8000-FM-OOGM0071 2/2017
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

DEP USE	
Auth No. 1567731	APS No. 1161658
Site No. 887880	Facility No. 891821
FIX Client No. 46098	Sub-fac No. 1476024

REQUEST FOR APPROVAL OF ALTERNATIVE WASTE MANAGEMENT PRACTICES (Conventional Operations Only)

PROJECT IDENTIFICATION

Well Operator	DEP ID/OGO No.	U.S. Well No. (API No.)	
Stephen Taraska	46098	123-49297	
Address		**Well Farm Name**	
275 Valentine Run Road		Miller	
City / **State** / **Zip Code**		**Well No.**	**Serial No.**
Russell / PA / 16345		M6	
Telephone No.	**Fax No.**	**County**	**Municipality**
814-723-2233		Warren	Conewango Twp

Note: *All submittals must include the following information:*

1) United States Geological Survey (USGS) 7.5-minute quadrangle map showing the location of the proposed alternative waste management practices
2) Full size set of plan design drawings showing proposed facility dimensions and location relative to existing facilities
3) A brief detailed project narrative describing the proposed project

INTENDED ALTERNATIVE PRACTICE

Check the appropriate box and complete the applicable section of the form.

☐ For temporary containment of pollutional substances and wastes generated during drilling, altering, or completing a well; complete section A. Pits and Tanks for Temporary Containment. See 25 Pa. Code § 78.56 for regulations.

☒ For disposal of drill cuttings from above the surface casing seat, complete section B. Alternate Waste Disposal Practices. See 25 Pa. Code § 78.61 for regulations.

☒ For disposal of residual waste and drill cuttings from below the surface casing seat, complete section B. Alternate Waste Disposal Practices. See 25 Pa. Code §§ 78.62 or 78.63 for regulations.

A. PITS AND TANKS FOR TEMPORARY CONTAINMENT

Complete this section if requesting approval of an alternative practice for temporary containment of pollutional substances and wastes from drilling, altering, or completing a well. See 25 Pa. Code § 78.56.

1. Check the box below and fill in the dates the pit will be used if you are requesting a variance from the requirement that the bottom of the pit be at least 20 inches above the seasonal high groundwater table for a pit that exists only during dry times of the year and is located above groundwater. See 25 Pa. Code § 78.56(a)(4)(iii).

☐ Variance requested; dates to be used, from _____ to _____

2. Check the box below if you are requesting approval of an alternative practice for temporary containment.

☐ Approval of another alternative practice is requested. Describe the type of waste and the temporary containment method. Include information that will demonstrate that the proposed alternative practices will provide equivalent or superior protection to the practices indentified in 25 Pa. Code section 78.56.

RECEIVED
APR 27 2026
Environmental Protection
Northwest Regional Office

Due Date 6/11/26
4/29/26 dg

B. ALTERNATIVE WASTE DISPOSAL PRACTICES

Complete this section if requesting approval of an alternative practice to dispose of drill cuttings or residual wastes at the well site. Describe the type of waste, including any additives, and the proposed alternative practice. Include information that will demonstrate the proposed practice will provide protection equivalent or superior to the practices identified in 25 Pa. Code sections 78.61, 78.62, or 78.63.

See Attached Sheet

SIGNATURE OF APPLICANT

Signature of Applicant / Well Operator	Print or Type Signer's Name and Title	Date
Stephen T Taraska	Stephen Taraska, Well Operator	3-7-25

DEP USE ONLY

☐ Approved ☒ Denied	Conditions: ☐ YES, see below or attached. ☐ NO	Date
DEP Representative: Brian Ayers		05.17.26

Conditions:

The proposed Alternative Waste Management Practices are not allowed by the regulations.
A site evaluation also determined that the site is unsuited for any Alternative Waste Managment Practice.

8000-PM-00GM0002 6/2014

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program

WELL LOCATION PLAT

PAGE 1 Surface Location

DEP USE ONLY	Auth ID #:	G:
	Permit #:	
	Project #:	C:

Denotes location of top of well on topo map.

True Latitude: NORTH

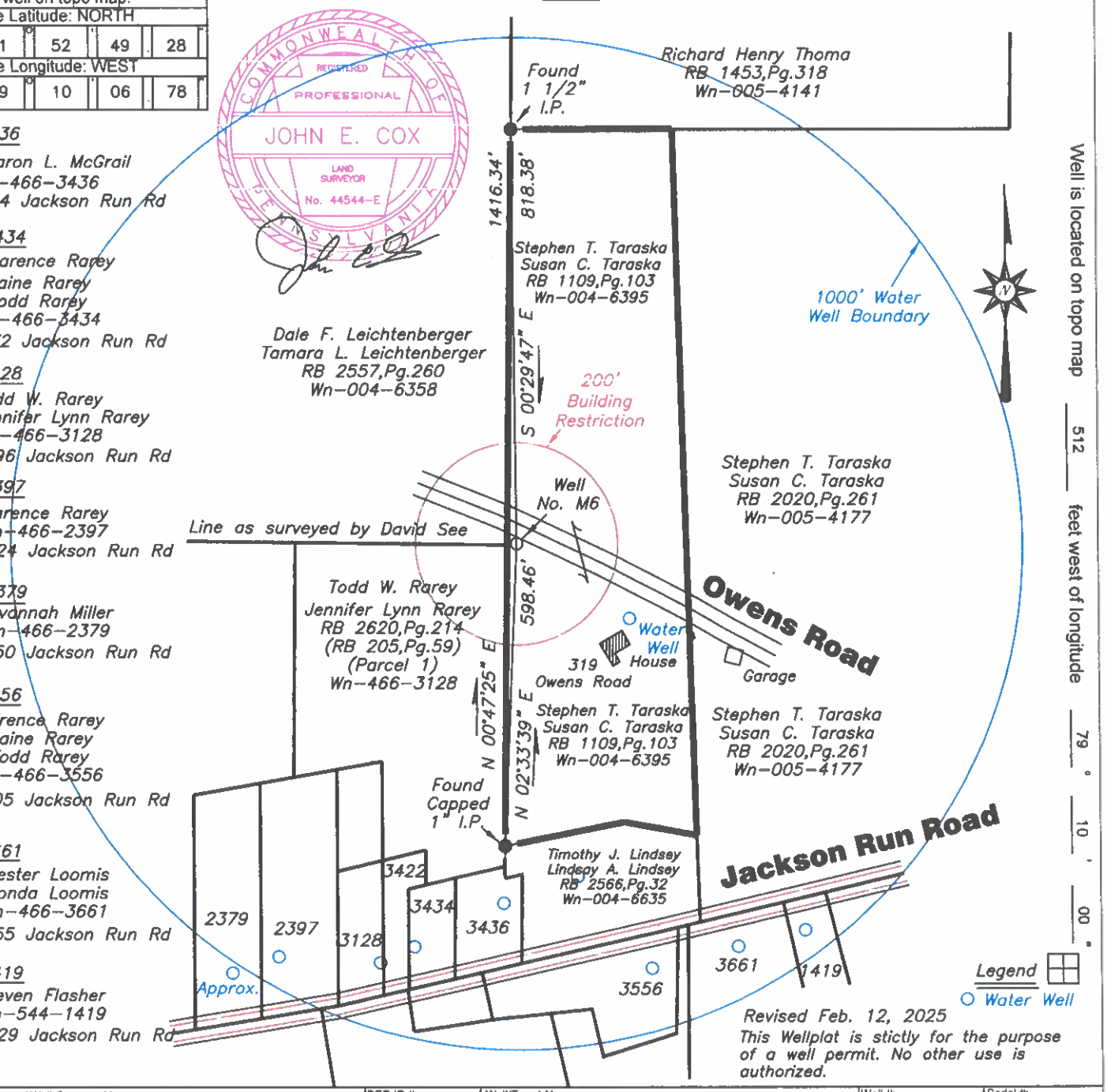
41	52	49	28

True Longitude: WEST

79	10	06	78

Well is located on topo map 13,231 feet south of latitude 41 ° 55 ' 00 "

Well is located on topo map 512 feet west of longitude 79 ° 10 ' 00 "



Applicant / Well Operator Name :	DEP ID #:	Well(Farm) Name:	Well #:	Serial #:
Stephen Taraska	46098	Miller	M6	

Address:	County:	Municipality:	Well Type:
275 Valentine Run Road, Russell, PA 16345	Warren	Conewango Township	Oil

911 address of well site:	USGS 7 1/2' Quadrangle Map Name:	Map Section:	Surface Elevation:
319 Owens Road, Warren, PA 16365	Russell	8	1400 ft.

Surveyor or Engineer:	Phone #:	Dwg #:	Date:	Scale:	Tract Acreage
John E. Cox	814-368-4360	Tar2501	1/22/25	1" = 300'	10.68 Acres

Lat. & Long Metadata Method:	Accuracy:	Datum:	Elevation Metadata Method:	Accuracy:	Datum:	Survey Date:
Direct GPS	10' ft.	NAD 83	Direct GPS	10' ft.	NAVD 88	1/22/2025

8000-PM-00GM0002 6/2014

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #	Serial #
Stephen Taraska	46098	Miller	M6	

Surface Landowner / Lessor:	Angle & Course of Deviation (Drilling)	Anticipated True Vertical Depth Feet (TVD):	Anticipated Total Measured Depth Feet (TMD):
Stephen & Susan Taraska	0 0	1250	1250

Target Formation(s):	Deepest Formation to be penetrated:	Number of laterals:	Total footage to be drilled all laterals*
Glade, Clarendon	Clarendon	0	0

Surface Owner / Water Purveyor w/ Water Supply within 1000' / 3000'	Latitude Longitude of Water Supply
Stephen & Susan Taraska	Lat:41°52'47.86" Lon:79°10'03.80"
Timothy J. Lindsey & Lindsay A. Lindsey	Lat:41°52'42.81" Lon:79°10'05.08"
Sharon L. McGrail	Lat:41°52'42.26" Lon:79°10'07.02"
Clarence Rarey, Elaine Rarey & Todd Rarey	Lat:41°52'41.38" Lon:79°10'09.33"
Todd W. Rarey & Jennifer Lynn Rarey	Lat:41°52'41.06" Lon:79°10'10.22"
Clarence Rarey	Lat:41°52'41.15" Lon:79°10'12.88"
Savannah Miller	Lat:41°52'40.8" Lon:79°10'14.1" Approx.
Clarence Rarey, Elaine Rarey & Todd Rarey	Lat:41°52'41.04" Lon:79°10'03.13"
Chester Loomis & Rhonda Loomis	Lat:41°52'41.49" Lon:79°10'00.88"
Steven Flasher	Lat:41°52'41.84" Lon:79°09'59.14"

Municipality where the well will be drilled, adjacent to the well, or within 3000 feet	Municipality where the well will be drilled, adjacent to the well, or within 3000 feet
Conewango Township, Warren County	
Farmington Township, Warren County	
Pine Grove Township, Warren County	
Brokenstraw Township, Warren County	Coal related parties
Sugar Grove Township, Warren County	None
Pleasant Township, Warren County	
Glade Township, Warren County	
City of Warren, Warren County	

Request for Approval of
Alternative Waste Management Practices

Stephen Taraska is requesting DEP approval for the "Dusting" of uncontaminated drill cuttings to the surface.

