pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Erosion and Sediment Control and Stormwater Management Requirements for Oil and Gas Activities

BACKGROUND

What is soil erosion?

Erosion is a natural process by which the surface of the land is worn away by water, wind, or chemical action. Accelerated erosion is the removal of the surface of the land through the combined action of human activities and natural processes, at a rate greater than would occur from natural processes alone.

Why regulate accelerated soil erosion?

Soils or other erodible materials transported by stormwater as a product of erosion is known as sediment. The action or process of forming or depositing sediment in waters of the commonwealth is known as sedimentation and it causes sediment pollution. According to the U.S. Environmental Protection Agency, sediment is the most common pollutant in the nation's water and accelerated erosion is responsible for 70 percent of sediment pollution, which causes $16 billion in environmental damages annually. Pennsylvania, a water rich state with 86,000 miles of streams and lakes, bears a major portion of that damage. Sediment degrades water quality and makes it challenging for aquatic wildlife to sustain and thrive. Sediment can fill up stream beds, clog storm drains and water channels, cause flooding, and alter the natural flow path of water. It is also difficult for natural vegetation to grow and survive in turbid water. Sediment pollution not only causes environmental damage, but also contributes to lost economic opportunities for businesses and communities for whom unimpaired waterways are essential for commerce and recreation.

The Pennsylvania Department of Environmental Protection (DEP) is obligated by law to protect waters of the commonwealth from pollution to ensure protection of public health, safety, and the environment.

How is soil erosion and sedimentation (E&S) regulated in Pennsylvania?

Pennsylvania implements 25 Pa. Code Chapter 102 (related to E&S Control) in regulating accelerated erosion. These regulations were promulgated under the Pennsylvania Clean Streams Law, 35 P.S. §§ 691.1-691.1001 *(Clean Streams Law)* and prohibit the discharge of any pollutant to waters of the commonwealth. Under Chapter 102 regulations, anyone conducting earth disturbance activities must develop, implement, and maintain Best Management Practices (BMPs) to minimize the potential for accelerated erosion and sedimentation. Under 25 Pa. Code Chapters 78 (relating to Oil and Gas Wells) and 78a (relating to Unconventional Wells), the Chapter 102 regulations are incorporated by reference. To regulate erosion and sediment pollution associated with earth disturbance activities relating to oil and gas activities, Section 102.5(c) requires an E&S Permit for projects involving 5 acres or more of earth disturbance over the life of the project prior to commencing earth disturbance activities. DEP issues erosion and sediment control general permits (ESCGP) for earth disturbance activities associated with oil and gas exploration, production, processing, treatment operations, and transmission facilities.

What is a BMP?

BMPs include activities, facilities, measures, planning, or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this commonwealth before, during, and after earth disturbance activities. BMPs are designed and installed as part of the Erosion and Sediment Control Plan (E&S Plan) and Post Construction Stormwater Management Plan (PCSM Plan), which are two of the required items for an ESCGP. There are E&S BMPs and PCSM/Site Restoration (SR) BMPs, each with the purpose of preventing/minimizing soil erosion and sediment pollution, and controlling stormwater volume, rate, and quality, respectively. Examples of E&S BMPs include minimizing earth disturbances, silt fences, filter socks, diversion ditches, sediment traps, sediment basins, and the establishment of grasses for permanent stabilization through the application of grass seed and hay or straw mulch. Examples of PCSM BMPs include infiltration basin/trenches, rain gardens, vegetated filter/swales, and wet ponds. Permanent stabilization BMPs include, but are not limited to, riparian buffer restoration, landscape restoration, floodplain restoration, and restoring a well site to the approximate original conditions that existed before earthmoving originally commenced.

PLANNING (E&S and PCSM)

What are the responsibilities of an Oil and Gas operator with regard to Erosion and Sediment Control?

Proper planning and use of BMPs is the key to a successful project and the protection of the state's water resources. Before beginning the project, become familiar with the E&S requirements as referenced in 25 Pa. Code Chapters 102, 78, and 78a. Inform the contractor or equipment operator of the need for an E&S Plan or an ESCGP permit as part of the project. For assistance or more information, contact the appropriate district oil and gas operations office or the local county conservation district.

If sediment pollution is occurring, or if there is an evidence that sediment pollution has occurred due to an on-going oil and gas earth disturbance activity, inform the appropriate conservation district, district oil and gas operations office, or a DEP regional office, based on who issued the E&S permit. Operators will need to provide the location, type of activity, name of the project, permit number (if known), and description of the sediment pollution occurring.

What is an E&S plan?

An E&S plan is a site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during, and after earth disturbance activities. Both DEP and county conservation districts provide guidance for E&S Plan development. Guidance for preparing an E&S plan and designing BMPs that meet Chapter 102 requirements can be found in DEP's *Erosion and Sediment Pollution Control Program Manual* (E&S Manual), Technical Guidance No. 363-2134-008. For earth disturbance activities in special protection watersheds, additional BMPs are required, as set forth in DEP's *Water Quality Antidegradation Implementation Guidance,* Technical Guidance No. 391-0300-002.

