COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS MANAGEMENT

INSTRUCTIONS FOR EROSION AND SEDIMENT CONTROL PLAN FOR OIL AND GAS OPERATORS

I. GENERAL INFORMATION

These instructions are designed to assist the applicant in completing the "Erosion and Sediment Control Plan for Oil and Gas Operations" (E&S Plan), form 8000-FM-OOGM0111 and in determining if any other environmental permits or approvals are needed for the project. Please type or print clearly when completing the form. If information requested involves more than the space allows, copy that appropriate page of the form and complete as required. If a question is not applicable to you or your project, check "N/A" in the appropriate box.

Pursuant to 25 Pa. Code § 102.5(c) a person proposing oil and gas activities that involve 5 acres or more of earth disturbance over the life of the project must obtain an Erosion and Sediment Control Permit (E&S Permit) prior to commencing the earth disturbance activity. Erosion and Sediment Control General Permit 2 (ESCGP-2) is an E&S permit under Chapter 102 issued pursuant to 25 Pa. Code § 102.5(m) for earth disturbances associated with oil and gas exploration, production, processing or treatment operations, or transmission facilities.

Section A: Administrative

- **Project Name, Municipality, County –** enter the project name and the municipality and county where it is located. Do not use abbreviations, acronyms, etc.
- **Location –** provide the latitude and longitude coordinates for the approximate center of the project area or facility. For linear projects, provide the project's termini. The coordinates should be in degrees, minutes, and seconds. The reference datum must be North American Datum of 1983 (NAD 83).

Section B: Responsible Parties

- **Operator Name and Address –** enter the name, address, and phone number for the operator. Do not use the abbreviation for the city name. Use the two-character abbreviation for the state. Include the four-digit extension to the zip code.
- **Construction and Maintenance Responsibility –** provide the name, address, and phone number for the person(s) responsible for the construction and maintenance of erosion and sediment (E&S) control best management practices (BMP) during earth disturbance activities.
- **E&S Plan Preparer –** provide the name, address, and phone number for the person responsible for the preparation of the E&S Plan.

Section C: Project Description

- **Project Type –** check all project types that apply to the project.
- **Proposed Project Start and Stop Date –** enter the proposed project starting and anticipated ending dates (note; ESCGP-2 five-year time frame).
- **Project Narrative Description –** provide a narrative description of the project. In the project description narrative, provide details such as the number of wells to be drilled. Does the project include a tank battery, compressor station, pipeline, other, etc.
- **Disturbed Acreage Calculation –** the disturbed area is that portion of the project area where earth disturbance activities are planned to occur. Complete the provided table. Provide the total project area that includes the entire area of activity, development, or sale; and all areas of earth disturbance activities.

II. E &S PLAN NARRATIVE REPORT

A. Soil Characteristics:

A.1. See Appendix B for limitations of Pennsylvania soils pertaining to earthmoving projects and complete the Limiting Soil Characteristics Table. Include additional lines as needed. Note: **Do Not** submit Appendix B with the application; it is provided for reference only.

A.2. Describe the types, depth, slope, and limitations of the soils. This information should also be included on the drawings. This information is available from the United States Department of Agriculture (USDA), Natural

Resources Conservation Service (formerly Soil Conservation Service) website: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm or the Pennsylvania State University website: http://apps.cei.psu.edu/soiltool/semtool_phase2.html .

The methods to address the identified soils limitations must be included on the drawings and in the plan narrative. For example, a note to use only certain areas as borrow areas **for** fill**,** sediment basins or traps, or special fertilization requirements for portions of the project, etc. Soils identified as "hydric" should be investigated in the field by a person qualified in wetland delineation.

A.3. Provide a description of geologic formations that may be disturbed during construction that contain minerals (e.g. pyrite) in sufficient quantities that could result in discharges that do not meet water quality standards for the receiving surface water(s). If there are none, check "N/A."

A.4. Identify and provide a description of bedrock or soil conditions on the project site that could result in significant slope failures causing mass soil movement into surface waters, property damage, or a public safety hazard; and methods incorporated into the E&S Plan that address such hazards. Provide a geotechnical report prepared by a professional geotechnical engineer or professional geologist that addresses potential slope failures from the bedrock or soil conditions. If there are none, check "N/A."