Drill cuttings and top hole water will be dispersed directly to the environment rather than into a pit.

Where the drilling operations are located in proximity to a watercourse and dusting is to be employed, the water will be contained by a temporary drill pit or steel tank. If enough vegetative filter strip does not exist to prevent discharges to the ground from flowing overland and directly into the watercourse.

When implementation of a temporary drill pit or steel tank is necessary, the fluid will be pumped directly from the pit or tank through a pipe for a sufficient distance away from the stream prior to discharge. To insure this a sufficient vegatative strip will be provided. Dispersal lines will be employed as necessary to prevent the discharge from creating channels and flowing directly to surface waters.

Fluid Handling will be performed in a manner to insure sufficient distribution to prevent erosion as a result of discharge. Drill cuttings will be incorporated into the soil.

PH and conductivity will be tested and reported according to regulations.

Spill Prevention & Control Plan

Wells are all equipped with pressure switches for plugged lines due to paraffin and frozen lead lines. Wells are not pumped in extremely cold weather. Wells are also equipped with low pressure cutout switches.

Oil absorbing diapers are kept on site. A vac truck is kept nearby ready to respond in case of a spill. Water pumps, drums, buckets, shovels, and related equipment are kept at a nearby central location. A list of response personnel is kept on site for emergencies.

Well locations will be constructed with a berm and drained to a stilling basin or gathering area for extra spill protection.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

EROSION AND SEDIMENT CONTROL PLAN FOR OIL AND GAS OPERATIONS

I. GENERAL INFORMATION

A. Administrative

Project Name: Miller Municipality: Conewango Township County: Warren

Latitude: 41 degrees 52 minutes 49 seconds Longitude: 79 degrees 10 minutes 07 seconds

B. Responsible Parties

Operator/Owner/Applicant: Stephen Taraska Phone Number: 814-723-2233

Address: 275 Valentine Run Road City: Russell State: PA Zip Code: 16345

Person(s) responsible for construction and maintenance of erosion and sediment (E&S) control best management practices (BMP) during earth disturbance activities.

Operator: Steven Taraska Phone Number: 814-723-2233

Address: 275 Valentine Run Road City: Russell State: PA Zip Code: 16345

Erosion and Sediment Control Plan (E&S Plan)prepared by:

Name: John E. Cox Phone Number: 814-368-4360

Address: 1756 West Warren Road City: Lewis Run State: PA Zip Code: 16738

C. Project Description

The project includes all the project types checked below: (Check all that apply)

☒ Oil/Gas Well ☐ Transmission Facility ☐ Gathering Facility ☐ Processing Facility ☐ Treatment Facility
☐ Centralized Fresh Water Impoundment ☐ Centralized Wastewater Impoundment ☐ Water Pipeline
☐ Ground/Surface Water Withdrawal Site ☐ Other:

Project Starting Date: Anticipated Project Completion Date:

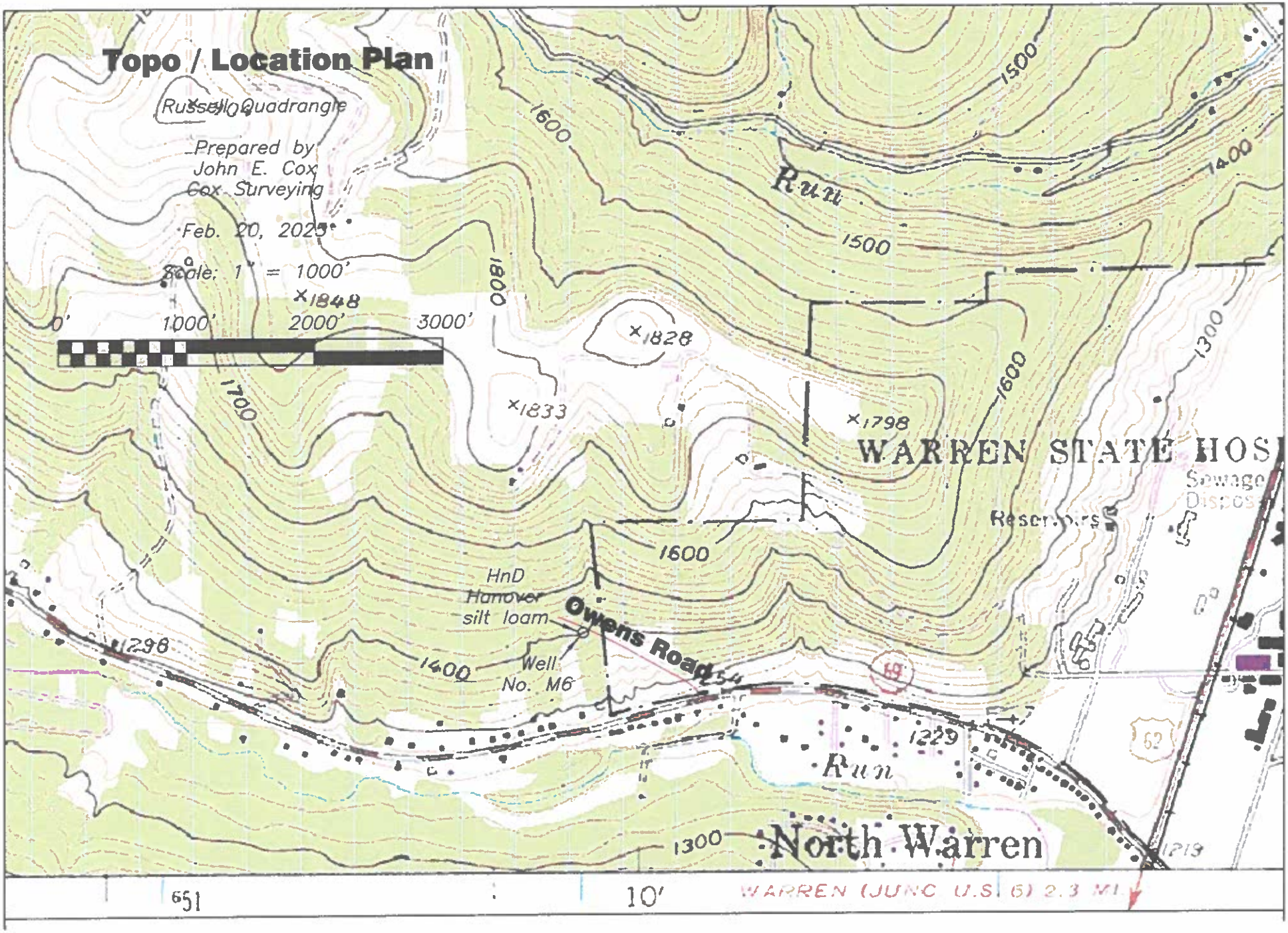
A narrative description of the proposed project is presented below: (Add additional sheets as necessary)

Stephen Taraska is planning to drill 1 oil well at 319 Owens Road approx. 1200' northwest of the intersection with Jackson Run Road. - Warren County Tax Parcel Wn-004-6395, Conewango Township, Warren County. This oil well be drilled on the edge of the right of way of Owens Road so no access road will be required. The well will be constructed on an existing pulloff of Owens Road. No new roads will be constructed.

Disturbed Acreage Calculation

	Total Length (ft.)		Average Width (ft.)		Area (sq. ft.)			
Access Roads	0	x	0	=				
Pipelines/Compressors		x		=				
Drill Pads	1	x	20' x 30'	=	600			
Impoundments		x		=				
Other (Describe)		x		=				
			Total Area (sq. ft.)	=	600	÷ 43,560 Sq. ft./A	=	0.14 A

Total Project Area (Acres): 0.14 Total Disturbed Area (Acres): 0.14


Topo / Location Plan
Russell Quadrangle
Prepared by
John E. Cox
Cox Surveying
Feb. 20, 2025
Scale: 1" = 1000'
0'
1000'
2000'
3000'
1848
1828
1833
1798
1800
1700
1600
1500
1400
1300
1298
1229
Run
HnD
Hanover
silt loam
Well
No. M6
Owens Road
WARREN STATE HOS
Sewage
Disposal
Reservoirs
North Warren
WARREN (JUNC U.S. 6) 2.3 MI
651
10'

II. E&S CONTROL PLAN NARRATIVE REPORT

Erosion and Sediment Control Planning and Implementation shall be undertaken in accordance with the following:

1. ***Minimize the extent and duration of the earth disturbance.***
2. ***Maximize the protection of existing drainage features and vegetation.***
3. ***Minimize soil compaction.***
4. ***Utilize controls that prevent or minimize the generation of increased runoff.***
5. ***Preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving streams.***

A. Soil Characteristics:

A.1. Soil types found in the project area and their limitations pertaining to earth disturbance activities are listed below:

Limiting Soil Characteristics									
Map Symbol	Soil Name	Erodible	Cut Banks Cave	Corrosive to Concrete or Steel	High Water Table	Low Strength	Piping	Poor Topsoil	Potentially Hydric
HnD	Hanover silt loam		X	C/S	X	X	X		X

A.2. A description of the types, depth, slope, and limitations of the soils and the methods used to address the identified soil limitations are presented below and on the construction drawings:

Hanover silt loam, 15 to 25% slopes. This deep soil is moderately steep and moderately well drained. Surface layer is about 4" thick. Subsoil extends to a depth of 60". Permiability is moderate above the fragipan and moderately slow in the fragipan. Water capacity is moderate. Runoff is rapid. Erosion hazard is very severe. (Soil Survey of Warren & Forest Counties)

A.3. A description of geologic formations on site that may cause pollution when disturbed during construction is presented below:

A.4. A description of bedrock and/or soil conditions that have the potential for significant slope failure is presented below:

A.4.1. Is the earth disturbance likely to cause pollution from naturally occurring geologic formations or soil conditions?

☐ Yes ☒ No

If yes, identify and 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).

