MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE
STANDARD MEMORANDUM OF UNDERSTANDING (MOU)
INTRA-AGENCY/INTERGOVERNMENTAL AGREEMENT

This Memorandum of Understanding/Agreement, dated September 15, 2013, and entitled Marcellus Shale Public Health Study is hereby entered into between Prevention and Health Promotion Administration, a unit of the Maryland Department of Health and Mental Hygiene, hereafter known as "the Department", and the University of Maryland College Park (UMCP), a governmental entity of the State of Maryland, the Federal Government, another State government, or a municipal or local government, etc., within Maryland or another state, hereafter known as "the Government."

The services, which are the subject of this Memorandum of Understanding/Agreement, are to commence on or about October 21, 2013, and terminate June 30, 2014.

This Memorandum of Understanding/Agreement may further be renewed for the following period(s) of time: July 1, 2014 – June 30, 2015.

The total cost to the Department for the provision of the described services shall not exceed $150,000. This amount shall be payable to the Government at this frequency, as directed in the budget, upon receipt of a specific invoice and in accordance with Section I of this Memorandum of Understanding/Agreement. The final invoice shall be submitted to the Department no later than 45 days after the end of this project period (failure to do so may result in forfeiture of payment). If this agreement is renewed as described in the above paragraph the final invoice shall be submitted to the Department no later than 45 days after the project period ends for each renewal. Payment of all invoices is dependent upon the vendor providing all deliverables identified in the contact/MOU. Payment shall be made via R*Stars transfer.
SECTION I. BILLING AND BUDGET

This Agreement is for provision of: (Check A. or B. and when applicable C.)

☐ A. Services Controlled by the DHMH Human Services Agreements Manual

If this Agreement is for the provision of human services using a cost reimbursement methodology, the Government must submit payment requests in the manner prescribed in the Department's Human Services Agreements Manual, using the DHMH 437 billing forms package. For such human services agreements, the Government must also complete a DHMH 432 Budget package and enclose it with this Agreement. This completed 432 Budget package is deemed to be an incorporated part of this Agreement, as indicated by its reference in Section VII. Payment shall be limited to reimbursement of actual costs as identified by the Government on form DHMH 440 End of Year Reconciliation.

☐ B. Other Services Billing and Budget

If this is a cost reimbursement Agreement, for the provision of services not controlled by the Human Services Agreements Manual, the submission of a detailed budget, in which indirect cost is specifically identified, is required. This completed budget will be deemed to be an incorporated part of this Agreement, as indicated by its reference in Section VII.

X C. Services Provided by an Other State Agency

If this agreement is with another agency of the State of Maryland, both parties agree to comply with the directives of the Comptroller of the State of Maryland concerning payment for inter-agency agreements. Payment to the other State agency under this agreement will be made via the Financial Management Information System (FMIS) of the State Comptroller's Office, using an Interagency Transfer. The other State agency shall include the following information on all invoices:

1.) Amount of invoice
2.) Services rendered
3.) Agency's Control Number (or ADPICS #)
4.) DHMH Control Number (or ADPICS #)
5.) Financial Agency Code
6.) PCA and Agency Object Codes
7.) Transaction Code
8.) Contract Number and Beginning/Ending Dates
Invoices are to be sent to:

Terrence S. Meyers
201 W. Preston Street
Third floor, room 320
Baltimore, MD 21201
410-767-8449
Terry.meyers@maryland.gov

Copies will be distributed by Terrence S. Meyers to all parties listed below:

<table>
<thead>
<tr>
<th>(INDIVIDUAL NAME and TITLE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STREET AND ROOM ADDRESS)</td>
</tr>
<tr>
<td>(CITY, STATE AND ZIP CODE)</td>
</tr>
</tbody>
</table>

SECTION II. MANDATORY PROVISIONS

A. Nondiscrimination in Employment

The Government agrees:

1.) Not to discriminate in any manner against an employee or applicant for employment because of race, color, religion, creed, age, sex, marital status, national origin, ancestry, or physical or mental handicap unrelated in nature and extent so as reasonably to preclude the performance of such employment;

2.) To include a provision similar to that contained in subsection (1), above, in any subcontract except a subcontract for standard commercial supplies or raw materials; and

3.) To post and to cause subcontractors to post in conspicuous places available to employees and applicants for employment, notices setting forth the substance of this clause.