A.4.1. Identify and describe, if present, naturally occurring geologic formations or soil conditions that may cause pollution.

A.5. Answer question 5 and refer to reference materials listed below (A and B) for additional information to assist in completing this section regarding acid-producing rock (APR).

A. Please refer to DEP Fact Sheet "How to Avoid and Handle Acid-Producing Rock Formations Encountered During Well Site Development" for additional information. As per the fact sheet, please note that APR is not just limited to coal but may also include rock (shale, clays, etc.) that is normally located immediately above and/or below a coal horizon.

B. Where interception of coal or other APR is expected, DEP strongly recommends the drilling of at least one representative drill/core hole to maximum cover within the site. The material extracted from the hole should be analyzed for potentially acid-producing or alkaline-generating materials. Alternate testing methods may be proposed, but will likely not be as representative as drill hole or core hole analysis.

A.5.1-5.5; provide answers for questions 5.1 through 5.5 regarding APR.

B. Earth Disturbance Activity

Earth disturbance activities require due diligence to determine if past and present land use may have resulted in the possibility of site contamination. Accordingly, the past and present land uses with planned site alterations must be investigated. Past land uses are the actual land uses of the project site for the past 50 years or longer, if known, not the zoning of the land. Present land uses are the dominant land uses of the project site for the 5 years preceding the planned project, not the zoning of the land. Provide a narrative description of the past (B.1) and present (B.2) land uses.

C. Off Site Discharge Analysis

Answer the discharge question and provide an off-site discharge analysis (if required) showing the impact that runoff from the project site will have on the existing downstream watercourses' resistance to erosion. Design computations for appropriate protective measures must be included when applicable. Refer to DEP Fact Sheet "Off-site Discharges of Stormwater to Areas that are not Surface Waters" for additional information.

D. Surface Water Classification

All streams in the Commonwealth of Pennsylvania are classified based upon their designated and existing uses and water quality criteria. Designated uses are found in 25 Pa. Code § 93.9a-z at www.pacode.com/secure/data/025/chapter93/chap93toc.html. Existing uses of waters of Pennsylvania are found at the DEP website files.dep.state.pa.us/Water/Drinking%20Water%20and%20Facility%20Regulation/WaterQualityPortalFiles/Existing%20Use/EU%20table%20list.pdf. County conservation district offices can also supply this information. List in the table provided the stream name and watershed with their designated **and** existing uses that may receive direct runoff within or from the oil and gas earth disturbance activity and check the box provided if the water body is sediment impaired. Include additional lines if necessary.

Also, eMapPA may be used to access DEPs current designated and existing uses as well as source of impairment, if applicable at http://www.emappa.dep.state.pa.us/emappa/viewer.htm.

- Utilizing eMapPA, locate the proposed project and identify the official stream name/watershed. Local names may not be recognized by this program and should not be used on permit applications and official documents.
- Once the correct stream name/watershed has been determined, the stream designated/existing use should also be determined utilizing eMapPa and the appropriate information completed on the application.

If it is determined in eMapPA that the receiving stream/watershed is listed as impaired in the "Str_Attain_Use_Desc" check box, it must be determined if sediment is the cause of non-attainment. Check to see the cause of impairment in the box titled "Source_Cause". If sediment is listed, identify accordingly. If source(s) other than siltation are listed as the source if impairment, do not check that siltation is the cause.

E. BMP Description Narrative

Identify the type of perimeter and onsite BMPs used before, during, and after earth disturbance activity from the following standard BMPs provided to fulfill the requirements of this plan. Additional BMPs may be found in the DEP "Erosion and Sediment Pollution Control Program Manual" (E&S Manual), Technical Guidance No. 363-2134-008. BMPs not addressed in this section or the E&S Manual may be reviewed on a case-by-case basis. If it can be shown that their performance will meet or exceed the performance of the BMP construction details shown in Appendix A. Note: BMPs not proposed for the project may be removed from Appendix A. BMP detail drawings may be submitted in an alternate format, such as plan sheets. If you plan to use any of these recommended BMPs, please check the appropriate boxes. If you plan to use alternative BMPs, you must provide drawings showing the details, specifications, and spacing as well as any calculations necessary to support the sizing, spacing, etc. Be aware that antidegradation best available combination of technologies (ABACT) acceptable BMPs may be required in HQ and/or EV watersheds. Reference the E&S Manual to ensure that requirements are met for each proposed BMP installation.