A.5. Is coal or other acid-producing rock (APR), including previously surface mined areas, likely to be intercepted during construction? This will be determined by drill holes/core holes drilled to the maximum excavation depth when due diligence dictates the need. ☐ Yes (proceed to A.5.1) ☒ No (proceed to B)

- Reference material such as coal resource publications for further explanation. (*see notes A & B, in Instructions for additional detail*)

A.5.1. Is the APR excavated likely to be greater than 250 tons?

☐ Yes ☐ No

A.5.2. Will all of the APR be removed from the site to an approved landfill?

☐ Yes ☐ No

A.5.3. If the answer to question A.5.2 is 'No,' prepare and submit an APR handling plan. Refer to the Pennsylvania Department of Environmental Resources (PADEP) Fact Sheet, "How to Avoid and Handle Acid-Producing Rock Formations Encountered During Well Site Development," referenced in the instructions. An APR handling plan is attached. ☐ Yes ☐ No

A.5.4. Does the proposed excavation area lie within a groundwater discharge zone (such as defined by the presence of springs or wetlands) or within areas with high groundwater tables? ☐ Yes ☒ No

If yes, the APR handling plan must be designed to avoid contact with these areas.

A.5.5. Does the proposed excavation lie within 500 ft. horizontally from an abandoned or active deep mine?

☐ Yes ☐ No

If yes, consult the appropriate DEP Underground Mine Office permitting section for additional information.

B. Earth Disturbance Activity
B.1. Past land use is presented below: Oil Production
B.2. Current land use is presented below: Oil Production

C. Off Site Discharge Analysis

Will the project include a non-surface water discharge? ☐ Yes ☒ No

If yes, please provide an off-site discharge analysis, including calculations showing downstream impacts of project runoff

D. Surface Water Classification

Stream name and watershed with the stream designated **and** existing uses are listed below. Streams that are siltation impaired are identified with a check in the check box.

The DEPs eMapPA (located at www.depgis.state.pa.us/emappa/) is used to identify stream name/watershed and designated/existing uses that may receive direct runoff within or from the oil and gas earth disturbance activity.

Stream Name/Watershed	Designated/Existing Use	Siltation Impaired?
Jackson Run	CWF	☐ Yes
		☐ Yes
		☐ Yes
		☐ Yes

The proposed Alternative Waste Management Practicess are not allowed by the regulations.
A site evaluation also determined that the site is unsuited for any Alternative Waste Managment Practice.

E. BMP Description Narrative

Site Access

General

This section addresses site access during actual construction of a proposed project, including any site access for site preparation work. When it becomes necessary to remove vegetative cover or cross surface waters including streams and wetlands to conduct a survey, or complete required exploration drilling and sampling, appropriate BMPs will be installed to protect the surface waters. The BMPs as indicated below are proposed for use on the project.

1. Rock Construction Entrance

The purpose of the Rock Construction Entrance (RCE) is to remove sediment and excessive mud from tires and keep it off the public road. A RCE shall be installed at each entrance and constantly maintained. ***See Appendix A and PADEP Erosion and Sediment Pollution Control Manual (E&S Manual), March 2012, (No. 363-2134-008) pages 13-17.*** In special protection watersheds (High Quality (HQ) or Exceptional Value (EV)) rock construction entrance with wash rack will be installed. Wash water will be collected and treated for sediment removal prior to discharge to surface water. Where wash racks are not feasible, the following alternative method will apply:

- On paved surface public roads, a vacuum truck sweeper or sweeper with a catch bin attachment will be used to clean the roadway on a continuing basis.
- On dirt or gravel surface public roads a rigorous manual removal of sediment and mud from vehicle/equipment tires prior to exiting construction sites, supplemented by immediate recovery, through manual or mechanical means will be necessary to keep excessive mud and/or sediment from being tracked from the project site onto public roadways. Dust control and/or compaction via rolling of the dirt public road surface will be implemented as needed.

For both of the alternative methods, the RCE will be extended to a minimum 100-ft. length.

a. Will a RCE be used? ☐ Yes ☒ No

b. Will a tire wash be used? ☐ Yes ☒ No

c. Will either alternate explained above be used? ☐ Yes ☐ No

If no, to any of the above question, explain the reasoning.

2. Crowned/Sloped Roadways

Crowned/sloped roadways are typically installed where the topography allows for road surface drainage. All discharges should be to stable drainage courses or to well-vegetated areas. In situations where crowned roadways will not function properly (e.g. across steep slopes) an insloped roadway will be constructed. ***See Appendix A and PADEP E&S Manual pages 18-20.***

a. Will these BMPs be used? ☐ Yes ☒ No

b. Will a crowned roadway be used? ☐ Yes ☒ No

c. Will an insloped roadway be used? ☐ Yes ☒ No

If no to both b. and c. explain the reasoning.

3. Waterbars

Waterbars are typically used to control stormwater runoff on retired access road and skid trails as well as pipeline and utility line right-of-ways. They are not recommended for active access roads or skid trails due to difficulty of moving equipment over them as well as the need for continual maintenance due to damage from traffic. Waterbars are not appropriate for incised roadways where there is no opportunity to discharge runoff to either side. Waterbars may be used to direct runoff to well vegetated areas or sediment removal facilities (e.g. sediment traps or sediment basins). They should discharge to the downslope side of the access road, skid trail, or right-of-way so that the runoff will flow away from, not back onto the roadway, skid trail, or right-of-way.

Compost diversion socks may be used in lieu of waterbars on surface waterline right-of-ways for oil & gas drilling. (Usually, there is little or no earthmoving during installation of surface waterlines, so no material is available to construct waterbars. Clearing and grubbing in wooded areas removes protective cover from the soils, so a BMP needed to direct runoff off the right-of-way.) ***See Appendix A and E&S Manual pages 21-22.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes, will waterbars be placed according to the spacing indicated in Appendix A? ☐ Yes ☐ No

If no to b., explain and provide supporting calculations.

4. Broad-Based Dips

Broad-based dips are used to direct runoff from active access roads to well vegetative areas or sediment removal BMPs (e.g. sediment traps or sediment basins). Broad-based dips, unlike waterbars, are easily traversed by most construction equipment and typically require less maintenance to ensure their integrity. There are two constructed forms of the broad-based dip – first, for low gradient roadways (less than or equal to 5 percent) and second, for high gradient roadways (greater the 5 percent and up to 10 percent). Due to the nature of broad based dips, they should not be constructed on roads with grades exceeding 10 percent. Spacing requirements for broad-based dips and the two forms of construction are presented in ***See Appendix A and E&S Manual pages 23-25.***

The proposed Alternative Waste Management Practicessssdfass are not allowed by the regulations.
A site evaluation also determined that the site is unsuited for any Alternative Waste Managment Practice.

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes, will recommended spacing in Appendix A be used? ☐ Yes ☐ No

If no to b, explain and provide supporting calculations.

5. Roadside Ditch

In most cases, the ditches paralleling temporary access roads and haul roads need not be lined if sufficient ditch relief culverts are provided, erosion resistant soils are present, and flow velocities are less than 2 ft. per second (fps). However, protective liners are required for all roadside ditches discharging to special protection waters and directly to surface waters, additionally, where necessary to prevent the erosion of the channel itself. A typical cross-section for a roadside ditch and an access road layout with ditch relief culverts is shown in ***Appendix A and the E&S Manual page 30.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes, will recommended culvert spacing in Appendix A be used? ☐ Yes ☐ No

If no to b, explain and provide supporting calculations.

6. Ditch Relief Culvert (Cross Drain Culvert)

Ditch relief culverts minimize the potential for erosion of road side ditches as well as flooding of the roadway by reducing the volume of flow being conveyed by the ditch. In addition to providing a culvert wherever concentrated upslope drainage is encountered, it is important to provide additional culverts at intervals along the roadway where runoff is being conveyed by a ditch. Ditch relief culverts should be placed across the road at a 30-degree downslope angle with a pipe slope of 2 to 4 percent (Lower end should be at least 2 in. below upper end) to help keep the culvert clean and ensure water flow. Culverts should be installed before the ground freezes and will be 12 in. or larger in diameter. ***See Appendix A and the E&S Manual pages 31-32.***

a. Will this BMP be used? ☒ Yes ☐ No

b. If yes, will recommended culvert spacing and sizing in Appendix A be used? ☒ Yes ☐ No (Culvert spacing may be adjusted slightly to take advantage of natural drainage courses.)

If no, explain and provide supporting calculations.

7. Turnout

Channels that drain water away from roadside ditches into well-vegetated areas are known as turnouts. Turnouts are typically located along crowned roadways where runoff cannot sheet flow off the roadway. Like ditch relief culverts, the purpose of turnouts is to minimize the volume of water in a roadside ditch. Spacing is similar to spacing for ditch relief culverts. Turnouts should be located so as to take advantage of natural drainage ways or buffer areas wherever possible. Where a suitable vegetative filter strip is not available, a compost sock, rock filter, or other sediment removal BMP should be installed at the outlet of the turnout. ***See Appendix A and the E&S Manual page 33.***

Will this BMP be used? ☐ Yes ☒ No

8. Riprap Aprons

Riprap aprons may be used to prevent scour at pipe or channel outfalls where anticipated discharge velocities do not exceed 17 ft. per second, there is sufficient room to construct the apron, and where the aprons can be installed on a level grade. In cases where discharge velocities exceed 17.0 fps, a suitable means of velocity reduction should be used prior to discharging significant flows onto the riprap apron. In cases where there is no level grade, a drop box may be used to obtain sufficient level ground for proper installation. Aprons should be oriented so that the discharge enters the receiving channel at less than 90 degrees to channel flow direction. In no case should the discharge enter the channel at an angle equal to or greater than 90 degrees to the channel flow direction. ***See Appendix A and the E&S Manual pages 232-235.***

Will this BMP be used? ☐ Yes ☒ No

9. Pumped Water Filter Bag

Pumped water filter bags may be used to filter water pumped from disturbed areas prior to discharge to surface waters. They may also be used to filter water pumped from the sediment storage areas of sediment basins and sediment traps. Bags shall be placed in well vegetated grassy areas and discharge onto stable, erosion resistant areas. Pumped water filter bags may be placed on filter stone to increase discharge capacity. Pumped water bags shall not be placed on slopes greater than 5 percent. Pumping rates shall not exceed 750 gpm. or half of the maximum rate specified by the manufacturer, whichever is less. ***See Appendix A and the E&S Manual pages 53-55.***

Will this BMP be used? ☐ Yes ☒ No

Sediment Barriers and Filters

General

Sediment barriers and filters will be used as perimeter controls for small disturbed areas and as initial protection against sediment pollution during construction of other BMPs such as sediment basins or traps.

