EROSION & SEDIMENT POLLUTION CONTROL PLAN NARRATIVE

RHEEMS CONCRETE PLANT

PIERSON RHEEMS LLC

West Donegal & Mt. Joy Township's
Lancaster County, PA

October 29, 2024

Prepared By:
Akens Engineering Associates, Inc.
219 East Main Street
Shiremanstown, PA 17011

TABLE OF CONTENTS

Table of Contents....1

Project Description....2
Existing Site Characteristics....2
Concrete Plant....2
Proposed Site Characteristics....3
Soils....3
Water Quality Measures....4
Permanent Best Management Practices (BMPs) Maintenance....4
Temporary BMPs....5
Staging of Earthmoving Activities....6
Pre-Development Drainage Areas....7
Post-Development Drainage Areas....8-9
Trap Calculations....9-10
Drainage Area Table....11

Attachments

Soils Report
Pond Certification
BMP Details

PROJECT DESCRIPTION

The purpose of this report is to revise the erosion and sedimentation pollution controls for Tract #2 at 483 Anchor Road. This parcel contains a leased concrete plant which is within the existing Large Noncoal Surface Mining Permit # 36080301. The concrete plant is in Mt. Joy Township, Lancaster County, Pennsylvania. The site is located by travelling on PA Route 283 South to Rheems Exit, Right on Cloverleaf Rd. to Right on East Harrisburg Ave. through to West Harrisburg Ave. to intersection with Heisey Quarry Rd., turn right onto Anchor Road go under railroad underpass and the concrete plant entrance is on the right. The Elizabethtown and Columbia West, PA, U.S. Geological Survey 7.5-minute topographic maps contain the area described. The receiving stream is an unnamed tributary to Donegal Creek, which is classified as "TSF" (Trout Stocked Fisheries). The existing NPDES permit # is PA0224651.

EXISTING SITE CHARACTERISTICS

The project site discharge is to an unnamed tributary to Donegal Creek, which is classified as "TSF" (Trout Stocked Fisheries). No additional or conflicting existing uses are indicated by information currently available via the Pennsylvania Department of Environmental Protection (PADEP) website.

The parcel is a 13.06-acre parcel of land, owned by Pierson Rheems LLC, is located north of the Conrail Tracks and is separate from the land that is being quarried and the expansion but is within the Surface Mine Permit boundary. This is part of the upstream drainage area. The parcel lies on the north side of Amtrak railroad tracks within Mount Joy Township, south of PA Route 230, and west of the existing Carter lumberyard.

The parcel is the site of an existing and active concrete manufacturing plant. Accessory facilities on the site are a concrete wash water sump, piles of processed and unprocessed concrete, and large bins containing aggregate used to make concrete.

Runoff from the subject property flows overland northward, westward, and southwestward to an unnamed tributary to Donegal Creek. The unnamed tributary to Donegal Creek conveys runoff at the southwest corner of the property at the upstream end of an existing concrete culvert that runs southward under a railroad overpass.

The soils within the existing concrete plant area areas are mapped as mostly Quarry Pits, Open Water, and portions as Hagerstown silt loam and Lindside silt loam. The open water area has since been filled with overburden material. The Soils map is attached.

This application to mine concerns a 30-acre parcel of land located contiguous and southwest of the existing quarry. This should be considered as an addendum to that E & S Plan.

We have attached a drainage area map which identifies the specific drainage areas and points of interests within the

CONCRETE PLANT

The runoff from this area is collected, treated in the sediment trap near the entrance which has a volume 5325 CF. The pond is manually discharged using pumps to a 4" flexible discharge line to an infiltration bed shown on the plans. The area is generally a no discharge area due to the infiltration bed. This parcel is occupied by Delaware Valley Concrete.

PROPOSED SITE CHARACTERISTICS

This application proposes continuing the existing operation with the following additional BMP's proposed four Rock Filter Berms, and two sediment traps.

SOILS DESCRIPTIONS

The project site soils are comprised of:

HaB - Hagerstown silt loam, 3 to 8 percent slopes

Hagerstown: 90 percent

The Hagerstown component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on low hills on limestone valleys. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F148XY026PA Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Ln - Lindside silt loam

Lindside: 85 percent

The Lindside component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on drainageways, nearly level flood plains, valleys, uplands. The parent material consists of alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. This component is in the F148XY029PA Moist, High Base-Saturation, Riparian Zone, Ecotonal Meadow-Shrub-Forest ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Qu – Pits, Quarry

Pits, quarries: 90 percent

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

W – Water *(No longer at this site- filled in with overburden material)*

Water: 100 percent

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

WATER QUALITY MEASURES

The project includes the following water quality measures:
A combination of infiltration bed, silt barrier, sediment traps, sediment basin, and stabilized swales.