F. BMP Installation Sequence Narrative

The project narrative must provide a sequence of BMP installation and removal. Unlike the previous item that identifies the location and type of BMP, this item requires a list of temporary or permanent BMPs to be installed and a schedule for their installation and removal as related to the various phases of the project. Other BMPs are constructed when needed to accommodate the planned sequence of project installation. The narrative must include a complete schedule of installation and removal of erosion control BMPs as they relate to the various phases of earthmoving activities. All of the steps to be taken from the initial site clearing through the final stabilization of the site must be included.

Since each project differs from all others in some way, the BMP installation sequence must be site specific. It should identify the specific BMPs that will be employed before, during, and after each stage of construction. The provided sequence of operation is typical for a project and is provided as a guide. Each project BMP sequencing may differ in the order of activities, but should include all of the operations listed in this section. Utility Line Projects – since utility line construction is repetitive, the construction sequence can usually be generalized. However, enough information should be provided to identify the BMPs that will be in place during each of the following phases of construction: clearing and grubbing, initial grading, trenching operations, backfilling, and stabilization. A time frame should be provided for construction from initial disturbance to seeding and mulching (final stabilization) at any station along the right-of-way. The length of right-of-way disturbed at any one time should be the minimum required to efficiently construct the proposed utility line. The allowable length of disturbance should be specified in the E&S Plan. The locations, spacing, etc. of proposed BMPs should be shown on the plan drawings, maps, and/or profile sections. Trench plugs should be installed where necessary to prevent the creation of preferential flow paths resulting in unintended changes to the site hydrogeology.

G. Supporting Calculations and Measurements

Provide all design information, including supporting calculations and measurements for proposed BMPs (including outlet channels from proposed basins, traps, and stormwater outfall protection). This information will vary according to the BMP, but may include such information as the upstream watershed drainage area contributing run off to the project site, anticipated volume, flow rate, velocity, and the proposed method of stabilization. The standard worksheets, included in Appendix B of the E&S Plan, give guidance for the design calculations and information required. Use of these standard worksheets is recommended in order to expedite plan reviews. These worksheets may not be altered in form or content unless prior approval is obtained from the reviewing agency. The worksheets may be included as a separate attachment.

H. Maintenance Program

Provide a maintenance program for both the temporary and permanent E&S control BMPs, including disposal of materials removed from the BMPs or project area. The maintenance program must include a schedule for inspection of each BMP and provide for inspection after each measurable runoff event as well as on a weekly basis. The program must provide for completion of a written report documenting each inspection and all BMP repair or replacement activities. Documentation may be provided on the "Visual Site Inspection Report, form 3150 FM BWEW0083 (2/2012) as amended and updated or another form developed by the permittee, so long as all required information is included. The type of maintenance; such as cleanout, repair, replacement, re-grading, stabilizing, etc.; for each of the BMPs is to be included in the program. For sediment basins, the elevation corresponding to the top of sediment storage level must be specified and a means to identify this elevation must be identified. The means of disposal of the materials removed from the BMPs must be specified. If materials removed from the BMPs are to be removed from the project area, the site and method of disposal must be indicated. Guidance on appropriate maintenance actions is provided for each BMP described in Appendix A and in the E&S Plan.

In addition, a separate schedule should also be provided specifying responsibility for conducting inspections, frequency of those inspections, general time frames for completing repairs, and instructions for disposing of sediment cleaned from the various BMPs.

I. Material Recycling and Disposal

I.1. Proper mechanisms to control waste materials must be in place. Construction wastes include, but are not limited to, excess soil materials, building materials, concrete wash water, sanitary wastes, etc. that could adversely impact water quality if not handled properly. Provide a plan that identifies potential construction wastes and implements measures for housekeeping, materials management, and litter control. Wherever possible, recycling of excess materials is preferred, rather than disposal.