B. Federal Funding Acknowledgement

1. There (___ are / ___X___ are not) programmatic conditions that apply to this contract, regardless of the type of funding. If applied, these conditions are contained in Funds Attachment A.

2. The total amount of federal funds allocated for the Prevention and Health Promotion Administration is $215,097,325 in Maryland State Fiscal Year 2014. This represents 60.38% of all funds budgeted for the unit in that fiscal year. This does not necessarily represent the amount of funding available for any particular grant, contract, or Invitation for Bid.

3. This contract (___ does/___X___) does not contain federal funds.
4. If contained, the source of these federal funds is:

The CFDA number is _______________. The conditions that apply to all federal funds awarded by the Department are contained in Funds Attachment B. Any additional conditions that apply to this federally funded contract are contained in Funds Attachment C.

5. Acceptance of this agreement indicates your intent to comply with all conditions that are a part of this agreement.

C. If Federal funds support the activities of this agreement (see paragraph B herein), the Government acknowledges, per the United States Office of Management & Budget’s Grants and Cooperative Agreement with State and Local Governments, Circular A-102 (d) Debarment & Suspension, the following obligations of Federal granting agencies regarding debarment and suspension:

"Federal agencies shall not award assistance to applicants that are debarred or suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549. Agencies shall establish procedures for the effective use of the List of Parties Excluded from Federal Procurement or Nonprocurement programs to assure that they do not award assistance to listed parties in violation of the Executive Order. Agencies shall also establish procedures to provide for effective use and/or dissemination of the list to assure that their grantees and subgrantees (including contractors) at any tier do not make awards in violation of the nonprocurement debarment and suspension common rule."

Which requirements are incorporated in grantee and sub-grantee funding arrangements, and reflected in the Affirmations contained in Attachment B and executed by the Government.
SECTION III. MONITORS

The Agreement Monitor for the Department shall be:

Clifford S. Mitchell  
Director, Environmental Health Bureau  
201 West Preston Street, Room 327, Baltimore, MD  21201  
(410) 767-7438/Fax (410) 333-5995 Email Cliff.Mitchell@maryland.gov

The Department's Agreement Monitor is the primary point of contact within the Department for matters relating to this Agreement. The Government shall contact this person immediately if the Government is unable to fulfill any of the requirements of, or has any questions regarding the interpretation of the provisions of the Agreement.

The Agreement Monitor for the Government shall be:

Kathryn Calderone  
Name (Typed)  
Contract Administrator  
Title (Typed)  
3112 Lee Building College Park, MD 20742  
Business Address ( Typed)  
301-405-6269, oraa@umd.edu  
Business Telephone Number (Typed) Email Address

The Government's Agreement Monitor is the primary point of contact within the Government for matters relating to this Agreement. The Government's Agreement Monitor shall contact the Department's Agreement Monitor immediately if the Government is unable to fulfill any of the requirements of, or has any questions regarding the interpretation of the provisions of the Agreement.
SECTION IV. BACKGROUND INFORMATION OF AGREEMENT

Executive Order 01.01.2011.11 ("Executive Order") established the Marcellus Shale Safe Drilling Initiative to be jointly administered by MDE and the Maryland Department of Natural Resources ("DNR"). As a part of that undertaking, MDE and DNR are to conduct a study, in consultation with the Marcellus Shale Advisory Commission ("Commission"), regarding the extraction of natural gas from shale formations in the State, including the Marcellus Shale, for the purpose of assisting State policymakers and regulators in determining whether and how gas production from the Marcellus Shale and other shale formations in Maryland can be accomplished without unacceptable risks of adverse impacts to public health, safety, the environment and natural resources.

In order to accomplish this, MDE has entered into an agreement with DHMH to coordinate a study of potential health public health impacts associated with possible drilling in the Marcellus Shale in Maryland. Through the current MOU, DHMH intends to provide for such a study to be prepared by the Government and delivered to MDE, DNR, and the Commission.