PERMANENT BMP MAINTENANCE

General Erosion and Sedimentation Pollution Control Notes:

Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.

All pumping of sediment laden water shall be through a sediment control BMP, such as a sump or trap.

All channels must be kept free of obstructions such as fill ground, fallen leaves & woody debris, accumulated sediment, and construction materials/wastes. Channels should be kept mowed and/or free of all weedy, brushy or woody growth.

Vegetated channels shall be constructed free of rocks, tree roots, stumps or other projections that will impede normal channel flow and/or prevent good lining to soil contact. The channel shall be initially over-excavated to allow for the placement of topsoil. Sediment basins/traps shall be kept free of all trash, concrete wash water and other debris that pose the potential for clogging the basin/trap outlet structures and/or pose the potential for pollution to waters of the Commonwealth.

Sediment basins/traps must be protected from unauthorized acts of third parties.

Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials.

Permanent stabilization is defined as a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

All disturbed areas will be stabilized, using permanent or temporary techniques depending on work remaining, within 20 days of the most recent earthmoving activity in that area, weather permitting.

PERMANENT VEGETATIVE SURFACE STABILIZATION

For all areas that are to be brought to final grade in less than 20 days, vegetate with permanent ground cover as follows:

Ernst Conservation Seed ERNMX-181 Native Steep Slope Mix w/ Annual Ryegrass or equivalent. The mix should be applied at 60 lbs per acre. The seeding schedule has been attached to this report. Hydroseeding planting recommendations have been attached.

The permanent control measures and maintenance used in the erosion and sedimentation pollution control plan are silt fence barrier, swales, diversion ditches, sedimentation basins, and sediment traps.

TEMPORARY BEST MANAGEMENT PRACTICES (BMPs)

TEMPORARY SEDIMENT POLLUTION CONTROL MEASURES

TEMPORARY VEGETATIVE SURFACE STABILIZATION

For all areas that are not to be brought to final grade within 20 days, or in the event of a construction delay of 20 or more days, revegetate with an interim groundcover as follows:

1. Prior to seeding, apply agricultural grade limestone at a rate of 3 tons per acre.
2. Fertilize with N at a rate of 100 pounds per acre and P_2O_5 and K_2O, both at a rate of 200 pounds per acre.
3. Seed with annual ryegrass at a rate of 40 pounds per acre.
4. Mulch with hay or straw at a rate of 3 tons per acre.

*Note*s:

Until the site is 70% stabilized, all erosion and sedimentation control measures must be maintained properly. Maintenance must include inspections of all erosion and sedimentation control measures after each storm event, and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, re-seeding, re-mulching, and re-netting must be performed immediately.

STAGING OF EARTHMOVING ACTIVITIES AND
EROSION AND SEDIMENTATION CONTROL MEASURES

STAGE 1: Install erosion and sedimentation pollution control facilities as shown on the plans, reports, and detail sheets. Install silt barrier/stone berm where shown.

STAGE 2: Begin clearing and grubbing the area of sediment trap G and L. The top two feet should be removed and stockpiled adjacent to the traps to be used as topsoil once excavation to final grade has been completed. Once the traps have been excavated to final depth and topsoil has been placed seed with a permanent seed mixture.

PERMANENT BEST MANAGEMENT PRACTICES (BMPs)

The SWM/Sediment Basin and Trap proposed for the site are designed to perform the following:
1. Provide long-term collection of runoff from various construction, manufacturing, and stockpiling activities.
2. Provide long-term management of runoff flows generated during rainfall events.
3. Provide long-term settlement of sediment and prevention of sediment pollution.

Other permanent BMPs include a permanent diversion berm near the UNT along Anchor Road, a concrete truck washout/recycling facility, and permanent concrete slab walls at key locations to direct runoff.

The primary Point of Study (the P.O.S.) of the storm water management analysis performed is a point in the UNT, located at the Amtrak right of way property line near Anchor Road, just before the UNT is conveyed southward through a box culvert under the Amtrak tunnel.