I.2. Describe procedures which ensure the proper handling, storage, control, disposal and recycling of all other wastes that will be generated by the project, including but not limited to fuels, oil, lubricants and other materials brought to the site or used in the project.

J. Thermal Impacts

Provide an analysis of how thermal impacts associated with the project will be avoided. If thermal impacts cannot be avoided, describe how impacts are to be minimized and the BMPs that will be used to mitigate the impacts in a manner that will protect and maintain surface water quality. The primary means to address thermal pollutions is to limit the size and duration of exposed earth and maximize vegetative cover. Additional information on minimizing thermal impacts can be found in the "Pennsylvania Stormwater Best Management Practices Manual," (Stormwater BMP Manual) Technical Guidance No. 363-0300-002.

K. E&S Plan and Post Construction Stormwater Management (PCSM) or Site Restoration (SR) Plan Consistency (as applicable)

The overall design of the project should support the management of stormwater for erosion and sediment control during earth disturbance activities in a manner that is compatible with and can be integrated into, structural and non-structural PCSM or SR practices and approaches. Discuss the overall project and how the E&S Plan will accommodate PCSM or SR.

L. Riparian Forest Buffers

Earth disturbance activities must remain a minimum of 150 ft. from any exceptional value (EV) or high quality (HQ) perennial or intermittent river, stream, or creek, or lake, pond or reservoir when the project requires a permit under Chapter 102. Certain exceptions and waivers may apply. The following conditions apply to all projects:

- Receiving waters are EV or HQ and classified as impaired or have a Total Maximum Daily Load (TMDL); riparian forest buffers are mandatory.
- Receiving waters are EV or HQ but not classified impaired and there is no TMDL; a 150 ft. setback is required, but riparian forest buffers are not mandatory.
- Receiving waters are not EV or HQ; riparian buffers and riparian forest buffers are not mandatory.

L.1. Indicate whether a Chapter 102 permit is required for the project. If no, skip to question L.6.

L.2. Indicate if the project or any portion of the project is located in a special protection (EV or HQ) watershed.* If no, skip to question L.6.

L.3. If the answers to L.1 and L.2 are "Yes" and the project qualifies for one or more of the exceptions included in 102.14(d)(1), check the appropriate box and explain.

L.4. If the answers to L.1 and L.2 are "Yes" and the project qualifies for one or more of the waivers included in 102.14(d)(2), check the appropriate box and explain.

L.5. If the answers to L.1 and L.2 are "Yes" and the answers to both L.5 and L.6 are "No," the applicant is required to **either**:

- Provide a 150 ft. setback from the receiving perennial or intermittent river, stream, or creek, or lake, pond or reservoir if the receiving waters are not impaired and there is no TMDL* (check the box and explain as necessary),

  or

- Establish and maintain a riparian forest buffer**, or maintain an existing riparian forest buffer** if the receiving waters are classified as impaired or there is a TMDL* (check the box and explain as necessary)

* Refer to **Section II. D. Surface Water Classification** for information to assist determining surface water designated and existing uses.

** Additional information is included in "Riparian Forest Buffer Guidance," November 2010, Technical Guidance No. 394-5600-001. It is recommended that all applicants with mandatory riparian forest buffers on their projects obtain this document and use it to assist with planning their projects.

L.6. Describe voluntary riparian forest buffers that may be proposed for the project.

M. Antidegradation Requirements

Projects that are located in special protection watersheds that have a designated or existing use of HQ or EV, wild trout streams or non-special protection watersheds impaired for sediment or stormwater must demonstrate that all construction and post construction discharges will not degrade the physical, chemical, or biological characteristics of the surface waters.

Applicants proposing earth disturbance activities within special protection watersheds or siltation-impaired watersheds must implement nondischarge alternatives wherever cost-effective and environmentally sound. Provide an evaluation of nondischarge alternatives that identifies viable alternatives for the proposed project. If no viable nondischarge alternatives exist, the E&S Plan must include ABACT.