The Government is required to provide services in accordance with the approved budget.

Changes to the budget must be submitted by the Government to the Department and approved in writing. Invoices with unauthorized expenditures will not be paid.
SECTION V. DUTIES OF THE GOVERNMENT

The specific services to be provided by the Government under this Memorandum of Understanding are as follows:

PROPOSED SCOPE OF WORK: MARCELLUS SHALE PUBLIC HEALTH REPORT

The proposed project is designed to provide a baseline assessment of current regional population health, an assessment of potential public health impacts, and possible adaptive and public health mitigation strategies in the event that natural gas extraction takes place within Maryland’s Marcellus Shale resource.

There are four deliverables: (1) a scoping of the report; (2) a baseline assessment; (3) an impact assessment; and (4) a final report. The elements for each deliverable are described below. It is anticipated that members of the public will have an opportunity to review the proposed scope and offer comments prior to the final adoption of the analysis plan at the outset of the project. Expenses for travel and meeting costs associated with this activity have been included in the deliverables budgets. In addition, there will be an external review process (outside of DHMH) to review both the initial proposed scope of work, interim progress, and final report prior to release.

**Deliverables**

1. Detailed Scoping – the Government shall provide DHMH with a detailed scope of work and timetable for all deliverables, as well as describing the means by which these deliverables will be produced. The scoping process will include public input as recommended by the Government in consultation with the Department.

2. Baseline Assessment – The Government will produce a baseline assessment of the population that is likely to be directly affected by drilling and extraction operations. This will include an assessment of the population’s health, based on demographics, major causes of morbidity and mortality, local health priorities, and considerations of vulnerable populations. The baseline assessment will also include some discussion of local healthcare infrastructure, as well as social infrastructure and social support, as secondary determinants of health.

3. Impact Assessment – The Government will produce an assessment of potential impacts, which will include the following elements:

   a. Description of hazards/known health impacts directly related to natural gas operations
      i. Chemical hazards (drilling chemicals, other)
      ii. Physical hazards (noise, injury hazards)
   b. Hazards/impacts associated with population changes/secondary impacts of natural gas extraction
      i. Traffic

DHMH Standard MOU (6/05)
ii. Injuries/illnesses associated with population/workforce changes

c. Potential Impacts Associated with Natural Gas Extraction
   i. Potential exposure scenarios under normal operating conditions
   ii. Potential exposure scenarios under upset conditions
   iii. Assessment of multiple/cumulative exposures
   iv. Assessment of impacts in specific vulnerable populations

d. Baseline monitoring and assessment
   i. Environmental**
   ii. Population
   iii. Gap analysis

4. Final Report – The final report will include findings and recommendations related to all public health aspects of extraction operations during normal and upset conditions. Specifically, it will include:

   a. Monitoring and assessment recommendations during, after extraction operations
      i. Environmental**
      ii. Population

   b. Potential Public Health Response and Mitigation Strategies
      i. Public health responses and adaptations to mitigate direct impacts
      ii. Public health responses and adaptations to mitigate secondary impacts
      iii. Potential benefits/positive health consequences associated with extraction activities

*Population changes and other economic estimates will be adopted from the economic impact and other studies to be developed over the next year under the mandates of Executive Order 01.01.2011.11.

**Environmental monitoring recommendations in this report will be informed by recommendations already described in other Marcellus Shale Safe Drilling Initiative reports. This report will emphasize environmental or population monitoring relevant to human health impacts that is not described elsewhere.

Project Deliverables

Project invoices will be submitted on a quarterly basis and include itemization of all reimbursable and task costs incurred over the invoice period. A final Public Health Study report shall be included with the final project invoice.
SECTION VI. DUTIES OF THE DEPARTMENT

In addition to the payment of funds as previously described, the Department also agrees to provide or do the following:

1. Provide the Government with all technical specifications and information necessary to develop the required products, including the results (when available) from other studies and products being developed for the Advisory Commission.