PERMANENT BMP MAINTENANCE

Stone Filter Berm

Visually inspect the stone filter wall each week or after each rainfall event, whichever time interval is shorter.

Remove sediment when it has accumulated to 1/3 of the height of the filter stone.

Permanent Stormwater Management / Sediment Basin or Trap

Visually inspect the basin each week or after each rainfall event, whichever time interval is shorter.

Areas of the berm or spillway that have been damaged, undermined, or overtopped should be repaired immediately. Remove garbage and other refuse; inspect the orifices and clean unclog if necessary.

Vegetation on the berm should be maintained in vigorous growing condition. Areas with dead vegetation should be replanted with the specified seed mixture followed by installation of R.E.C.P., if necessary.

When accumulated sediment reaches the mark on the cleanout stake, the sediment should be removed from the basin and the basin restored to its original design condition.

DRAINAGE AREAS

Pre Development

Drainage Area A
0.20 Acres – 0.13 acres is forested, or grass 0.07 acres is paved or gravel.
This directly drains to the West Unnamed Tributary to the Donegal Creek.

Drainage Area B
3.91 Acres – 0.43 acres is forested, or grass and 3.48 acres is impervious coverage. Runoff to this point includes process water from washing out concrete trucks.
This directly drains to the sump located in the southwest corner of the operation. This area is then pumped to the infiltration area.

Drainage Area C
0.72 Acres – entire area is impervious coverage
This directly drains to the Northwest Unnamed Tributary to the Donegal Creek.

Drainage Area D
1.84 Acres – entire area is gravel surface
This area infiltrates and does not runoff.

Drainage Area E
0.49 Acres – entire area is impervious coverage
This directly drains north to the Unnamed Tributary to the Donegal Creek.

Drainage Area F
0.11 Acres – the entire area is impervious coverage.
This directly drains to the North Unnamed Tributary to the Donegal Creek.

Drainage Area G
3.17 Acres – 1.43 acres is scrub brush, and the remaining 1.74 acres is impervious coverage.
This directly drains to the East Unnamed Tributary to the Donegal Creek.

Drainage Area H
1.54 Acres – 1.28 acres is scrub brush and forest, and the remaining 0.26 acres is impervious coverage.
This directly drains east offsite.

Drainage Area I
0.62 Acres – the entire area is scrub brush and forest.
This directly drains east offsite.

Drainage Area J
0.20 Acres – the entire area is impervious coverage.
This directly drains to the North Unnamed Tributary to the Donegal Creek.

Drainage Area K
0.20 Acres – the entire area is impervious coverage.
This directly drains to the North Unnamed Tributary to the Donegal Creek.

Post Development

Drainage Area A
0.20 Acres – 0.13 acres is forested, or grass 0.07 acres is paved or gravel.
This directly drains to the West Unnamed Tributary to the Donegal Creek.
No proposed changes.

Drainage Area B

2.03 Acres reduced from 3.91 Acres – the total area is impervious coverage. Runoff to this point includes process water from washing out concrete trucks.
This directly drains to the sump located in the southwest corner of the operation. This area is then pumped to the infiltration area.
No proposed treatment changes. **Reduced the predevelopment runoff area by 2.00 acres by adding sediment trap for Post development drainage area L.**

Drainage Area C
0.72 Acres – entire area is impervious coverage
This directly drains to the Northwest Unnamed Tributary to the Donegal Creek.
Added a filter berm along the wall.

Drainage Area D
1.84 Acres – entire area is impervious coverage
This area infiltrates and does not runoff.
No proposed changes.

Drainage Area E
0.49 Acres – entire area is impervious coverage
This directly drains to the North to the Unnamed Tributary to the Donegal Creek.
Proposed stone berm along edge of haul road.

Drainage Area F
0.11 Acres – the entire area is impervious coverage.
This directly drains to the North to the Unnamed Tributary to the Donegal Creek.
Proposed stone berm along edge of haul road.

Drainage Area G
3.17 Acres – 1.43 acres is scrub brush, and the remaining 1.74 acres is impervious coverage.
This will infiltrate up to a 10-year storm. The emergency spillway flows North to the Unnamed Tributary to the Donegal Creek.
Proposed oversized sediment trap with infiltration

Drainage Area H
1.54 Acres – 1.28 acres is scrub brush and forest, and the remaining 0.26 acres is impervious coverage.
This directly drains east offsite.
No proposed changes.