Each type of sediment barrier and filter has specific advantages and limitations. Care is exercised in the selection of all sediment barriers to ensure they are suited to the particular site conditions where they are installed. Sediment barriers are installed on existing level grade to ensure their effectiveness. The ends of sediment barriers and filters are turned up slope at 45 degrees to the main barrier and filter alignment for a distance sufficient to elevate the bottom of the barrier and filter ends to the elevation of the top of the barrier at the lowest point. See E&S Manual.

1. Compost Filter Sock

Compost filter socks should be used in lieu of silt fence in special protection watersheds, unless a vegetative filter strip meeting the requirements in the ***E&S Manual pages 94-95*** exists between the proposed fence location and the receiving surface water. Compost filter socks shall be installed on existing level grade. Wood chips may be substituted for the compost filler in HQ and non-special protection watersheds, but not in EV watersheds. The minimum diameter for a compost sock is 12 in. Where larger diameter socks are needed to meet slope length requirements, socks may be stacked in pyramid fashion (as when constructing a compost sock trap) to reach equivalent sock heights. Socks may be staked through the sock or immediately downslope. Rocks, tree limbs, and other objects shall be removed prior to installation to ensure continuous contact between the compost filter sock and the underlying soil. ***See Appendix A and the E&S Manual pages 62-66.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a, will the compost standards in Appendix A be met? ☐ Yes ☐ No

c. If yes to a, will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no to b or c, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

2. Rock Filter

Rock filters may be used to control runoff at the downstream end of constructed channels during construction until the channel protective lining is installed or during temporary disturbance within the channel. Rock filters may only be used in roadside ditches at inflows to ditch relief culverts on dirt or gravel roads or on temporary or permanent access roads. When used as an ABACT BMP in high quality watersheds, the sediment removal efficiency of rock filters must be raised by anchoring a 6-in. layer of compost on the up gradient side of the rock filter or staking a compost sock on the up gradient side of the rock filter. ***See Appendix A and the E&S Manual pages 92-93.***

Will this BMP be used? ☐ Yes ☒ No

3. Rock Filter Outlet for Filter Fence or Straw Bale Barrier

Rock filter outlets may be used to address problems of concentrated flow to sediment barriers. Whenever a silt fence or straw bale sediment barrier has failed due to concentrated flow a rock filter outlet shall be installed. When used as an antidegradation best available combination of technologies (ABACT) BMP in HQ or EV watersheds, rock filter outlet sediment removal efficiency must be raised by anchoring a 6-in. layer of compost or staking a compost sock on the up gradient side of the rock filter outlet. ***See Appendix A and the E&S Manual pages 73-74.***

Will this BMP be used? ☐ Yes ☒ No

4. Straw Bale Barrier

Straw bale barriers may be used to control runoff from small, disturbed areas provided that runoff is in the form of sheet flow. Since straw bales tend to deteriorate within a three-month period, they should be considered short-term control measures. Straw bale barriers should not be used in areas of concentrated flows (e.g. channels, swales, erosion gullies, across pipe outfalls, as inlet protection, etc.) or in areas where they cannot be properly staked (e.g. paved areas). ***See Appendix A and the E&S Manual pages 89-91.***

a. Will this BMP be used? ☒ Yes ☐ No

b. If yes, will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no to b, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

5. Standard Silt Fence

Silt fence must be installed on existing level grade below disturbed areas. Both ends of the fence must be extended at least 8 ft. upslope at 45 degrees to the main fence alignment. Silt fence may not be installed in stream channels, across ditches, or other areas of concentrated flow. Install silt fence before the ground freezes. Belted silt fence may be substituted for standard silt fence. ***See Appendix A and the E&S Manual pages 75- 79.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a., will the fabric properties listed in Appendix A be met? ☐ Yes ☐ No

c. If yes to a., will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

6. Reinforced Silt Fence

Reinforced silt fence must be installed on existing level grade below disturbed areas. Both ends of the fence must be extended at least 8 ft. up slope at 45 degrees to the main fence alignment. Silt fence may not be installed in stream channels, across ditches or other areas of concentrated flow. Install silt fence before the ground freezes. A continuous row of staked straw bales immediately below the fence may be substituted for the guy wires. ***See Appendix A and the E&S Manual page 78, 80- 81.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a., will the fabric properties listed in Appendix A be met? ☐ Yes ☐ No

c. If yes to a., will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

7. Super Silt Fence

Super silt fence may be used to control runoff from some small, disturbed areas where the maximum slope lengths for reinforced silt fence cannot be met and sufficient room for construction of sediment traps or basins does not exist. Both ends of the fence must be extended at least 8 ft. up slope at 45 degrees to the main fence alignment. Super silt fence is not to be used in areas where rock or rocky soils prevent the full and uniform anchoring of the fence or proper installation of the fence posts. It should be used only where access exists or can be made for the construction equipment required to install and remove the chain link fencing (e.g. trencher and posthole digger). ***See Appendix A and the E&S Manual pages 78, 82-84.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a., will the fabric properties listed in Appendix A be met? ☐ Yes ☐ No

c. If yes to a., will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

8. Sediment Filter Log

Sediment filter logs are tube-shaped devices filled with straw, curled wood, flax, rice, or coconut fiber and wrapped with UV-degradable polypropylene netting, burlap, jute, or coir for longevity. They may be used to control runoff from small disturbed areas where silt fence would normally be used as well as certain locations where silt fence is not typically effective (e.g. above headwalls and end walls). In general, sediment filter log size requirements are determined by slope and slope lengths above the sediment filter logs. Curled wood sediment filter logs may be used in HQ watersheds. The other types of sediment filter logs are not appropriate in HQ or EV watersheds when used alone. ***See Appendix A and the E&S Manual pages 85-86.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes, will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no to b, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

9. Wood Chip Filter Berm

Wood chip berms may be used on wooded or rocky slopes where staking and trenching of other BMPs is difficult or impossible. Large obstructions such as trees, limbs, boulders, etc. should be removed prior to placement of the wood chips. Wood chip filter berms should not be placed in areas of concentrated flow, they should be aligned parallel to existing contours below all disturbed areas. It is recommended that this BMP be used in conjunction with a vegetative filter strip meeting the requirements in ***the E&S Manual, pages 94-95***. Wood chip filter berms may be used in HQ watersheds, but are not appropriate for use in EV watersheds unless the source of the chips is totally hardwoods. They are not recommended for use within 50 ft. of receiving surface water. ***See Appendix A and the E&S Manual pages 87-88.***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes, will the maximum slope lengths listed in Appendix A be met? ☐ Yes ☐ No

If no to b, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

10. Vegetative Filter Strip

A vegetative filter strip consists of a well-vegetative, grassy area below a disturbed area that can be used to remove sediment from runoff prior to its reaching surface waters. To be effective, runoff should be in the form of sheet flow and the vegetative cover should be established prior to the disturbance. The minimum width of the filter strip depends on the slope between the disturbed area and the receiving surface water. Constructed filter strips are not recommended due to the time required to establish vegetation and the need to control runoff from the areas disturbed while constructing filter strips. Vegetative filter strips on neighboring properties should not be proposed unless permission to use that area as a vegetative filter strip has been obtained from the property owner along with an agreement to leave the filter strip area undisturbed until the earth disturbance is restored. ***See Appendix A and the E&S Manual pages 94-95***

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a, is the vegetative filter strip located on property owned or controlled by the applicant?

☐ Yes ☐ No

If no to b, provide an agreement with the property owner that allows the vegetative filter strip to remain undisturbed until the site is restored.

c. Will the recommended width be used? ☐ Yes ☐ No

If no to c, what additional BMP will be provided at this location?

Runoff Conveyance BMPs (Channels)

General

All channels and berms are aligned to provide positive drainage throughout. Sharp turns, high angles of confluence, and very low gradients (<1% bed slope) are to be avoided wherever possible. Slopes are not averaged - channels with significant changes in slope are segmented and each segment of the channel designed separately for capacity to convey peak flow with the gentlest slope and protective liner suitable for the steepest slope. All channels are sized to convey calculated peak flows. All channels are provided with a suitable protective liner to prevent erosion within the channel. A summary table on the detail sheet provides channel dimensions and identifies protective liner(s). See Appendix A and the E&S Manual pages 127-149.

The types(s) of channels used in this project are checked below. (indicate all that apply)

	Temporary	Permanent
Diversion	☐	☐
Collector	☐	☐
Outlet	☐	☐

1. Vegetative Channels

Vegetative channels require separate calculations showing sufficient capacity and adequate protection both before and after establishment of vegetation. Unless the channel is sodded in accordance with page 148 and 279 of the E&S Manual, a suitable temporary liner must be provided that meets maximum shear stress and roughness coefficients provided by manufacturer's specifications or conforming to Table 6.2, Appendix A. The temporary liner (e.g. rolled fiber blanket) should be firmly anchored to the bottom and sides of the channel to hold soil in place until the vegetation becomes established. The seed mixture used in vegetative channels should be suitable for the anticipated flow conditions based on channel location and type of soil(s) encountered. The channel must be sized to accommodate calculated peak flow requirements before and after establishment of vegetation. ***See Appendix A and the E&S Manual pages 127-133.***

Will this BMP be used? ☐ Yes ☒ No

2. Riprap Channels

Rock used for riprap should consist of sound, durable rock, insoluble in water. This does not exclude limestone since the rate of dissolving for limestone is very low for non-acid water. Riprap should be free of structural defects, shale seams and foreign materials such as quarry dust, soil, shale, and organic matter. Individual pieces should be sharply angular, whenever possible, block-shaped and have a minimum specific gravity of 2.5. No piece should have a length exceeding three times its width or depth. Minimum placement thickness should be equal to 1.5 times the maximum stone size. ***See Appendix A and the E&S Manual pages 133-149.***

Will this BMP be used? ☐ Yes ☒ No

3. Berm

Berms may be used in a similar manner to channels so long as flow can be maintained along the upslope side of the berm. The maximum tributary area to a berm should be 5.0 acres unless otherwise permitted by the reviewing agency. Objectionable materials should be removed from the berm alignment prior to construction. All berms must be properly compacted. Other design criteria for berms are the same as for channels.