III. MAPS AND PLAN DRAWINGS

A. Location Map

A location map is required that shows the relationship of the project to the immediate surrounding area, including major highways, local roads, streams etc. The location map may be included on the topographic map or plan drawings as an insert, or may be included as a separate sheet in the narrative report. A reprint or a copy of a portion of a United States Geological Survey (USGS) 7.5-minute quadrangle map is recommended for this purpose. The name of the USGS quadrangle map must be included on the location map.

B. Plan Drawings

Plan drawings must include the items listed below. Separate drawings or inserts on the plan drawings must be included for off-site borrow or spoil areas that are part of the project. These drawings or inserts must include the same information as required on the plan drawings. Since plan drawings are often reduced to half sizes for submittal or use in the field, the font size and type used should be such that it is still legible after reduction of the drawings to half size.

1. Existing Topographic Features

Plan drawings should show the existing topographic features of the project site including the immediate surrounding area. The scale of the drawings must be large enough to clearly depict the topographic features and the contours must be at an interval that will adequately describe the topography of the site. Scales of 1 inch equals 50 ft. or less, with 2 ft. maximum contour intervals are recommended.

The drawings must include the location of the project with respect to roadways, municipalities, streams, watercourses, existing structures, existing ground cover, utilities, and other identifiable landmarks, etc. The immediate surrounding area must be of sufficient size to include all areas contributing runoff to the project site, planned BMPs and watercourses receiving runoff from the project for evaluation relative to resistance to erosion. These requirements also apply to all offsite spoil or borrow areas.

2. Soils Information

The locations of the soils may be delineated on the plan drawings or on a separate map of the site. The soils map should show the proposed project site including access roads, drill pads, impoundments, pipelines, sediment basins, and traps. A photocopy of a portion of the county soil survey on which the proposed project can be clearly shown may be used. The types, depth, slope, and limitations of the soils may be included on the drawings.

3. Earth Disturbance Activity

Show the proposed alteration in the project area and the limits of the project area. Such information as the limits of earth disturbance, the areas of cuts and fills, and the locations of roads, existing, and proposed structures should be included. Proposed contours of the project area must be included on these drawings. Proposed new contours must tie into existing contours. A legend describing all symbols on all plan drawings, including the scale and a north arrow, must be included.

4. Project Site Runoff

The maximum area draining to all basins, traps, and channels must be determined to calculate volume and rate of runoff. In some instances, the drainage area will increase or decrease as the site grading proceeds. In such cases, the maximum drainage area to the BMP must be used to determine the design capacity. The maximum drainage areas to each BMP should be delineated on the drawings.

5. Surface Water Classification

All streams in Pennsylvania are classified based on their designated and existing water uses and water quality criteria. If the runoff from a project area discharges to a stream that is classified for Special Protection or siltation-impaired waters, more stringent criteria are required to design the BMPs for that site. The criteria are found in Chapter 102.

Show the location of all surface waters of the Commonwealth including streams, springs, wetlands, and floodways within adjacent or receiving water from the project site and their classification under 25 Pa. Code Chapter 93 (relating to Water Quality Standards). All special protection waters, existing uses as presented in Chapter 93, and siltation-impaired waters must be clearly identified. Watershed boundaries should be delineated on the drawings.

6. BMPs and Maintenance Program

The locations of the BMPs must be shown on the plan drawings. Plan drawings should show the locations of proposed earth disturbance activities (roads, drill pads, impoundments, pipelines and other associated activities) with associated BMPs.

All construction details and specifications for the facilities must be included on the drawings including standard notes and optional notes to clarify or explain requirements. Typical sketches may be used. These sketches must provide sufficient information to show critical dimensions and construction details for each specific BMP. Standard Construction Details may be copied from Appendix A of this plan or the E&S Manual and inserted into the E&S Plan drawings of specific projects.

Many of these standard details have attached notes in bold type. These notes are part of that detail and should be included on the plan drawings. Care should be taken to include all pertinent data with the standard construction details, including critical dimensions and elevations as well as accompanying notes and tables. Tables should be included where a particular BMP will be used in more than one location with differing specifications for each location. If for some reason, it is necessary to alter a detail from the manual or Appendix A, the term “Standard Construction Detail” may not be used. All details, notes, and tables pertaining to a particular BMP should be located on the same drawing whenever possible. Additional notes may be added as needed, so long as they do not contradict the standard notes, details, sequence, or maintenance requirements.

