ (309,282)	\$ (14,965,031)	\$ (15,274,313)				
Total Variance	\$ (803,950)	\$ (803,950)	\$ (15,317,802)	\$ (16,121,752)				

Baseline Reporting Quarter	Budget Period 1							
	Q1		Q2		Q3		Q4	
	10/01/14-12/31/14		01/01/15-03/31/15		04/01/15-06/30/15		07/01/15-09/30/15	
	Q1	Cumulative Total	Q2	Cumulative Total	Q3	Cumulative Total	Q4	Cumulative Total
Baseline Cost Plan								
Federal Share	\$ 546,303	\$ 546,303	\$ 2,171,304	\$ 2,717,607	\$ 1,341,303	\$ 4,058,910	\$ 546,303	\$ 4,605,213
Non-Federal Share	\$ 324,627	\$ 324,627	\$ 15,057,876	\$ 15,382,503	\$ 324,627	\$ 15,707,130	\$ 324,627	\$ 16,031,757
Total Planned	\$ 870,930	\$ 870,930	\$ 17,229,180	\$ 18,100,110	\$ 1,665,930	\$ 19,766,040	\$ 870,930	\$ 20,636,970
Actual Incurred Cost								
Federal Share	\$ 51,635	\$ 51,635	\$ 1,818,533	\$ 1,870,168				
Non-Federal Share	\$ 15,345	\$ 15,345	\$ 92,845	\$ 108,190				

DOE Award No.: DE-FE0023919
 Quarterly Research Performance Progress Report (Period ending 3/31/2015)
 Deepwater Methane Hydrate Characterization and Scientific Assessment

Total Incurred Cost	\$ 66,980	\$ 66,980	\$ 1,911,378	\$ 1,978,358				
Variance								
Federal Share	\$ (494,668)	\$ (494,668)		\$ (494,668)				
Non-Federal Share	\$ (309,282)	\$ (309,282)		\$ (309,282)				
Total Variance	\$ (803,950)	\$ (803,950)		\$ (803,950)				

DOE Award No.: DE-FE0023919
 Quarterly Research Performance Progress Report (Period ending 3/31/2015)
 Deepwater Methane Hydrate Characterization and Scientific Assessment

Baseline Reporting Quarter	Budget Period 2							
	Q1		Q2		Q3		Q4	
	10/01/15-12/31/15		01/01/16-03/31/16		04/01/16-06/30/16		07/01/16-09/30/16	
	Q1	Cumulative Total	Q2	Cumulative Total	Q3	Cumulative Total	Q4	Cumulative Total
Baseline Cost Plan								
Federal Share	\$ 1,766,212	\$ 6,371,425	\$ 1,766,212	\$ 8,137,636	\$ 1,766,212	\$ 9,903,848	\$ 1,766,212	\$ 11,670,059
Non-Federal Share	\$ 337,979	\$ 16,369,736	\$ 337,979	\$ 16,707,715	\$ 337,979	\$ 17,045,693	\$ 337,979	\$ 17,383,672
Total Planned	\$ 2,104,190	\$ 22,741,160	\$ 2,104,190	\$ 24,845,351	\$ 2,104,190	\$ 26,949,541	\$ 2,104,190	\$ 29,053,731
Actual Incurred Cost								
Federal Share								
Non-Federal Share								
Total Incurred Cost								
Variance								
Federal Share								
Non-Federal Share								
Total Variance								

Baseline Reporting Quarter	Budget Period 3 (Year 1)							
	Q1		Q2		Q3		Q4	
	10/01/16-12/31/16		01/01/17-03/31/17		04/01/17-06/30/17		07/01/17-09/30/17	
	Q1	Cumulative Total	Q2	Cumulative Total	Q3	Cumulative Total	Q4	Cumulative Total
Baseline Cost Plan								
Federal Share	\$ 3,700,069	\$ 15,370,128	\$ 3,700,069	\$ 19,070,196	\$ 3,700,069	\$ 22,770,265	\$ 3,700,069	\$ 26,470,333
Non-Federal Share	\$ 678,027	\$ 18,061,699	\$ 678,027	\$ 18,739,725	\$ 678,027	\$ 19,417,752	\$ 678,027	\$ 20,095,778
Total Planned	\$ 4,378,095	\$ 33,431,826	\$ 4,378,095	\$ 37,809,921	\$ 4,378,095	\$ 42,188,016	\$ 4,378,095	\$ 46,566,111
Actual Incurred Cost								
Federal Share								
Non-Federal Share								
Total Incurred Cost								
Variance								
Federal Share								
Non-Federal Share								
Total Variance								

DOE Award No.: DE-FE0023919
 Quarterly Research Performance Progress Report (Period ending 3/31/2015)
 Deepwater Methane Hydrate Characterization and Scientific Assessment

Baseline Reporting Quarter	Budget Period 3 (Year 2)							
	Q5		Q6		Q7		Q8	
	10/01/17-12/31/17		01/01/18-03/31/18		04/01/18-06/30/18		07/01/18-09/30/18	
	Q5	Cumulative Total	Q6	Cumulative Total	Q7	Cumulative Total	Q8	Cumulative Total
Baseline Cost Plan								
Federal Share	\$ 3,700,069	\$ 30,170,402	\$ 3,700,069	\$ 33,870,470	\$ 3,700,069	\$ 37,570,539	\$ 3,700,069	\$ 41,270,607
Non-Federal Share	\$ 678,027	\$ 20,773,805	\$ 678,027	\$ 21,451,831	\$ 678,027	\$ 22,129,858	\$ 678,027	\$ 22,807,884
Total Planned	\$ 4,378,095	\$ 50,944,206	\$ 4,378,095	\$ 55,322,301	\$ 4,378,095	\$ 59,700,396	\$ 4,378,095	\$ 64,078,491
Actual Incurred Cost								
Federal Share								
Non-Federal Share								
Total Incurred Cost								
Variance								
Federal Share								
Non-Federal Share								
Total Variance								

National Energy Technology Laboratory

626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940

3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880

13131 Dairy Ashford Road, Suite 225
Sugar Land, TX 77478

1450 Queen Avenue SW
Albany, OR 97321-2198

Arctic Energy Office
420 L Street, Suite 305
Anchorage, AK 99501

Visit the NETL website at:
www.netl.doe.gov

Customer Service Line:
1-800-553-7681