Will this BMP be used? ☐ Yes ☒ No

4. Top-of-Slope Berm

Berms may be used in a similar manner to channels so long as flow can be maintained along the upslope side of the berm. The design criteria for berms are similar to channels. The maximum tributary area to a berm should not exceed 5 acres unless otherwise permitted by DEP or conservation district. Top-of-slope berms are typically used to prevent runoff from running over the edge of a fill and causing erosion on the fill slope. The top-of-slope berm captures runoff from the top of a fill and conveys it to a temporary slope pipe or groin ditch leading to a collector channel, sediment trap, or sediment basin. The channel behind the berm shall have positive grade to outlet and an appropriate protective lining. ***See Appendix A and the E&S Manual pages 150-152.***

Will this BMP be used? ☐ Yes ☒ No

Sediment Traps/Basins

General

Sediment Traps/Basins are designed to function as either temporary facilities (i.e. compost sock sediment traps) or incorporated into the permanent post construction stormwater management system (i.e. post construction stormwater management basins) upon completion of the project. Whenever possible, sediment traps/basins are located down gradient proposed areas of disturbance. Consideration is given to how the locations for all proposed traps/basins will be accessed. When a proposed location is not easily accessible, special attention to maintenance requirements and the construction of any access roads are provided. The location of traps/basins on steep slopes or on unstable soils is avoided wherever possible. Sediment traps are not to be located within stream channels or in wetlands.

1. Compost Sock Sediment Trap

Where there is little or no opportunity to direct runoff from an access road into a well vegetative area, a compost sock sediment trap may be used to treat the runoff prior to discharge. This BMP can be installed, used, and later removed with relatively little area disturbance. The compost within the sock can be used during cleanup as a vegetative growth medium. The maximum drainage area this is tributary to the compost sock trap is 5 acres. A minimum of 2000 cu. ft. of storage capacity for each acre that contributes to the tributary drainage acre should be provided with 12 in. of freeboard. No spillways are required for compost sock sediment traps. ***See Appendix A and the E&S Manual pages 34-35.***

Will this BMP be used? ☐ Yes ☒ No

2. Embankment Sediment Trap

Embankment Sediment Traps may be used to control runoff from drainage areas up to 5 acres (disturbed and undisturbed). They must be sized to provide 2,000 cu. ft. of total storage capacity for each acre tributary to the trap. The sediment storage zone is considered to be 700 cu. ft. per acre. Outlets should be located as far from the inflow as possible. At a minimum, spillway widths in feet for embankment traps should be two times the acreage of the contributing drainage area. However, when not discharging directly into a waterway, the minimum spillway width in ft. is six times the contributing drainage area. ***See Appendix A and the E&S Manual pages 212-216.***

Will this BMP be used? ☐ Yes ☒ No

3. Barrel/Riser Sediment Trap

For barrel/riser sediment traps the crest of the riser should be set at the elevation at which the required 2,000 cu. ft./acre storage capacity is provided. The riser and outlet barrel should be sized to provide a discharge

capacity of 1.5 cu. ft. per second/acre tributary to the trap. The embankment associated with the barrel/riser should provide at least 12 in. of freeboard above the maximum design water elevation – the elevation at which 1.5 cu. ft. per second/acre discharge capacity is provided. Perforations in the riser to dewater the trap should be limited to 1 in. diameter hole per vertical foot of riser with the lowest perforation at the sediment storage elevation. All supporting calculations should be provided. ***See Appendix A and the E&S Manual pages 212-213, 217-222.***

Will this BMP be used? ☐ Yes ☒ No

4. Sediment Basins

Sediment basins may not be located within a stream channel, wetland; or the drainage area of a sediment trap, or sediment basin. The bottom elevation may not be located below the seasonal high water table, adjacent wetlands, or perennial stream channels. Due to maintenance requirements, access to sediment basins must be maintained for the life of the basin. Sediment storage of 1,000 cu. ft. per disturbed acre over the life of the project within the watershed of the basin is required. A dewatering zone of 5,000 cu. ft. for each disturbed and undisturbed acre tributary to the basin is also required. Sediment basins should have a flow length to width ratio of at least 2L:1W unless a turbidity barrier or a suitable sediment forebay is provided. In special protection watersheds a 4L:1W flow length to width ration should be provided. ***See Appendix A and the E&S Manual pages 159-165.***

Will this BMP be used? ☐ Yes ☒ No

Stabilization Methods and Standards

General

As soon as slopes, channels, ditches, and other disturbed areas reach final grade they are stabilized. Upon completion or temporary cessation of the earth disturbance activity in a special protection watershed, the portion of the project site tributary to the special protection waters is immediately stabilized. In all other watersheds, cessation of activity for at least four days requires temporary stabilization. Keeping stabilization current with earthmoving is required for all projects, regardless of watershed characterization. See Appendix A and the E&S Manual pages 260-281.

1. Erosion Control Blanket

There are many varieties of erosion control blankets. They range from rolls of natural and artificial materials, which are typically installed by hand, to liquid, spray-on materials that make use of a bonding agent to hold natural or artificial fibers in place until vegetation becomes established. Erosion control blanketing (either rolled or sprayed) should be installed or applied on all slopes 3H:1V or steeper, disturbed areas within 50 ft. of a surface water (100 ft. of an HQ or EV surface water) or where soil conditions indicate blanketing is needed to achieve the required vegetative cover. Whether blanketing is rolled on or sprayed on manufacturer's recommendations must be followed. ***See Appendix A and the E&S Manual pages 273-274.***

Will this BMP be used? ☐ Yes ☒ No

2. Temporary Stabilization

Upon temporary cessation of activity or any stage or phase of an activity where the cessation of earth disturbance activities will exceed four days (e.g. storage piles), the disturbed area will either be seeded and mulched with the temporary seed mixture capable of resisting accelerated erosion and sedimentation or an acceptable BMP which temporarily minimizes accelerated erosion and sedimentation. Soils should be tested to determine proper soil amendment application rates for the proposed seed mixtures. Mulch will be applied at a rate of 3-4 tons/acre. Prior to seeding, soil amendments will be applied as follows:

Soil Amendment	Type	Rate of Application
Fertilizer		
Lime	Ground Limestone	4 tons per acre

Seed Mixture	Rate of Application (lb./acre)	Area of Disturbance
White Dutch Clover	5 pounds per acre	
Birdsfoot Trefoil	3 pounds per acre	
Crimson Clover	5 pounds per acre	
Oats or Wheat	50 pounds per acre	

Explain any specialized techniques to be used for temporary stabilization.

3. Permanent Stabilization

Upon final completion of an earth disturbance activity or any stage or phase of an activity, the site shall immediately have top soil restored, replaced, or amended, seeded, mulched, or otherwise permanently stabilized and protected from accelerated erosion and sedimentation. Soils should be tested to determine proper soil amendment application rates for the proposed seed mixtures. Mulch will be applied at a rate of 3-4 tons/acre. Prior to seeding, soil amendments will be applied as follows:

Soil Amendment	Type	Rate of Application
Fertilizer		
Lime	Ground Limestone	4 tons per acre

Seed Mixture	Rate of Application (lb./acre)	Area of Disturbance
White Dutch Clover	5 pounds per acre	
Birdsfoot Trefoil	3 pounds per acre	
Crimson Clover	5 pounds per acre	
Oats or Wheat	50 pounds per acre	

Explain any specialized techniques to be used for permanent stabilization.

Stream and Wetland Crossings

General

The types and locations of control measures needed at stream and wetland crossings depend upon the slope of the land and natural drainage at that location. Upslope runoff will be diverted around the work area by use of waterbars or other BMPs. Sediment barriers will be located downslope of trench or storage piles. Soil stockpiles will not be located in swales or ditch or within 10 ft. of a stream. See Appendix A and the E&S Manual page 284-289.

1. Stream Crossing - Road

Unstable stream crossings present a potential for sediment pollution to waters of the Commonwealth, stream degradation, flooding, and safety hazards and should be avoided wherever possible. When it is unavoidable to cross an existing stream channel bridges, single culverts, or multiple culvert crossings (see Appendix A) must be must be installed. Temporary or permanent stream crossings must be provided wherever construction equipment, including clearing and grubbing equipment, must cross a stream channel. Only clean rock fill meeting Chapter 105 permitting standards may be placed within the stream channel. All stream crossings must conform to Chapter 105 permitting requirements. ***See Appendix A and the E&S Manual pages 36-40.***

Will a temporary stream crossing be constructed? ☐ Yes ☒ No

Will a permanent stream crossing be constructed? ☐ Yes ☒ No

2. Wetland Crossing - Road

Unstable wetland crossings present a potential for sediment pollution to waters of the Commonwealth. Wetland crossings must be avoided wherever possible. Where wetland crossing is unavoidable, the location of the crossing and its orientation must be selected so as to have the least possible impact upon the wetland. Temporary crossings of wetlands should be constructed from materials that can be placed with minimum disturbance of the soil surface and completely removed when no longer needed. All wetland crossings must conform to Chapter 105 permitting requirements. ***See Appendix A and the E&S Manual pages 41-42.***

Will a temporary wetland crossing be constructed? ☐ Yes ☒ No

Will a permanent wetland crossing be constructed? ☐ Yes ☒ No

3. Utility Line Flumed Stream Crossing

Utility line flumed stream crossings should be undertaken at minor streams, those less than or equal 10 ft. wide at normal flow depth, swales, ditches, channels, and water ways. The flume should be installed prior to trench excavation and should be of sufficient size to convey normal stream flow over the trench. Grubbing shall not take place within 50 ft. of top-of-bank until all materials required to complete crossing are on site and pipe is ready for installation. Water accumulating within the work area shall be pumped to a pumped water filter bag or sediment trap prior to discharge into any receiving surface water. Trench plugs shall be installed in the trench on both sides of the stream channel. Hazardous and/or pollutant material storage areas shall be located at least 100 ft. back from the top of streambank. All excess excavated material shall be immediately removed from the stream crossing area. All disturbed areas within 50 ft. of top-of-bank shall be blanketed or matted within 24 hours of initial disturbance for minor streams or 48 hours of initial disturbance for major streams. ***See Appendix A and the E&S Manual page 287.***

Will this BMP be used? ☐ Yes ☒ No

4. Utility Line Stream Crossing with Pump Bypass

Utility line stream crossings with pump bypass should be undertaken at minor streams, those less than or equal 10 ft. wide at normal flow depth, swales, ditches, channels and water ways. Grubbing shall not take place within 50 ft. of top-of-bank until all materials required to complete crossing are on site and pipe is ready for installation. Water accumulating within the work area shall be pumped to a pumped water filter bag or sediment trap prior to discharge into any receiving surface water. Trench plugs shall be installed in the trench on both sides of the stream channel. It is important that the bypass pump intake is maintained a sufficient distance from the stream bottom to prevent pumping of channel bottom material. Hazardous and/or pollutant material storage areas shall

be located at least 100 ft. back from the top of stream bank. All excess excavated material shall be immediately removed from the stream crossing area. All disturbed areas within 50 ft. of top-of-bank shall be blanketed or matted within 24 hours of initial disturbance for minor streams or 48 hours of initial disturbance for major streams. ***See Appendix A and the E&S Manual page 288.***