BMP maintenance information should be placed near the detail for the BMP for which it is appropriate. A maintenance program for both the temporary and permanent E&S control BMPs, including disposal of materials removed from the BMPs or project area, must be included. The maintenance program must include a schedule for inspection of each BMP and provide for inspection after each measurable runoff event as well as on a weekly basis. The type of maintenance, such as cleanout, repair, replacement, re-grading, stabilizing, etc. for each of the BMPs is to be included in the program. For sediment basins, the elevation corresponding to top of sediment storage level must be specified and a means to identify this elevation must be identified. The means of disposal of the materials removed from the BMPs must be specified. If materials removed from the BMPs are to be

removed from the project area, the site and method of disposal must be indicated. Guidance on appropriate maintenance actions is provided for each BMP described in Appendix A and the E&S Manual.

7. Material Recycling and Disposal

A note directing proper handling, recycling, and disposal of waste materials should be included on the drawings.

8. Soil Conditions and Geologic Formations

Show the locations of geologic formations that may be disturbed during construction which contain minerals (e.g. pyrite) in sufficient quantities that could result in discharges that do not meet water quality standards for the receiving surface water(s). Appropriate measures to prevent such discharges, including but not limited to proper handling, isolation, disposal, etc., should also be provided along with typical details illustrating the procedures and/or BMPs to be used to avoid or minimize potential pollution.

Show the locations where bedrock or soil conditions with a significant potential for slope failures exist. When poor geologic or soil conditions cannot be avoided, BMPs to minimize or mitigate their impact must be identified in the plan drawings and appropriate construction details and typicals should be provided.

9. Thermal Impacts

Show all BMPs to be used to minimize or mitigate thermal impacts with associated details and/or typicals. The primary means to address thermal pollutions is to limit the size and duration of exposed earth or through infiltration. Additional information on minimizing thermal impacts can be found in the “Pennsylvania Stormwater Best Management Practices Manual.”

10. E&S Plan and PSCM/SR Plan Consistency

The overall design of the project should support the management of stormwater for E&S control during earth disturbance activities in a manner that is compatible with and can be integrated into, structural and non-structural PCSM or SR practices and approaches. The plan drawings should identify locations where BMPs are planned and designed to be integrated into PCSM or SR structural and non-structural practices and approaches.

11. Riparian Forest Buffers

Existing buffers or areas where buffers will be developed should be identified on the plan drawings.

12. Antidegradation Requirements

The plan drawings must show the locations and details for all non-discharge alternatives when identified or ABACTs when non-discharge alternatives do not exist.

IV.CERTIFICATION BY PERSON PREPARING APPLICATION

Complete the required information if the permit applicant intends to enter into the expedited review process or the proposed project meets one of the criteria below:

1. Located in or with potential to discharge to waters that have a designated or existing use of HQ or EV pursuant to Chapter 93, including EV wetlands as defined in 25 Pa. Code § 105.17 (relating to wetlands).
2. In which the area surrounding an oil or natural gas wellhead that is subject to earth disturbance and that is used or planned for use for drilling, production, or plugging of the well, including associated support activities is to be constructed in or on a floodplain. For the purposes of this permit, a floodplain is the lands adjoining a river or stream that have been or may be expected to be inundated by floodwaters in a 100-year frequency flood. (See 25 Pa. Code § 105.1). Unless otherwise specified, the boundary of the floodplain is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodplain, it is assumed absent evidence to the contrary, that the floodplain extends from (1) any perennial stream to 100 ft. horizontally from the top of the bank of such perennial stream, and (2) from any intermittent stream to 50 ft. horizontally from the top of the bank of such intermittent stream, or
3. Where earth disturbance activities are proposed on lands that are known to be currently contaminated by the release of regulated substances as defined in Section 103 of Act 2, 35 P.S. § 6026.103.

Otherwise, this section may be left blank.