Drainage Area I
0.62 Acres – the entire area is scrub brush and forest.
This directly drains east offsite.
No proposed changes.

Drainage Area J
0.20 Acres – the entire area is impervious coverage.
This directly drains to the North to the Unnamed Tributary to the Donegal Creek.
No proposed changes.

Drainage Area K
0.20 Acres – the entire area is impervious coverage.
This directly drains to the East Unnamed Tributary to the Donegal Creek.
No proposed changes.

Drainage Area L
1.88 Acres – the entire area is impervious coverage.
This directly drains to the East Unnamed Tributary to the Donegal Creek.
Proposed oversized sediment trap with infiltration. This will infiltrate up to a 10-year storm. Emergency spillway will flow West to the Unnamed Tributary to the Donegal Creek.

EMBANKMENT TRAP DESIGN CALCULATIONS

SEDIMENT TRAP AREA B

Pre Dev total contributing drainage area = 3.91 acres
Post Dev total contributing drainage area = 1.91 acres
Disturbed area = 1.91 acres

1.91 acres x 2,000 cf/acre = 3,820 cf

Storage at elevation 387 = **8,496 cf provided**

2 cfs/acre x 1.91 acres = 3.82 cfs is required to pass through the trap.

There is also a component of process water to this trap from washing out of concrete trucks. The discharge from this trap is by manually pumping the trap to an infiltration bed.

SEDIMENT TRAP AREA G

Total contributing drainage area = 3.17 acres
Disturbed area = 3.17 acres

3.17 acres x 4,000 cf/acre = 12,680 cf
17,036 cf of storage required @ 4.0' depth of pond

Typical trap design:

Maximum water surface elevation = Top of berm elevation 405.0 - 1.0' for freeboard = 404.00

Storage at elevation 404.0 = **17,036 cf provided**

Elevation 402.0 = sediment clean out level

2 cfs/acre x 3.17 acres = 6.34 cfs is required to pass through the basin.

It is determined that the sediment trap will have a bottom elevation at 400.00' and the top of berm elevation at 405.0. The outlet crest elevation is 403.0. Outlet width is 10'.

Pond size at a ratio of 4.2:1 ≈ 113' x 27' = 3,051 sq.ft.

SEDIMENT TRAP AREA L

Total contributing drainage area = 1.88 acres
Disturbed area = 1.88 acres

1.88 acres x 4,000 cf/acre = 7,520 cf
7,712 cf of storage required @ 4.0' depth of pond

Typical trap design:

Maximum water surface elevation = Top of berm elevation 418.0 - 1.0' for freeboard = 417.00

Storage at elevation 417.0 = **7,712 cf provided**

Elevation 415.0 = sediment clean out level

1.88 cfs/acre x 2.00 acres = 3.76 cfs is required to pass through the basin.

It is determined that the sediment trap will have a bottom elevation at 413.00' and the top of berm elevation at 418.0. The outlet crest elevation is 416.0. Outlet width is 10'.

Pond size at a ratio of 4.3:1 ≈ 124' x 29' = 3,596 sq.ft.

Drainage Area Summary

Drainage Area	PRE - DEV	Post DEV
A	0.20	0.20
B	3.91	2.03
C	0.72	0.72
D	1.84	1.84
E	0.49	0.49
F	0.11	0.11
G	3.17	3.17
H	1.54	1.54
I	0.62	0.62
J	0.20	0.20
K	0.20	0.20
L	0	1.88
Total	13.00	13.00

Soil Map—Lancaster County, Pennsylvania
(Rheems Concrete Plant)

Map Scale: 1:2,270 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lancaster County, Pennsylvania
Survey Area Data: Version 22, Sep 4, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 6, 2020—Nov 7, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HaB	Hagerstown silt loam, 3 to 8 percent slopes	2.6	18.9%
Ln	Lindside silt loam	0.5	3.5%
Qu	Pits, quarry	8.5	62.1%
W	Water	2.1	15.4%
Totals for Area of Interest		**13.7**	**100.0%**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING PROGRAMS

SEDIMENT POND CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Trap DA B NPDES Outfall ID #: N/A

Location (point of discharge): Latitude (DMS): 40° 07' 54.13" Longitude (DMS): -76°34' 33.63"