Will this BMP be used? ☐ Yes ☒ No

5. Utility Line Stream Crossing with Cofferdam

Utility line stream crossings with cofferdam should be undertaken at major streams when flumed or pumped stream crossings are not feasible. As with pumped and flumed utility line stream crossings, grubbing shall not take place within 50 ft. of top-of-bank until all materials required to complete crossing are on site and pipe is ready for installation. Water accumulating within the work area shall be pumped to a pumped water filter bag or sediment trap prior to discharge into any receiving surface water. Trench plugs shall be installed in the trench on both sides of the stream channel. Hazardous and/or pollutant material storage areas shall be located at least 100 ft. back from the top of stream bank. All excess excavated material shall be immediately removed from the stream crossing area. All disturbed areas within 50 ft. of top-of-bank shall be blanketed or matted within 24 hours of initial disturbance for minor streams or 48 hours of initial disturbance for major streams. ***See Appendix A and the E&S Manual page 289.***

Will this BMP be used? ☐ Yes ☒ No

6. Trench Plug

Trench plugs are used to avoid a preferential pathway for groundwater flow (i.e. "French Drain" effect within the utility trench). Properly installed trench plugs will block the flow of groundwater along the utility pipe/trench and maintain the natural ground water flow. Maintaining natural groundwater movement in these areas is important for sustaining baseflow in the stream and preserving wetland and riparian vegetation. The spacing and plug material are dependent upon the trench slope and are listed in Appendix A. ***See Appendix A and the E&S Manual page 291.***

The proposed Alternative Waste Management Practicesssss are not allowed by the regulations.
A site evaluation also determined that the site is unsuited for any Alternative Waste Managment Practice.

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a, will recommended spacing as described in Appendix A be used? ☐ Yes ☐ No

c. If yes to a, will recommended plug material as described in Appendix A be used? ☐ Yes ☐ No

d. If no to b or c, explain and provide supporting data that demonstrates that the proposed alternative is equivalent or superior to standards in Appendix A.

7. Utility Line Stream and Wetland Crossings – Horizontal Directional Drilling (HDD)

Horizontal directional drilling (HDD) may be considered an ABACT BMP in special protection watersheds when implemented properly. However, HDD has its risks and there are certain E&S issues that need to be properly addressed. The two major E&S issues with HDD are associated with the drilling mud and the exposure of the workspace that is often in close proximity to sensitive areas such as streams and wetlands.

- Drilling mud must be properly managed through appropriate sediment removal BMPs such as a pumped water filter bag, as described in Standard Construction Detail #3-16, or Compost Sock Trap, as described in Standard Construction Detail #3-11 in the E&S Manual. If the volume of drilling mud is too great or the composition is such that it cannot be treated by either method, which may include HDD operations utilizing bentonite, it must be captured and removed from site or otherwise directed to a suitable treatment facility. If substances other than water are added to the drilling mud, all fluids must be captured and removed from site to a suitable treatment facility.
- Dry material removed from the drill hole must be placed out of the floodway of the stream or set back at least 10 ft. from a wetland. A sediment barrier BMP must be placed between the stockpile and the receiving water body.
- Workspace for an HDD may require clearing and grading, depending on the entry and exit sites selected for the drill. Since the drill entry location has to accommodate the drill rig and supporting equipment, the entry side location requires satisfactory access as well as stable ground conditions to support heavy equipment. The drill exit site is usually the location for the fabrication of the pipe string as well as the location where the pipe string is inserted into the borehole. The workspace required is typically longer to accommodate the pipe string and may require extra temporary workspace. Proper E&S BMPs must be incorporated into both disturbed areas. Depending upon the need for temporary staging, these areas can be larger than the permanent pipeline/utility line right-of-way.
- Appropriate erosion control BMPs (e.g. sediment barriers) must be installed between the entry and exits sites and the water body being crossed.
- Staging areas must be set back at least 50 ft. from the edge of any wetlands. Movement of equipment across wetlands must be minimized.
- Additives used in HDD may not be used in a manner that causes pollution or a threat of pollution to the waters of the Commonwealth. HDD additives which are certified for conformance with American National Standards Institute/National Science Foundation (ANSI/NSF) Standard 60 (Drinking Water Treatment Chemicals - Health Effects) are deemed acceptable to DEP, when used in the manner indicated in the certification of the additive. All conditions included as part of the additive's certification should be followed. Additives that are not certified for conformance with ANSI/NSF Standard 60 must be approved by DEP prior to use.

Due diligence shall be performed prior to initiating the drilling to determine whether geologic or hydro-geologic conditions at the proposed crossing could result in an inadvertent return (discharge) of drilling mud to the water body being crossed during drilling operations. Where such conditions exist, proper precautions must be taken to prevent such discharges. HDD operations shall include an inadvertent return response plan. The site must also have the necessary materials and equipment readily available to quickly respond in the event of an inadvertent return that may include isolating the area and pump bypassing the stream. The methods used to accomplish this are beyond the scope of this manual but are recognized in the HDD industry.

a. Will this BMP be used? ☐ Yes ☒ No

b. If yes to a, will additives other than bentonite and water be used? ☐ Yes ☐ No

c. If yes to b, are all additives are certified for conformance with ANSI/NSF Standard 60? ☐ Yes ☐ No

If yes to b or c, list the additives that will be used. NOTE: Additives that are not certified for conformance with ANSI/NSF Standard 60 must be approved by DEP prior to use.

See Appendix A and the E&S Manual pages 284-286 and 290.

BMPs Not Included In This Form

A description of any BMPs that are not included in this form, but are included in the ***E&S Manual*** should be provided below. Details and drawings should also be attached.

Alternative BMPs

Alternative BMPs not included in **Appendix A and the E&S Manual page 282** or using different design methods or standards that maintain existing water quality and existing designated uses may be approved. However, the burden of proof that the proposed BMPs are appropriate for the intended use lies with the plan designer. Sufficient documentation calculations and manufacturer's specifications should be included with the application to allow the reviewer to make an informed decision.

1. Will alternative BMPs be used?

   ☐ Yes ☒ No

   If yes, attach drawings showing the details, specifications, and spacing. Provide supporting calculations as necessary.

   Identify any BMPs or alternative BMPs not identified in this plan to be used:

F. BMP Installation Sequence Narrative

The BMPs listed in this plan will be installed and maintained in accordance with the E&S Manual, as amended and updated and DEPs "Oil and Gas Operators Manual," (Technical Guidance No. 550-0300-001) as amended and updated. The BMPs contained in this plan will be installed as shown (or indicated) prior to earth disturbance (including clearing and grubbing) within the drainage area of the BMP in question. Appropriate BMPs will be provided before, during, and after each stage of activity (including, but not necessarily limited to, access road construction and maintenance, drilling pad, pits, impoundments, and pipelines). Each BMP will be kept functional until all earth disturbances within the BMPs drainage area is completed and all disturbed areas tributary to the BMP have been stabilized (minimum uniform 70 percent perennial vegetative cover, with density of resisting accelerated erosion and sedimentation) or other suitable permanent erosion protection has been installed.

Appropriate BMPs for sediment pollution control will be in place and functional before earth disturbance occurs in all areas contributing runoff to the BMP. This will ensure that earth disturbance will occur that is not tributary to an appropriate BMP.

The sequence of operation provided below is typical for a project and is intended to be used as a guide. Each project BMP sequencing may differ in content and sequence of activities.

1. **Pre-Construction Activities** – prior to commencement of any earth disturbance activity, including clearing and grubbing, the applicant shall clearly delineate sensitive areas, riparian forest buffer boundaries, areas proposed for infiltration practices, the limits of clearing, and trees that are to be conserved within the project site, and shall install appropriate barriers where equipment may not be parked, staged, operated, or located for any purpose. (**NOTE:** For projects which require authorization under Erosion and Sediment Control General Permit-2 (ESCGP-2), the permittee must hold a preconstruction meeting, unless otherwise notified by DEP or conservation district and provide all attendees, including DEP or conservation district, at least a 7-day notice prior to the preconstruction meeting. Additionally, the permittee must notify DEP at least 7 days prior to commencing earth disturbance). Describe pre-construction activities below.

2. **Site Access** – this is the first land-disturbance activity to take place at the site and should provide BMPs to minimize accelerated erosion and sedimentation from the following areas: entrance to the site, construction routes, and areas designated for equipment or other use at the site including parking and stockpiles areas.

3. **Sediment Barriers** – install perimeter BMPs after the construction site is accessed, keeping associated clearing and grubbing limited to only that amount required for installing perimeter BMPs. (NOTE: For projects which require authorization under ESGP-2, the permittee must provide notice to DEP when perimeter controls have been installed).

4. **Upslope Diversion Channels** – install upslope diversion channels, including outlet protection, to direct clean, undisturbed runoff from the upslope side of the project site around areas of earth disturbance, are constructed to divert upslope clean water runoff around the disturbed area (when necessary).

5. **Sediment Traps and Basins and Traps** – construct Sediment Traps and Basins, outlet protection, prior to the commencement of remaining clearing/grubbing and other earth disturbance activities tributary to the BMP(s).

6. **Sediment Laden Water Channels or Other Conveyance** – all channels and other water conveyances required to direct sediment laden runoff to BMPs such as Sediment Traps and Basins must be installed prior to the commencement of the remaining clearing/grubbing and other earth disturbance activities.

7. **Land Clearing and Grading** – implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.

8. **Surface Stabilization** – apply temporary or permanent stabilization measures immediately to any disturbed areas where work has reached final grade, has been delayed or otherwise temporarily suspended.

9. **Construction of Buildings, Utilities, and Paving** – during construction, install and maintain any additional erosion and sediment control BMPs and implement any structural post construction stormwater BMPs that may be required.

10. **Final Stabilization** – after construction is completed; install stabilization BMPs including permanent seeding, mulching and riprap, and complete implementation of stormwater BMPs in this last construction phase. Stabilize all open areas, including borrow and spoil areas.

11. **Notice of Termination and Temporary BMP Removal** – after removal of all temporary BMPs and achieving permanent stabilization in accordance with §102.22, file a notice of termination in accordance with §102.7.

Provide the BMP installation sequence below.

G. Supporting Calculations and Measurements
Supporting calculations and measurements are presented below or are attached.

H. Maintenance Program
The maintenance program and schedule is outlined below.

I. Material Recycling and Disposal

All trash and garbage will be collected and disposed properly.

Oils, fuels, lubricants, and coolants will be placed in suitable containers and disposed properly.

Garbage, fuels, or any substance harmful to human, aquatic, or fish life, will be prevented from entering springs, streams, ponds, lakes, wetlands, or any watercourse or water body.