A person proposing earth disturbance activities must develop and implement a written E&S plan when the project will result in total earth disturbance of 5,000 or more square feet, the earth disturbance activity has the potential to discharge to water classified as High Quality or Exceptional Value water under 25 Pa. Code Chapter 93 (relating to water quality standards), or if the person is required to develop an E&S plan under 25 Pa. Code Chapter 102 or other DEP regulations. An E&S plan must be prepared by a person trained and experienced in erosion and sediment control methods and techniques applicable to the size and scope of the project being designed.

What is a PCSM plan/SR plan?

Like an E&S plan, a PCSM/SR plan is a site-specific plan consisting of both drawings and a narrative that identifies BMPs to manage changes in stormwater runoff volume, rate, and water quality after earth disturbance activities have ended and the project site is permanently stabilized. Guidance for preparing a PCSM plan and various BMPs that meet Chapter 102 requirements can be found in the *Pennsylvania Stormwater Best Management Practices Manual*, Technical Guidance No. 363-0300-002. A PCSM plan must be prepared by a person trained and experienced in PCSM design methods and techniques applicable to the size and scope of the project being designed.

Do all E&S and PCSM BMPs and ESCGP need to be approved by DEP before starting work?

Yes, if a permit is required. See below for more details regarding permit requirements. Any BMP proposed for the purpose of E&S control or PCSM must be planned in accordance with DEP's E&S or PCSM Manual. However, an operator may propose alternative BMPs not included in the E&S or PCSM Manual if the BMPs are equal to or more protective than those BMPs in the E&S or PCSM Manual. Any such BMPs must be approved prior to submitting the permit application. Guidance from DEP's Bureau of Clean Water for an alternative BMP approval process and the current list of approved alternative BMPs can be found on the DEP website.

PLANNING (PERMIT REQUIREMENTS)

What are the permit requirements for earth disturbance activities associated with Oil and Gas operations?

A person proposing oil and gas activities that involve five acres or more of earth disturbance over the life of the project must obtain an E&S Permit prior to commencing the earth disturbance activity. An applicant can obtain coverage either under an ESCGP or an individual E&S permit before beginning the project. In addition, oil and gas operators proposing to construct a well site or access road must also obtain a permit to drill and operate a well (DOW permit) prior to commencing earth disturbance. As per Section 102.4(d), a person proposing or conducting an earth disturbance activity shall obtain any other necessary permits and authorizations from DEP or conservation district, related to the project, before commencing the earth disturbance activity.

How does an Oil and Gas operator determine if the project requires an ESCGP?

Any project that will involve 5 acres or more over the life of the project which involves the earth disturbance activities associated with oil and gas exploration, production, processing, treatment operations, or transmission

facilities must obtain permit coverage before the project begins. Frequently, when considering appurtenant works or related activities, such as tank pads or well development impoundments, there are frequently other issues that must be considered to determine when a 5-acre threshold has been met or which activity should be covered by a permit. For information and guidance in determining an earth disturbance area and when an ESCGP is required, please refer to the Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbances Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities, Technical Guidance No. 800-2100-008.

Where to submit an ESCGP permit application?

An applicant seeking coverage under an ESCGP should submit an administratively complete and acceptable *Notice of Intent (NOI)* form to either the appropriate conservation district, DEP's Bureau of District Oil and Gas Operations, DEP's Regional Waterways and Wetlands Program, or Regional Permit Coordination Office (RPCO) depending on the nature and location of the proposed activity. In addition, DEP offers applicants an ePermitting option for coverage under an ESCGP through its website.

An NOI for activities involving construction of FERC-regulated transmission facilities should be submitted to conservation districts that have the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the E&S and stormwater management programs in this commonwealth. For activities proposed in a county that is not delegated, the DEP regional office will conduct the review and processing of the ESCGP for oil and gas activities. NOIs for interstate natural gas pipelines requiring a FERC certificate and non-FERC regulated transmission pipelines within 3 or more counties and 2 or more DEP regions or intrastate natural gas transmission lines should be submitted to RPCO.

NOIs for activities involving exploration, production, processing, and treatment facilities including, but not limited to, well sites, gas gathering or production lines, gathering system compressor stations, impoundments, and access roads for those facilities should be submitted to the appropriate DEP Bureau of District Oil and Gas Operations office.

DURING CONSTRUCTION

Can an approved E&S or PCSM plan be amended?

If an ESCGP Permittee determines that changes to the ESCGP approved E&S or PCSM plan are required due to site conditions or changes in the project, the permittee must contact DEP to get approval before making the change. Changes may occur as a field change, a minor amendment, or a major amendment. Please visit DEP Bureau of Clean Water FAQ document regarding permit amendment for more information.

Where should E&S and PCSM plans be displayed?

