pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES EROSION AND SEDIMENT CONTROL (E&S) MODULE 1

Applicant: **M&G Realty, Inc.**

Project Site Name: **Rutters #82**

Surface Water Name(s): **Tribuatary 16017 To Sandy Run**

Surface Water Use(s): **HQ-CWF**

E&S PLAN INFORMATION

1. Describe the existing topographic features of the project site and the immediate surrounding area.

The project site is mostly overgrown meadow with sporadic trees and lightly vegetated areas. The site topography is consists of approximately 80' of fall across the limit of disturbance. The majority of the site discharges to the nearby PennDOT drainage system at the intersection of East Pleasant Valley Blvd (S.R. 220) and Sabbath Rest Road, while the remainder of the site is captured by a PennDOT inlet within the S.R. 220 shoulder. Both of the point of interests ultimately discharge to Tributary 16017 of Sandy Run (HQ-CWF).

2. Complete the following table for soils present at the project site.

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
CbB	**Clarksburg Silt Loam, 3-8% Slopes**	**2.11**	**C**	**13.3**	**-**	☐
EdC	**Edom Silty Clay Loam, 8-15% Slopes**	**10.71**	**B**	**67.5**	**-**	☐
EdB	**Edom Silty Clay Loam, 3-8% Slopes**	**3.05**	**B**	**19.2**	**-**	☐

Discuss any soil limitations and how the E&S Plan was designed to address those limitations.

Soil limitations generally include the following: Cutbanks Cave, Corrosive to Concrete/Steel, Easily Erodible, Hydric/Hydric Inclusions, Low Strength/ Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Potential Sinkhole, Wetness, and Depth to Bedrock

Resolutions for these limitations are as follows:

- **Use trench boxes to shore up utility trenches - OSHA standards & regulations must be implemented.**
- **Protect steel/concrete from corrosion.**
- **Embankments and foundation areas shall be properly compacted.**
- **Conduct soil infiltration testing to ensure adequate infiltration rate for proposed infiltration facilities.**
- **Pump water from work areas as necessary.**
- **Apply soil amendments.**
- **Ensure sub-base is well drained**
- **Conduct soil borings to determine bedrock depth, prior to construction.**
- **Perform study for karst geology. Remedy/fix as needed.**

If Hydric soils are present, is a wetland determination attached to this module? ☐ Yes ☐ No ☒ N/A

If soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards in the space provided below, 2) identify the extent of soil contamination on an E&S Plan Drawing that is attached to this module, and 3) describe the methods that will be used to avoid or minimize disturbance of the contaminated soils in the space provided below.

N/A

3. Describe the characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

   The earth disturbance associated with this project consists solely of the disturbance necessary to construct the proposed improvments. It is anticipated that approximately 19 acres will be disturved during construction.

   Based on historical aerial imagery, the project site appears to have been used for farming activity until approximately the 1970's or 1980's. However, the imagery suggests that farming operations ceased and new vegetation has been growing and establishing since that time.

   The proposed land use will be a convenience store with associated site improvements.

4. Describe the volume and rate of runoff from the project site and its upstream watershed area.

   The construction sequence has been staged such that a cutoff swale (Permanent Swale 1) will be installed very early in the construction timeline. This swale intercepts all upstream runoff and diverts the runoff around the proposed construction area, ultimately dischaging to the same location as pre-development. The upsteam runoff will be undisturbed ground, and as such, the rate and volume assocaited with this area will remain unchanged. The disturbed area will be captured and detained within the sediment basin during construction. Dynamic berms will be utilized to capture all runoff and detain/slowly release.

5. Check boxes to indicate all BMPs that will be installed or implemented, identify plan numbers for the BMPs, and describe any deviations from the E&S Manual.

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
☐ Rock Construction Entrance			
☒ Rock Construction Entrance with Wash Rack	**ES-05**	**ES-09**	**None**
☐ Rumble Pad			
☐ Wheel Wash			
☐ Temporary and Permanent Access Roads			
☐ Waterbar			
☐ Broad-based Dip			
☐ Open-top Culvert			
☐ Water Deflector			
☐ Roadside Ditch			
☐ Ditch Relief Culvert			
☐ Turnout			
☐ Compost Sock Sediment Trap			
☐ Temporary Stream Crossing			
☐ Temporary Wetland Crossing			
☐ Turbidity Barrier (Silt Curtain)			
☐ Dewatering Work Areas			
☒ Pumped Water Filter Bag	**N/A**	**ES-08**	**None**
☐ Sump Pit			
☐ Waste Management			
☒ Concrete Washout	**ES-06**	**ES-08**	**None**
☒ Compost Filter Sock	**ES-05,06**	**ES-08**	**None**
☐ Compost Filter Berm			
☐ Weighted Sediment Filter Tube			
☐ Rock Filter Outlet			
☐ Silt Fence (Filter Fabric Fence)			
☐ Reinforced Silt Fence			
☐ Super Silt Fence (Super Filter Fabric Fence)			