Drainage Area: 10.10 acres Design Storm: 10 year / 24 hour Rainfall Amount: 4.48 inches

Average Watershed Slope: 2.73 Land Use: Quarry Soil Type: Quarry Pits Curve Number: 98

Peak Discharge: N/A cubic feet/second NPDES Average Flow: No Dis. mgd NPDES Design Flow: N/A mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)		3'
	Outside Slope (Maximum) (H:V)		3.5:1
	Inside Slope (Maximum) (H:V)		3.5:1
	Top Elevation		379.33
	Bottom Elevation		370.11
	Upstream Toe Elevation		390.00
	Downstream Toe Elevation		383.00
	Type of Cover		Soil/Rip Rap
	Incised Slope (if any)		
	Inside Slope (Maximum) (H:V)		1:1
	Top Elevation		381.11
	Bottom Elevation		368.11
Principal Spillway	Type		N/A
	Conduit Diameter (if barrel/riser give both)		
	Inlet Elevation		
	Outlet Protection		
	Spillway Capacity (cubic feet/second)		
Dewatering Device	Type/Size		4" Flex
	Inlet Elevation		422.88
	Discharge Regulation (self-draining or valved)		Manual Pump to infilt.
	Discharge Capacity (cubic feet/second)		0.579 CFS
	Time to Dewater Full Pond		8 hours
Emergency Spillway	Type		N/A
	Width		
	Depth (with 2 feet of freeboard)		
	Length		
	Sideslopes (H:V)		
	Crest Elevation		
	Slope		
	Type of Lining/Protection		
	Spillway Capacity (provide design calculations)		
Storage Capacity	Length @ Bottom		12.0'
	Width @ Bottom		25
	Length @ Dewatering Device		45'
	Width @ Dewatering Device		116'
	Volume @ Dewatering Device		8,496 CF
	Length @ Principal Spillway		N/A
	Width @ Principal Spillway		N/A
	Volume @ Principal Spillway		N/A
	Length @ Crest of Emergency Spillway		N/A
	Width @ Crest of Emergency Spillway		N/A
	Volume @ Crest of Emergency Spillway		N/A

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☐ Yes ☒ No

If yes, specify the type of liner that will be used: _____

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Concrete Pond 1 NPDES Outfall ID #: P. 003

1.	Has the facility been constructed at the location shown in the approved permit?	☒ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☒ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☒ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☒ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☒ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☒ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☒ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☒ Yes	☐ No	☐ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☒ No	
10.	If yes, was a liner used?	☐ Yes	☒ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☒ NA

See Attached Report

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	Date of Inspection	Inspected By
Completion	09/04/2024	Rick Caranfa

Supervising Professional Engineer/Registered Professional Land Surveyor Scott W. Akens

Address and phone 219 East Main Street
Shiremanstown, PA 17011
717-975-9933

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

Scott W Akens 10/29/2024
Signature of Registered Professional Engineer/Registered Professional Land Surveyor Date

PE073141 09/30/2025
Registration Number and Expiration Date

Signature of Permittee or Responsible Official Date Title

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING PROGRAMS

SEDIMENT POND CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Trap DA G NPDES Outfall ID #: N/A

Location (point of discharge): Latitude (DMS): 40° 07' 58.34" Longitude (DMS): -76°34' 26.13"

Drainage Area: 3.17 acres Design Storm: 10 year / 24 hour Rainfall Amount: 4.48 inches

Average Watershed Slope: 3.11 Land Use: Quarry Soil Type: Quarry Pits Curve Number: 98