The NOI for coverage under ESCGP must include E&S, PCSM, and/or SR Plans developed in accordance with the requirements of Chapter 102. DEP approved E&S and PCSM/SR plans must be properly implemented and available on site for all permitted oil and gas activities.

Who conducts inspections and responds to complaints?

The District Oil and Gas Operations staff are responsible for inspection and complaint response for all earth disturbance activities associated with oil and gas exploration, production, processing, and treatment facilities.

Delegated conservation districts are responsible for inspection and complaint response for all earth disturbance activities associated with FERC-regulated transmission facilities. Transmission facilities include transmission lines, compressor stations, and gas purification and scrubber locations. For non-delegated counties, the appropriate DEP regional office is responsible for conducting inspections and investigating complaints.

PERMIT TERMINATION/SITE RESTORATION

How does a permittee officially close out a permit at the end of a project that is covered by an ESCGP?

According to 25 Pa. Code § 102.7, upon permanent stabilization of the earth disturbance activities, and installation of BMPs in accordance with an approved plan prepared and implemented in accordance with §§ 102.4 and 102.8, the permittee or co-permittee must submit a Notice of Termination (NOT) form to DEP or conservation district. Until the permittee or co-permittee has received written approval of a NOT, the permittee or co-permittee will remain responsible for compliance with the permit terms and conditions and will be responsible for violations occurring on the project site.

If permit coverage expired and the project is completed, the permittee must submit a NOT to DEP or the conservation district for the proper termination of the permit coverage. If permit coverage expired and the project

is not complete, the permittee must cease remaining earth disturbance activities until DEP authorizes new coverage. The permittee must file a new NOI to obtain coverage under the general permit.

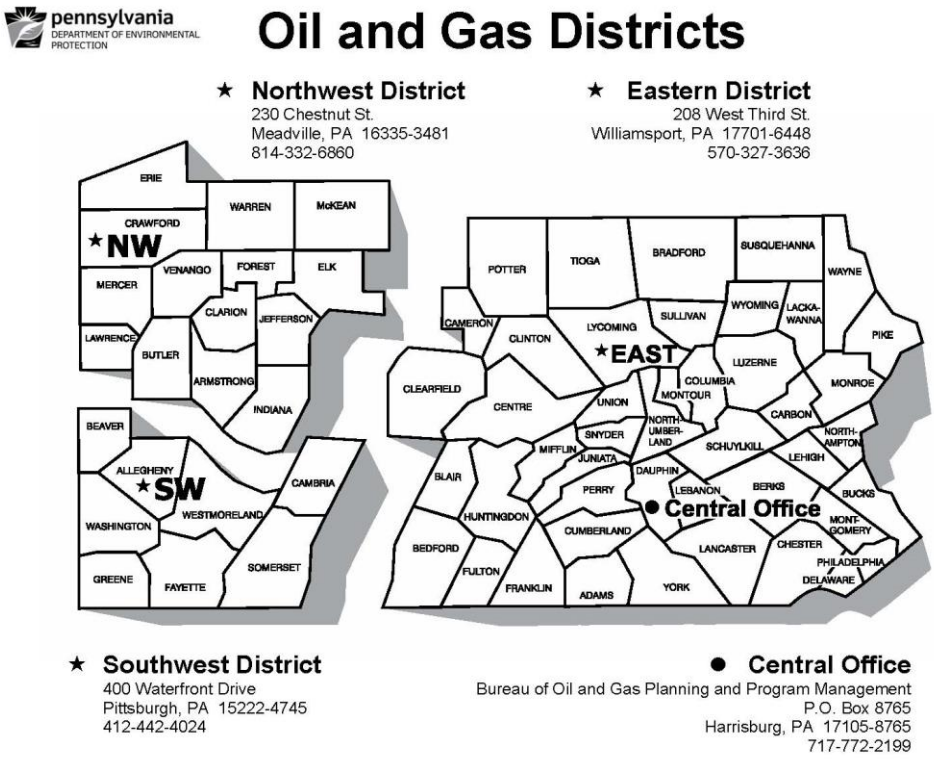
How is long-term operation and maintenance of PCSM BMPs addressed?

It is important that PCSM BMPs be properly maintained to ensure post construction stormwater management after a site is stabilized and E&S BMPs have been removed from the site. For projects that do not require a well permit under the 2012 Oil and Gas Act, the permittee, or their designee (as identified in the NOT form) will be responsible for long-term operation and maintenance of PCSM BMPs. For projects requiring a well permit under the 2012 Oil and Gas Act, the oil and gas operator who holds the well permit will be responsible for long-term operation and maintenance of all PCSM BMPs on site in accordance with the DEP-approved PCSM plan until post plugging restoration of the project site.

All forms referenced can be found at www.dep.pa.gov/O&G_Forms.

All fact sheets referenced can be found at www.dep.pa.gov/O&G_factsheets.

All Statues and Regulations referenced can be found at www.dep.pa.gov/O&G_regs.



For more information, visit www.dep.pa.gov.