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
☐ Sediment Filter Log (Fiber Log)			
☐ Wood Chip Filter Berm			
☐ Straw Bale Barrier			
☒ Rock Filter	**ES-05,06**	**ES-09**	**None**
☐ Vegetative Filter Strip			
☒ Inlet Filter Bag	**ES-06**	**ES-08**	**None**
☐ Stone Inlet Protection			
☐ Runoff Conveyance (Channel)			
☐ Bench			
☐ Top-of-Slope Berm			
☐ Temporary Slope Pipe			
☒ Sediment Basin	**ES-05**	**ES-09**	**None**
☐ Sediment Trap			
☒ Riprap Apron	**ES-05,06**	**ES-08**	**None**
☐ Flow Transition Mat			
☐ Stilling Basin (Plunge Pool)			
☐ Stilling Well			
☐ Energy Dissipater			
☐ Drop Structure			
☐ Earthen Level Spreader			
☐ Structural Level Spreader			
☐ Surface Roughening			
☐ Vegetative Stabilization			
☒ Erosion Control Blanket	**ES-05,-06**	**ES-09**	**None**
☐ Soil Binders			
☐ Sodding			
☐ Cellular Confinement Systems			
☐ Alternative:			
☐ Alternative:			

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Site Access BMPs									
BMP Name	**No.**	**Length (ft)**	**Width (ft)**	**% Slope**	**Spacing (ft)**	**Length of Upslope Drainage (ft)**	**Culvert Diameter (in)**	**Soil Type in Ditch**	**E&S Manual Figure/Detail No.**
Rock Construction Entrance (RCE)									
RCE with Wash Rack									
Temporary and Permanent Access Roads – Crowned Roadway									
Temporary and Permanent Access Roads – Insloped Roadway									
Waterbar									
Broad-based Dip									
Open-top Culvert									
Water Deflector									
Roadside Ditch									
Ditch Relief Culvert									

Sediment Barriers / Filters								
BMP Name	**DA (ac)**	**Diameter (in)**	**Storage Capacity (cf)**	**Trap Height (in)**	**% Slope**	**Slope Length Above Barrier (ft)**	**Barrier Height (in)**	**E&S Manual Figure/Detail No.**
Compost Sock Sediment Trap								
Compost Filter Sock								
Compost Filter Berm								
Silt Fence (Filter Fabric Fence)								
Super Silt Fence								
Sediment Filter Log								
Weighted Sediment Filter Tube								
Straw Bale Barrier								
Wood Chip Filter Berm								
Toe-of-Slope Berm								

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Runoff Conveyance BMPs													
BMP Name	**Temporary**	**Design Storm**	**DA (ac)**	**Multiplier**	**Qr (cfs)**	**Q (cfs)**	**Manning's n**	**Va (fps)**	**V (fps)**	**D (ft)**	**d (ft)**	**Flow Depth Ratio**	**E&S Manual Figure/Detail No.**
Vegetated Channel	☐												
Sodded Channel	☐												
Riprap Channel	☐												

Energy Reduction BMPs								
BMP Name	**Downstream Distance to Drainage Course (ft)**	**Downstream % Slope**	**DA (ac)**	**Discharge (cfs)**	**Manhole Depth (ft)**	**Inflow Pipe Diameter (in)**	**Outlet Pipe Diameter (in)**	**E&S Manual Figure/Detail No.**
Level Spreader								
Drop Structure								

Stilling Basins / Wells								
BMP Name	**Pipe Diameter (in)**	**Discharge (cfs)**	**Well Diameter (in)**	**Depth of Well Below Invert (ft)**	**Basin Depth (ft)**	**Median Riprap Size (in)**	**Distance from Discharge Pipe to Basin Center (ft)**	**E&S Manual Figure/Detail No.**
Stilling Basin								
Stilling Well								

Other BMPs												
BMP Name	**DA (ac)**	**Pipe Diameter (in)**	**Berm Height (in)**	**Length (ft)**	**% Slope**	**Vertical Spacing (ft)**	**Channel Depth (ft)**	**Riprap Size**	**Riprap Thickness (in)**	**Initial Width (ft)**	**Terminal Width (ft)**	**E&S Manual Figure/Detail No.**
Temporary Slope Pipe												
Bench												
Rock Filter												
Riprap Apron												

For selected BMPs not identified in Table 1, report the name of the BMP and the Figure or Detail No. from the E&S Manual that will be used for design and implementation (PAG-01 only).

BMP Name	E&S Manual Figure/Detail No.	BMP Name	E&S Manual Figure/Detail No.

6. ☐ All applicable Standard E&S Worksheets from Appendix B of the E&S Manual have been completed and are attached.

7. ☒ Other worksheets or calculations equivalent to Appendix B of the E&S Manual have been completed and are attached.

