

Department of Energy, National Energy and Technology Laboratory

Award number DE-FE0024357

Utica Shale Energy and Environmental Laboratory

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Submission Date: 01/31/2016

DUNS: 832127323

The Ohio State University  
1960 Kenny Road  
Columbus, OH 43210-1016

Project Period: 08/01/2015 – 07/31/2019

Quarterly Reporting Period: 10/01/2015-12/30/2015

**Jared Port**

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# Ohio State Quarterly RPPR

## 2. Accomplishments

a.) Major Project Goals. Project milestones are summarized in Table 1.

Milestone Title	Planned Completion Date	Actual Completion Date	Milestone Verification Method	Comments
Completion of the PMP	10/09/2015	10/09/2015	Review and approval by NETL	- Completed on schedule
Operator and Drill Site Finalized	07/29/2016	-	Operator agreement approved by Primary Advisory Board (PAB)	- Selection process now includes non-MWCD sites
Initial Geologic Structure Database Complete	07/29/2016	-	Subsurface model reviewed by technical experts	- Graduate Assistant assigned - Software selected - Work suspended pending operator agreement
Vertical Drilling Start	10/03/2016	-	Drill vertical borehole Core Acquisition	
Baseline Environmental Report	10/03/2016	-	Approval by PAB	
Horizontal Drilling Start	11/14/2016	-	Microseismic monitoring Drill fluids and gas sampling Cuttings, mud and fluids analysis Engineering testing and monitoring	
Borehole Geophysics Report	07/31/2017	-	Approved by Science Coordination Board (SCB)	
Preliminary Horizontal Environmental Monitoring Report	10/02/2017	-	Approved by PAB	
Preliminary Horizontal Geologic Report	07/31/2018	-	Approved by SCB	
Engineering Environmental Monitoring Report	10/02/2018	-	Approved by PAB	
Final Engineering Report	04/30/2019	-	Approved by SCB	
Final Environmental Monitoring Report	07/31/2019	-	Approved by PAB	

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Table 1. Milestone status report

b.) Accomplishments. The Project Management Plan (PMP) was submitted and accepted by NETL. The Access Guidelines Report, the first optional deliverable, was reviewed and accepted by NETL. Meetings were held with representatives of Muskingum Watershed Conservancy District (MWCD), Gulfport, Antero, the Energy Cooperative, Artex Oil Company, and Northeast Natural Energy (NNE) to discuss potential drilling sites and operator agreements. A visit was conducted to a potential site currently under lease by NNE.

c.) Opportunities for training and professional development. Five Graduate Research Assistants began planning for future work on Tasks 1.1.4 Geologic Structure Database, 3.2 Impact Analysis and Opinion Assessment, 4.1.3 Surface Water Quality, 4.1.5 Biological Parameters, 4.1.6 Rapid Land Use Change Study, 4.2 Groundwater Assessment and 6.6 Drill Fluids Acquisition and Assessment. Weekly Graduate Research Assistant meetings are continuing. Students are attending a Graduate Seminar on Hydraulic Fracturing being taught by the USEEL Environmental Monitoring Lead, Dr. Roman Lanno. The first OSU Extension Educator training session (SOPO Task 3.3) was held on October 27, 2015 with 40 Ohio State extension agents participating as either attendees or presenters.

d.) Dissemination of results to communities of interest. Nothing to report.

e.) Plans to accomplish goals/milestones during next reporting period. The drill site will be finalized and the Operator Agreement will be signed. Quality Assurance and Quality Control procedures for baseline environmental sampling will also be completed. This will enable the first baseline samples to be collected during the next reporting period.

### 3. Products

a.) Publications, conferences papers, and presentations. Nothing to report.

b.) Website(s) or other Internet site(s). Nothing to report.

c.) Technologies or techniques. Nothing to report.

d.) Inventions, patent applications, and/or licenses. Nothing to report.

e.) Other products. Work continued on Sample Analysis Plans and quality assurance/quality control procedures for air, surface water, sediment, groundwater, soil and biologic parameters sampling.

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## 4. Participants & Other Collaborating Organizations

### a.) Individuals who have worked on the project.

Name: Dr. Jeffrey Daniels

Project Role: Director

Nearest person month worked: 2 (cost share)

Contribution to project: Dr. Daniels has been involved in overall project management, planning, and administration.