I.1. The plan to identify and manage construction waste is described below.

I.2. The procedures to ensure proper handling of other wastes that will be generated by the project are presented below.

J. Thermal Impacts

The following thermal impacts have been identified for the project.

Thermal impacts will be addressed utilizing BMPs as described below. For each checked box, describe how the BMP will be implemented. Check all that apply. **See E&S Manual page 6 and the "Pennsylvania Stormwater Best Management Practices Manual" (No.363-0300-002), December 30, 2006, Chapter 7.**

☐ Preserve canopy cover

☐ Minimize impervious cover

☐ Maximize vegetative stabilization

☐ Promote infiltration of runoff

☐ Allow for sheet flow over vegetated surfaces (i.e. vegetative filter strips, etc.)

☐ Avoid shallow traps/basins

☐ Allow for shading around traps/basins

☐ Draw water from the bottom of traps/basins

☐ Other (describe all others)

K. E&S Plan and PCSM or SR Plan Consistency

The project and how the E&S Plan will accommodate Post-Construction Stormwater Management (PCSM) or Site Restoration (SR) is discussed below including but not limited to (check all that apply).

- ☐ Entire site will be returned to approximate original contour & stabilized with minimum uniform 70 percent vegetative cover.
- ☐ Construction equipment will be restricted from entering areas proposed for infiltration.
- ☐ PCSM BMPs will be protected from sediment pollution.
- ☐ Temporary and permanent basins will utilize same location when possible.
- ☐ Size E&S and PCSM/SR basins in order minimize work to convert upon permanent stabilization.
- ☐ Other (describe all others)

L. Riparian Buffers

The following practices and activities are prohibited within the mandatory riparian buffer:

1. Soil disturbance by grading or stripping of topsoil.
2. Draining by ditching, underdrains, or other drainage systems.
3. Storing or stockpiling materials.
4. Off-road vehicular travel.

The following practices and activities are allowable in the mandatory riparian buffer when authorized by DEP:

1. Construction or placement of roads, bridges, trails, storm drainage, utilities, or other structures.
2. Water obstructions or encroachments.
3. Restoration projects.

The following practices and activities are allowed within the mandatory riparian buffer:

1. Buffer maintenance activities within the riparian buffer, including disturbance of existing vegetation and tree and shrub removal as needed to allow for natural succession of native vegetation and protection of public health and safety.
2. Emergency response and other similar activities.

For additional information regarding the implementation and maintenance of mandatory and voluntary riparian forest buffers, see PADEP "Riparian Forest Buffer Guidance," November 2010, Technical Guidance No. 394-5600-001.

L.1. Does this project require a permit under Title 25 Chapter 102 of the Pa. Code? ☐ Yes ☒ No

If no, a riparian buffer is not required, proceed to L.6.

L.2. Is any portion of the project site located in an EV or HQ watershed? ☐ Yes ☒ No

If no, a riparian buffer is not required, proceed to L.6.

L.3. Does this project qualify for an exception (see § 102.14(d)(1))? ☒ Yes ☐ No

If yes, indicate below the type of project for which the exception applies by marking the appropriate box.

☒ Oil and gas activities for which site reclamation or restoration is part of the permit authorization in Chapter 78.

☐ Road maintenance activities.

☐ The repair or maintenance of existing pipelines and utilities.

☐ Other (see §102.14(d)(1)):

If exceptions are checked, explain how existing riparian buffer will be undisturbed to the extent practicable.

L.4. Are you requesting a riparian buffer waiver for this project? ☐ Yes ☒ No

If yes, indicate below the type of project for which you are requesting a waiver by marking the appropriate box.

☐ Linear project that may include pipelines, public roadways, rail lines, or utility lines.

☐ Project is of a temporary nature where the site will be fully restored to its preexisting conditions during the ESCGP-2 permit term.

☐ Project where compliance with mandatory riparian buffers is not appropriate or feasible due to site characteristics or existing structures at the project site.

☐ Other(see §102.14(d)(2)):

If waivers are checked, explain how existing riparian buffers will be undisturbed to the extent practicable.

L.5 If 'Yes' to L.1 and L.2, **AND** 'No' to L.3 and L.4; check and describe as appropriate below;

When receiving waters are not classified impaired and there is no Total Maximum Daily Loads (TMDL) ☐

- A riparian buffer management plan is not required.
- A 150 ft. setback is required.
- Describe how the150 ft. setback will be established and maintained on the project.

or

When receiving waters are classified impaired or there is a TMDL ☐

- Riparian forest buffer must be established, or if one exists, it must be modified to meet standards and be protected.
- Describe how a riparian forest buffer will be established or modified and maintained on the project.

L.6. A description of proposed voluntary riparian forest buffers, if proposed, is provided below.

M. Antidegradation Requirements

Projects located in Special Protection watersheds (HQ and/or EV), must consider nondischarge alternatives. An evaluation of nondischarge alternatives that identifies viable alternatives for the proposed project is provided below. A description of how each alternative was evaluated and why the proposed design was selected must be provided. ***See E&S Manual pages 4, 7, 344.***

Alternative location

Alternative configuration

Alternative location of discharge

Limited Disturbed Area

Limiting Extent & Duration of Disturbance (Phasing, Sequencing)

Riparian Buffers (150 ft. min.)

Riparian Forest Buffer (150 ft. min.)

Drainage to HQ or EV watershed diverted to another (non HQ or EV) watershed.

Other (describe all others)

M.1 Antidegradation Best Available Combination of Technologies (ABACT)

☐ Nondischarge alternatives are not practicable, ABACT BMPs for the proposed project are provided below and include (Check all that apply):

☐ Treatment BMPs:
- ☐ Sediment basin with skimmer
- ☐ Sediment basin ratio of 4:1 or greater (flow length to basin width)
- ☐ Sediment basin with 4-7 day detention
- ☐ Flocculants

☐ Land disposal:
- ☐ Vegetated filters
- ☐ Riparian buffers <150 ft.
- ☐ Riparian forest buffer <150 ft.

☐ Pollution prevention:
- ☐ PPC Plans

- ☐ Immediate stabilization
- ☐ Street sweeping
- ☐ Channels, collectors, and diversions lined with permanent vegetation, rock, geotextile, or other non-erosive materials

☐ Stormwater reuse technologies:

- ☐ Sediment basin water for dust control
- ☐ Sediment basin water for irrigation

☐ Other

N. Additional Explanations and Clarifications

Additional explanations and clarifications are provided below, if needed.

III. MAPS AND PLAN DRAWINGS

A. Location Map

Indicate page or sheet number that includes the project location map:

B. Plan Drawings

Plan drawings must include the following items. Indicate page or sheet number(s) where they are located in the plans. If this plan is submitted as part of an ESCGP-2 NOI, the NOI Checklist may be used to satisfy this portion of the form.

1. **Existing Topographic Features**

   Page(s) or sheet number(s) that include existing topographic features;

   _____

2. **Soils Information**

   Page(s) or sheet number(s) that include the soils Information;

   _____

3. **Earth Disturbance Activity**

   Page(s) or sheet number(s) that include the proposed earth disturbance activity, included proposed contours;

   _____

4. **Project Site Runoff**

   Page(s) or sheet number(s) that include the Project Site Runoff, including maximum drainage areas to all proposed BMPs;

   _____

5. **Surface Water Classification**

   Page(s) or sheet number(s) that include the receiving waters as identified in Section II.D of this Application;

   _____

6. **BMPs and Maintenance Program**

   Page(s) or sheet number(s) that show the location of proposed BMPs as well as the maintenance program for each BMP;

   _____

7. **Material Recycling and Disposal**

   Page or sheet number that includes the project material recycling and disposal information;

   _____

8. **Soil Conditions and Geologic Formations**

   Page(s) or sheet number(s) that include the soil conditions and geologic formations;

   _____

9. **Thermal Impacts**

   Page(s) or sheet number(s) that include the thermal impacts;

   _____

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

Page(s) or sheet number(s) that indicate and/or describe where consistency between the E&S Plan and PCSM/SR plan have been identified;

11. Riparian Forest Buffers

Page(s) or sheet number(s) that indicate locations of required or voluntary riparian forest buffers;

12. Antidegradation Requirements

Page(s) or sheet number(s) that indicate and/or describe locations and details of all non-discharge alternatives, if necessary on the project;

IV. CERTIFICATION BY PERSON PREPARING APPLICATION

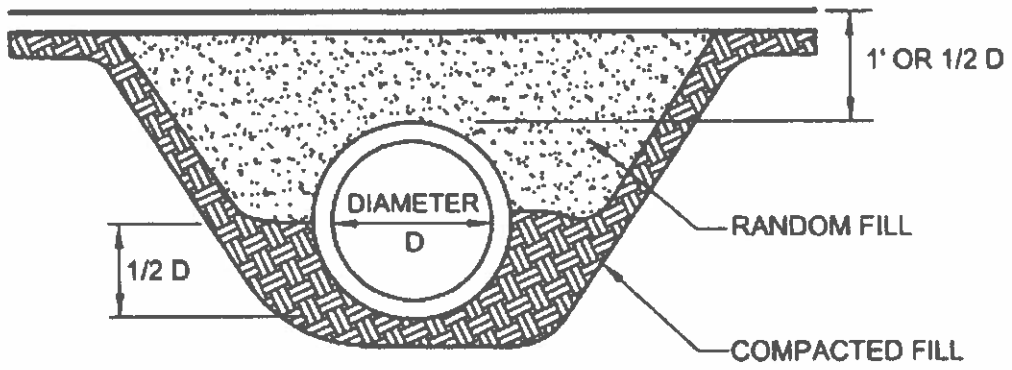
EXPEDITED REVIEW PROCESS

Plans submitted using the expedited permit review process under ESCGP-2 must attach an E&S and SR Plan developed and sealed by a licensed professional engineer, surveyor, landscape architect, or professional geologist. The plans shall both contain the following certification:

I do hereby certify to the best of my knowledge, information and belief, that the Erosion and Sediment Control and Site Restoration Plan are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print Name: John E. Cox	Signature:
Company: Cox Surveying	
Address: 1756 West Warren Road	
Phone: Lewis Run, PA 16738	

6. DITCH RELIEF CULVERTS (CROSS DRAIN)



Minimum diameter for any culvert is 12"; otherwise culvert shall be sized for anticipated peak flow. Place culvert so bottom is at same level as bottom of ditch or adjoining slope. Culverts shall be placed with a slope of 2 to 4%. Lower end shall be at least 2" below upper end.

Extend culvert 12" beyond base of road fill on both sides. Firmly pack fill around culvert, especially the bottom half.