8. Identify the E&S Plan Drawing number(s) that describes the sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.

   ES-07

9. ☐ Supporting E&S calculations have been completed and are available upon request (PAG-01 only).

10. ☒ Supporting E&S calculations are attached to the NOI/application.

11. ☐ Plan drawings consist of standard Figures/Construction Details in E&S Manual (PAG-01 only).

12. ☒ Plan drawings have been developed for the project and are attached to the NOI/application.

13. ☒ BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).

14. Identify the following information relating to temporary stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, and 8) liming rate.

    E&S Plan Drawing No(s).: **ES-07**

15. Identify the following information relating to permanent stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, 9) anchor material, 10) anchoring method, 11) rate of anchor material application, 12) topsoil placement depth, and 13) seeding season dates.

    E&S Plan Drawing No(s).: **ES-07**

16. Describe the procedures that will be taken to ensure that recycling or disposal of materials associated with or from the project site will be conducted properly.

    All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 PA. Code Chapter 260, §§260.1 et seq., 271.1, and 287.1 et. Seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

    All off-site waste and borrow areas must have an E&S plan approved by a County Conservation District or DEP fully implemented prior to being activated.

    The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.

17. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. If such formations or conditions exist, identify BMPs that will be implemented to avoid or minimize potential pollution.

    According to the Pennsylvania Geologic Survey Geologic Map of the State of Pennsylvania, the project site is underlain by the Devonian age Keyser and Tonoloway Formations, undivided (geologic symbol DSkt).

    According to the Pennsylvania Geologic Survey publication, The Engineering Characteristics of the Rocks of Pennsylvania, Second Edition, 1982, these formations are described as follows:

Keyser Formation: Comprised of dark-gray, highly fossiliferous and crystalline to nodular limestone with shaly limestone near the top. The formation is well-bedded, flaggy to thick, with some massive beds. Fracturing is along moderately to highly abundant platy or blocky patterned joints which are regularly spaced with a moderate to close distance between open and steeply dipping fractures. This formation is moderately resistant to weathering which occurs to a moderate or shallow depth, with a thin soil mantle which may be characterized by pinnacles.

Tonoloway Formation: Consists of medium-gray, laminated limestone; containing interbedded zones of medium-dark-gray to light-olive gray shale and siltstone. Bedding is well-developed, flaggy to thick. Fracturing is along moderately to highly abundant platy, and rarely, blocky patterned joints. Spacing

between fractures is moderate to close, open and steeply dipping. This formation is moderately resistant to weathering which occurs to a moderate or shallow depth, with a thin soil mantle which may be characterized by pinnacles.

Additionally, these formations are comprised of carbonate lithology which are subject to dissolution and the development of sinkholes and other karst-related features. The Sinkhole Map of Pennsylvania, prepared by William Kochonov of the Pennsylvania Geologic Survey, does not show any mapped karst features across the property or on adjacent lands. It should be noted, no karst features (i.e. bedrock outcrops, sinkholes and/or surface depressions) were observed at the time of the site reconnaissance.

18. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Potential thermal impacts from the impervious surfaces on this site are being reduced by retaining on-site stormwater in underground basins and slowly releasing the runoff. Additionally, some of the on-site runoff will flow into a proposed raingarden and will either be cooled down, infiltrated, evaporated or transpired by the vegetation in the rain garden.

During construction, the runoff from all areas will be conveyed through a storm sewer system/channels. This provides additional time for the runoff to cool down. Overall, ample time is provided for the stormwater to be significantly cooled down and diluted prior to reaching Tributary 16017 of Sandy Run

19. ☒ The E&S Plan has been planned, designed, and will be implemented to be consistent with the PCSM Plan.

20. If applicable, identify existing and proposed riparian forest buffers on E&S and PCSM Plan Drawings and identify the Drawing No(s) below (select N/A if not applicable).

E&S Plan Drawing No(s): **-** ☒ N/A

PCSM Plan Drawing No(s): **-**

E&S PLAN DEVELOPER

☒ I am trained and experienced in E&S control methods. ☒ I am a licensed professional.

Name:	**Tim Bieber**	Title:	**Site Development Project Manager**
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City, State, ZIP:	**York, PA 17404**	License No.:	**PE-0044196R**
License Type:	**Professional Engineer**	Exp. Date:	**09/30/2021**

E&S Plan Developer Signature **11/20/2020** **Date**

19. ☒ The E&S Plan has been planned, designed, and will be implemented to be consistent with the PCSM Plan.

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E&S Plan Drawing No(s): - ☒ N/A

PCSM Plan Drawing No(s): -

E&S PLAN DEVELOPER

☒ I am trained and experienced in E&S control methods. ☒ I am a licensed professional.

Name:	**Tim Bieber**	Title:	**Site Development Project Manager**
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License Type:	**Professional Engineer**	Exp. Date:	**09/30/2021**

E&S Plan Developer Signature

11/20/2020
Date