2. Facilitate access to data and information resources necessary to the production of each deliverable.

3. Arrange one or more meetings between the Government and other entities or agencies engaged in projects for the Advisory Commission, to ensure that the Government is fully aware of these other efforts.

4. The Department will oversee the Government’s completion of each deliverable to ensure the requirements for the agreement are fulfilled.
SECTION VII. INCORPORATION BY REFERENCE

Both parties hereby agree that the documents described below, if any, are hereby incorporated into and made an integral part of this Agreement: (Type "None", if none)

<table>
<thead>
<tr>
<th>Exact Title of Document(s)</th>
<th>Number of Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>1</td>
</tr>
<tr>
<td>Certification Regarding Environmental Tobacco Smoke</td>
<td>1</td>
</tr>
</tbody>
</table>

SECTION VIII. SIGNATURES

In acknowledgement of the foregoing description of the services and requirements of this Agreement, these authorized signatories of the Department and the Government do hereby attest to their acceptance of the terms and conditions of this Agreement.

For the Government

BY: ____________________________

Signature

Evan L. Crierie

Name (Type or Print)

Assistant Director, Research Administration

Title (Type or Print)

9/23/13

Date of Signing

                      Approved as to Form and Legal Sufficiency

This ______ Day of ___________

By: ____________________________

Name (Typed)

Assistant Attorney General

For the Department

BY: ____________________________

Signature

Sharon Gambrill

Name (Type or Print)

Office of Procurement & Support Services

Title (Type or Print)

10/18/13

Date of Signing

DHMH Control Number 14-137956

m0084400326
**Budget**

Table 1 below itemizes the budget for the proposed public health study. Tasks 1 through 4 will be invoiced as those tasks are completed. Expenses for travel and meeting costs associated with this activity have been included in the deliverables budgets.

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Detail</th>
<th>Due Date</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed Scoping</td>
<td>DHMH, MDE approve scoping document from contractor</td>
<td>November, 2013</td>
<td>$35,000</td>
</tr>
<tr>
<td>Baseline assessment</td>
<td>DHMH, MDE approve baseline assessment</td>
<td>January, 2013</td>
<td>$35,000</td>
</tr>
<tr>
<td>Impact Assessment</td>
<td>Report on hazards based on literature review, technical analysis, potential impacts,</td>
<td>March, 2014</td>
<td>$35,000</td>
</tr>
<tr>
<td>Final Report</td>
<td>Monitoring and Assessment Strategies, Potential Public Health Response and Mitigation Strategies, Public Health Recommendations and Next Steps</td>
<td>June, 2014</td>
<td>$45,000</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT BUDGET</strong></td>
<td></td>
<td></td>
<td><strong>$150,000</strong></td>
</tr>
</tbody>
</table>
CERTIFICATION REGARDING ENVIRONMENT TOBACCO SMOKE

Public Law 103-227, also known as the Pro-Children Act of 1994 (Act), requires that smoking not be permitted in any portion of any indoor facility owned, or leased or contracted for by an entity and used routinely or regularly for the provision of health, day care, early childhood development services, education or library services to children under the age of 18, if the services are funded by Federal programs either directly or through State or local governments, by Federal grant, contract, loan guarantee. The law also applies to children’s services that are provided in indoor facilities that are constructed, operated, or maintained with such federal funds. The law does not apply to children’s services provided in private residences, portions of facilities used for inpatient drug or alcohol treatment, service providers whose sole sources of applicable Federal funds are Medicare or Medicaid; or facilities where WIC coupons are redeemed. Failure to comply will result with the monetary penalty of up to $1000 for each violation and/or the imposition of an administrative compliance order on the responsible entity.

By signing this certification, the offer or/contractor (for acquisitions) or applicant/grantee (for grants) certifies that the submitting organization will comply with the requirements of the Act and will not allow smoking within any portion of any indoor facility used for the provision of services for children as defined by the Act.

The submitting organization agrees that it will require that the language of this certification be included in any sub-awards which contain provisions for children’s services and that all sub-recipients shall certify accordingly.

[Signature]
Signature of Authorized Certifying Official
Evan L. Crierie, Assistant Director, ORA

4/2004