Provide suitable outlet protection* and, where appropriate, inlet protection.

Inspect culvert weekly: remove any flow obstructions and make necessary repairs immediately.

NOTE: *This detail may be used for ditch relief culverts and for crossings of roadside ditches. It is not appropriate for stream crossings.*

*For steep slope (≥ 2H: 1V) outfalls, a minimum 20 foot long R-5 apron is recommended for temporary access roads where the recommended culvert spacing is used. For permanent access roads, a minimum R-6 rock size is recommended.

Sizing and Spacing* of Ditch Relief Culverts for Temporary Access Roads

Road Grade (%)	Culvert Spacing* (ft.)	Length of Upslope Drainage (ft.)				
		< 300	300 – 400	400 – 500	500 – 600	>600
		Minimum Culvert Size (in)				
2	300	12	15	15	15	18
3	235	12	15	15	15	18
4	200	12	15	15	15	18
5	180	12	12	15	15	15
6	165	12	12	12	15	15
7	155	12	12	12	12	15
8	150	12	12	12	12	15
9	145	12	12	12	12	15
10	140	12	12	12	12	15
12	135	12	12	12	12	15

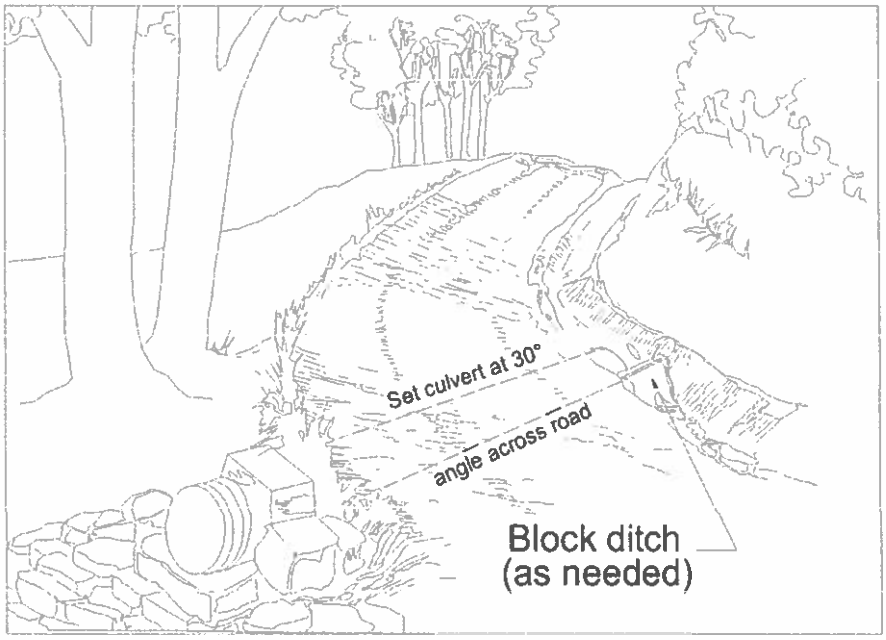
*Culvert spacing may be adjusted slightly to take advantage of natural drainage-ways.

Maximum Spacing* of Cross Drain Culverts (18" dia. CMP) For Permanent Access Roads

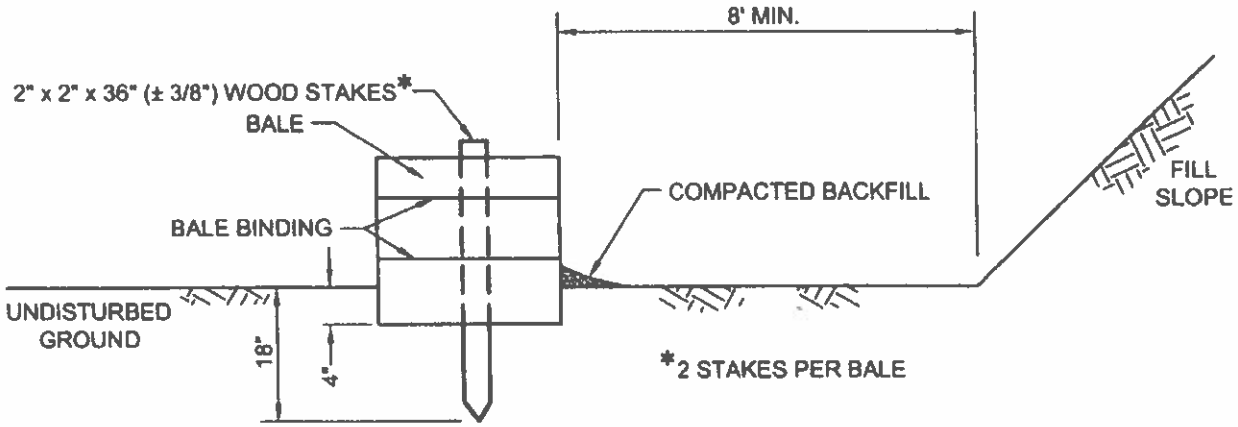
Road Grade	Soil Type in Ditch				
	Gravels, Sandy Gravels, Aggregate Surfacing	Silty Gravels, Clayey Gravels	Plastic and Non-plastic Inorganic Clays	Inorganic Silts, Silty or Clayey Sands	Sands, Silty Sands, and Gravelly Sands
Percent	Feet				
2	390	315	245	170	95
4	335	275	210	145	85
6	285	230	180	125	75
8	240	195	150	105	65
10	200	160	125	90	55
12	160	130	105	75	45
14	135	110	85	60	35
R-4 (Min.) Riprap protection will be provided at all outfalls.					
At all stream crossing locations, runoff must be directed to a sediment removal area, i.e., filter strip, straw bale, silt fence, sump, or trap for treatment. Waterbars and/or broad based dips should be installed and maintained as required on the approaches to the stream crossing.					

*Culvert spacing may be adjusted slightly to take advantage of natural drainage-ways.

Typical Ditch Relief Culvert Installation



4. STRAW BALE BARRIER



Straw bale barriers shall not be used for projects extending more than 3 months.

Straw bale barriers shall be placed at existing level grade with ends tightly abutting the adjacent bales. First stake of each bale shall be angled toward adjacent bale to draw bales together. Stakes shall be driven flush with the top of the bale. Both ends of the barrier shall be extended at least 8 feet up slope at 45 degrees to the main barrier alignment.

Compacted backfill shall extend approximately 4 inches above ground level.

Sediment shall be removed when accumulations reach 1/3 the aboveground height of the barrier. Damaged or deteriorated bales shall be replaced immediately upon inspection.

Any section of straw bale barrier which has been undermined or topped shall be immediately replaced with a rock filter outlet.

Bales shall be removed when the tributary area has been permanently stabilized.

Maximum Slope Length for Straw Bale Barriers and Wood Chip Filter Berms

Slope - Percent	Maximum Slope Length (ft.) Above Barrier
2 (or less)	150
5	100
10	50
15	35
20	25
25	20
30	15
35	15
40	15
45	10
50	10
> 50	Not Permitted

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE\ STEEL*	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/ SEASONAL HIGH WATER TABLE	HYDRIC/ HYDRIC INCLUSIONS	LOW STRENGTH / LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
Fountainville	X	C/S		X		X		X	X	X		X				
Fleetwood	X	C	X					X			X					X
Fluvents	X	C/S	X	X	X	X	X			X		X				
Fluvequents	X	C/S	X	X	X	X	X	X		X		X				
Fredon	X	C/S	X	X		X	X	X	X		X	X				X
Freetown	X	C/S				X	X	X				X			X	
Frenchtown	X	C/S		X		X	X	X	X	X	X	X			X	X
Freshwater Marsh	X	S				X	X	X	X		X	X			X	
Funkstown	X	S		X	X	X		X	X	X		X				X
Gageville	X	C/S		X		X		X	X	X	X	X	X			X
Gaila	X	C/S						X	X		X	X				
Gibralter	X	C/S		X	X	X	X	X	X	X		X				
Gilpin	X	C	X	X			X	X	X	X	X	X				
Ginat	X	C/S		X		X	X	X	X	X	X	X	X		X	X
Gladstone	X	C		X			X		X			X	X			
Glenelg	X	C		X			X	X	X	X	X	X				X
Gleneyre	X	C/S			X	X	X	X	X	X	X	X			X	X
Glenford	X	C/S				X	X	X	X	X		X	X			
Glenville	X	C/S				X	X	X	X	X	X	X				X
Gresham		X		X			X	X	X	X		X				X
Guernsey	X	C/S		X		X	X	X	X		X	X	X	X		X
Guthrie							X									
Hagerstown	X	S		X		X	X	X	X	X	X	X	X	X		
Halsey	X	C/S		X	X	X	X	X	X	X	X	X				X
Hanover	X	C/S				X	X	X	X	X		X	X			
Harbor	X	C/S				X		X	X			X	X			
Haplaquents							X									
Hartleton	X	C	X					X	X	X	X	X				
Hatboro	X	C/S			X	X	X	X	X	X	X	X				X
Haven	X	C	X					X	X			X				
Hazleton	X	C	X	X			X	X	X	X	X	X				
Henrietta	X					X		X	X		X	X			X	
Highfield	X	C	X				X		X		X	X				
Hollinger	X	C						X	X	X		X		X		
Holly	X	C/S			X	X	X	X	X	X	X	X			X	X
Hornell	X	C/S	X	X		X		X	X		X	X	X			X
Howard	X		X	X			X		X		X	X				
Howell	X	C/S		X		X		X		X		X	X			
Hublersburg	X	C/S						X	X	X	X	X	X			
Huntington	X	C			X	X	X	X				X		X		
Hustontown	X	C/S	X			X	X		X	X		X				
Itmann	X	C/S	X					X	X		X	X				
Ivory	X	C/S		X		X	X	X	X	X	X	X	X			
Jimtown	X	C/S				X	X	X			X	X				X

Special Conditions:

AWM1

The Operator shall comply with the following:

1. Notify their local Oil and Gas Inspector three days prior to dusting.
2. Drill cuttings shall remain on the well site they are generated and shall not be dispersed off-site via air, surface water, or groundwater.
3. All isolation distances identified in 25 Pa. Code § §78.60 – 78.63 are applicable.
4. Drill cuttings may be disposed of in a pit, without contact with season high ground water.
5. Upon well completion, the pit shall be backfilled and graded to promote runoff. The stability of the backfilled pit shall be compatible with surrounding area and the pit area shall be revegetated to stabilize surface soil.
6. Land application may only occur on the cleared well pad area and the drill cuttings shall be spread and incorporated to a depth of at least 6 inches and revegetated to stabilize surface soil.
7. No land application shall occur if the ground is frozen or saturated.