Peak Discharge: 6.34 cubic feet/second NPDES Average Flow: N/A mgd NPDES Design Flow: N/A mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)	3	
	Outside Slope (Maximum) (H:V)	2:1	
	Inside Slope (Maximum) (H:V)	2:1	
	Top Elevation	405.0	
	Bottom Elevation	400.0	
	Upstream Toe Elevation	409	
	Downstream Toe Elevation	405	
	Type of Cover	Soil/Rip Rap	
	Incised Slope (if any)		
	Inside Slope (Maximum) (H:V)		
	Top Elevation		
	Bottom Elevation		
Principal Spillway	Type	N/A	
	Conduit Diameter (if barrel/riser give both)		
	Inlet Elevation		
	Outlet Protection		
	Spillway Capacity (cubic feet/second)		
Dewatering Device	Type/Size		
	Inlet Elevation		
	Discharge Regulation (self-draining or valved)		
	Discharge Capacity (cubic feet/second)		
	Time to Dewater Full Pond		
Emergency Spillway	Type	Embankment	
	Width	10	
	Depth (with 2 feet of freeboard)	1	
	Length	3	
	Sideslopes (H:V)	2:1	
	Crest Elevation	404	
	Slope	3:1	
	Type of Lining/Protection	R-3 Rip Rap	
	Spillway Capacity (provide design calculations)	6.55 CFS	
Storage Capacity	Length @ Bottom	113	
	Width @ Bottom	27	
	Length @ Dewatering Device	129	
	Width @ Dewatering Device	40	
	Volume @ Dewatering Device	17,036	
	Length @ Principal Spillway	N/A	
	Width @ Principal Spillway	N/A	
	Volume @ Principal Spillway	N/A	
	Length @ Crest of Emergency Spillway	129	
	Width @ Crest of Emergency Spillway	40	
	Volume @ Crest of Emergency Spillway	17,036	

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☒ Yes ☐ No

If yes, specify the type of liner that will be used: N/A

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Trap DA G NPDES Outfall ID #: N/A

1.	Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☒ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☐ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☐ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☐ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☒ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☒ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☒ No	
10.	If yes, was a liner used?	☐ Yes	☒ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☒ NA

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	Date of Inspection	Inspected By

Supervising Professional Engineer/Registered Professional Land Surveyor Scott W. Akens

Address and phone 219 East Main Street
Shiremanstown, PA 17011
717-975-9933

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

Signature of Registered Professional Engineer/Registered Professional Land Surveyor — Date: 10/29/2024

PE073141 09/30/2025
Registration Number and Expiration Date

Signature of Permittee or Responsible Official — Date — Title

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING PROGRAMS

SEDIMENT POND CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Trap DA L NPDES Outfall ID #: N/A

Location (point of discharge): Latitude (DMS): 40° 07' 54.21" Longitude (DMS): -76°34' 26.21"

Drainage Area: 1.88 acres Design Storm: 10 year / 24 hour Rainfall Amount: 4.48 inches

Average Watershed Slope: 3.39 Land Use: Quarry Soil Type: Quarry Pits Curve Number: 98

Peak Discharge: N/A cubic feet/second NPDES Average Flow: No Dis. mgd NPDES Design Flow: N/A mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)	3'	
	Outside Slope (Maximum) (H:V)	3:1	
	Inside Slope (Maximum) (H:V)	2:1	
	Top Elevation	418.00	
	Bottom Elevation	413.00	
	Upstream Toe Elevation	427.00	
	Downstream Toe Elevation	417.00	
	Type of Cover	Soil/Rip Rap	
	Incised Slope (if any)		
	Inside Slope (Maximum) (H:V)		
	Top Elevation		
	Bottom Elevation		
Principal Spillway	Type	Embankment	
	Conduit Diameter (if barrel/riser give both)	10'	
	Inlet Elevation	417.00	
	Outlet Protection	Rip-Rap	
	Spillway Capacity (cubic feet/second)	3.76 @ 0.26'deep	
Dewatering Device	Type/Size		
	Inlet Elevation		
	Discharge Regulation (self-draining or valved)		
	Discharge Capacity (cubic feet/second)		
	Time to Dewater Full Pond		
Emergency Spillway	Type	N/A	
	Width		
	Depth (with 2 feet of freeboard)		
	Length		
	Sideslopes (H:V)		
	Crest Elevation		
	Slope		
	Type of Lining/Protection		
	Spillway Capacity (provide design calculations)		
Storage Capacity	Length @ Bottom	104	
	Width @ Bottom	9	
	Length @ Dewatering Device	124.0	
	Width @ Dewatering Device	29.0	
	Volume @ Dewatering Device	N/A	
	Length @ Principal Spillway	124	
	Width @ Principal Spillway	29	
	Volume @ Principal Spillway	7,712	
	Length @ Crest of Emergency Spillway	124.0	
	Width @ Crest of Emergency Spillway	29.0	
	Volume @ Crest of Emergency Spillway	7,712	

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☐ Yes ☒ No

If yes, specify the type of liner that will be used: _____

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Pierson Rheems, LLC Site Name: Rheems Quarry SMP No.: 36080301