Foreign collaboration: No

Name: Mr. Jeffrey Melaragno

Project Role: Project Manager

Nearest person month worked: 3

Contribution to project: Mr. Melaragno has been involved in overall project management, planning, and administration.

Foreign collaboration: No

Name: Dr. Gerald Allen

Project Role: Science Operations Manager

Nearest person month worked: 3

Contribution to the project: Dr. Allen has been involved in project management, planning, and administration; and collection and compilation of GIS data for site-specific and regional study area delineation and evaluation.

Foreign collaboration: No

Name: Ms. Sarah Mielke

Project Role: Graduate Research Assistant

Nearest person month worked: 1

Contribution to the project: Ms. Mielke is working on the Rapid Land Use Change Study (subtask 4.1.6).

Foreign collaboration: No

Name: Ms. Paige Hagley

Project Role: Graduate Research Assistant

Nearest person month worked: 1

Contribution to the project: Ms. Hagley is working on Impact Analysis and Opinion Assessment (subtask 3.2).

Foreign collaboration: No

Name: Mr. Benjamin Grove

Project Role: Graduate Research Assistant

Nearest person month worked: 1

Contribution to the project: Mr. Grove is working on the groundwater monitoring plan (subtask 4.2).

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Foreign collaboration: No

Name: Mr. Kaushik Rangharajan

Project Role: Graduate Research Assistant

Nearest person month worked: 1

Contribution to the project: Mr. Rangharajan is working on the fluids sampling plan (subtask 6.6).

Foreign collaboration: No

Name: Mr. Nicholas Bailes

Project Role: Graduate Research Assistant

Nearest person month worked: 1

Contribution to the project: Mr. Bailes is working on the surface water and invertebrate sampling plan (subtask 4.1.3).

Foreign collaboration: No

Name: Dr. Roman Lanno

Project Role: Environmental Monitoring Lead

Nearest person month worked: 1 (cost share)

Contribution to the project: Dr. Lanno has been involved in planning and preparations for air, soil, surface water, groundwater and biologic parameters sampling (task 4.0).

Foreign collaboration: No

Name: Dr. Michael Bisesi

Project Role: Air Monitoring Lead

Nearest person month worked: 1 (cost share)

Contribution to the project: Dr. Bisesi has been involved in discussions with WVU and vendors to determine the best approach for air monitoring (subtask 4.1.2).

Foreign collaboration: No

Name: Dr. Jeffrey Bielicki

Project Role: Community Outreach Lead

Nearest person month worked: 1 (cost share)

Contribution to the project: Dr. Bielicki has been involved in planning the USEEL community outreach program (Task 3.0).

Foreign collaboration: No

Name: Dr. Kenneth Martin

Project Role: OSU Extension Education Lead

Nearest person month worked: 1 (cost share)

Contribution to the project: Dr. Martin has been involved in preparations and execute of Scientific Education for OSUE Educators (task 3.3).

Foreign collaboration: No

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b.) Other organizations involved as partners. Subcontracts were issued to WVU and EFD in anticipation of their support of baseline environmental sampling.

c.) Involvement of collaborators or contacts. Roman Lanno, Environmental Monitoring Lead, worked extensively with University collaborators to develop sampling plans and quality assurance/quality control procedures for environmental monitoring. Several faculty members were involved in the OSU Extension Educator training conducted in October.

**5. Impact** – Nothing to report.

### **6. Changes/Problems**

a.) Changes in approach and reasons for change. Nothing to report.

b.) Actual or anticipated problems or delays and resolution. Nothing to report.

c.) Changes that have significant impact on expenditures. The delay in site and operator selection resulted in fewer expenses being incurred in the first quarter of FY2016 and the same is expected for the second quarter of FY2016.

d.) Significant changes in use or care of human subjects, vertebrate animals, and/or Biohazards. Nothing to report.

e.) Change of primary performance site location from that originally proposed. Nothing to report.

**7. Special Reporting Requirements** – Nothing to report.

**8. Budgetary Information** – The following financial report was sent on 01/31/2016 and has been filed with NETL.