Engineer/Land Surveyor: Akens Engineering, Inc. Structure ID #: Trap DA L NPDES Outfall ID #: N/A

1.	Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☐ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☐ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☐ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☐ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☒ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☒ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☒ No	
10.	If yes, was a liner used?	☐ Yes	☒ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☒ NA

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	Date of Inspection	Inspected By

Supervising Professional Engineer/Registered Professional Land Surveyor Scott W. Akens

Address and phone 219 East Main Street
Shiremanstown, PA 17011
717-975-9933

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

Signature of Registered Professional Engineer/Registered Professional Land Surveyor — Date: 10/29/2024

PE073141 09/30/2025
Registration Number and Expiration Date

Signature of Permittee or Responsible Official — Date — Title

BROAD-BASED DIP - **Sediment Removal Efficiency: VERY LOW. This device by itself is not an ABACT for special protection watersheds, but like a waterbar can be used to make an ABACT BMP work more effectively.** Broad-based dips may be used to direct runoff from active access roads to well-vegetated 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. Due to the nature of broad-based dips, they should not be constructed on roads with grades exceeding 10%. Where access roads exceed 10% gradients, insloping or other deflection devices should be used to control runoff.

PA DEP

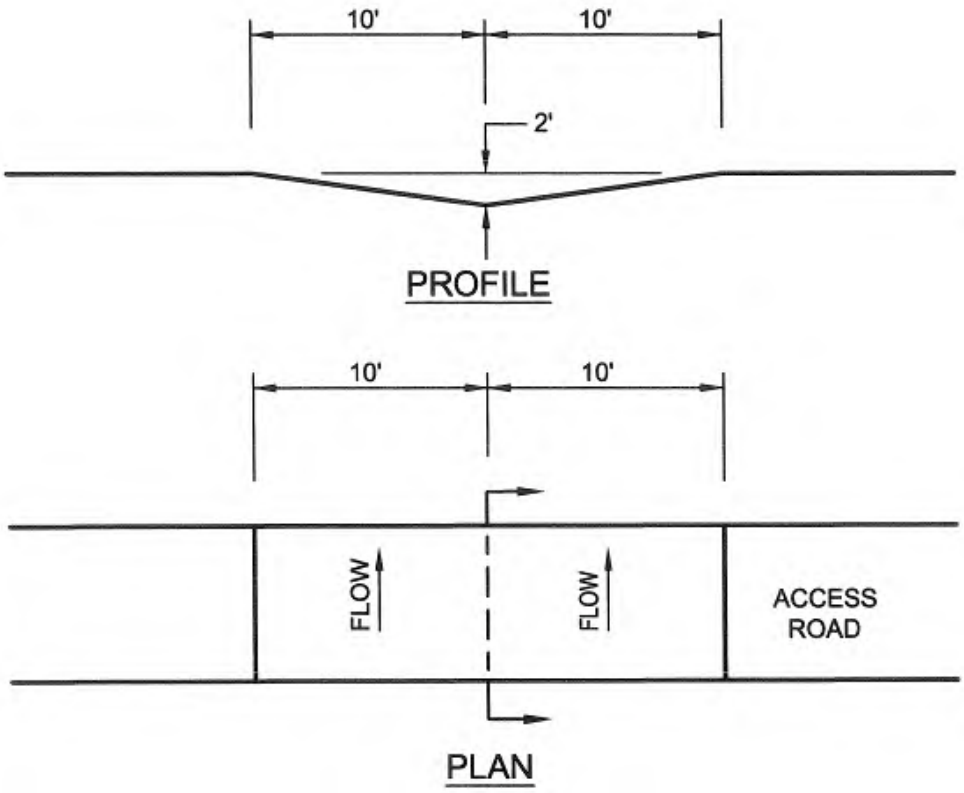
Discharges should be to the downslope side of access roads with a maximum gradient of 3% in the dip. For access roads with grades up to 5%, Standard Construction Detail # 3-6 should be used. Roadways with steeper grades should use Standard Construction Detail # 3-7.

TABLE 3.2 – Maximum Spacing of Broad-based Dips, Open-top Culverts and Deflectors

Road Grade (Percent)	Spacing Between Dips, Culverts, or Deflectors (feet)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140

USDA Forest Service

STANDARD CONSTRUCTION DETAIL # 3-6
Broad-based Dip for Low Gradient (≤5%) Roadways



Maine DEP

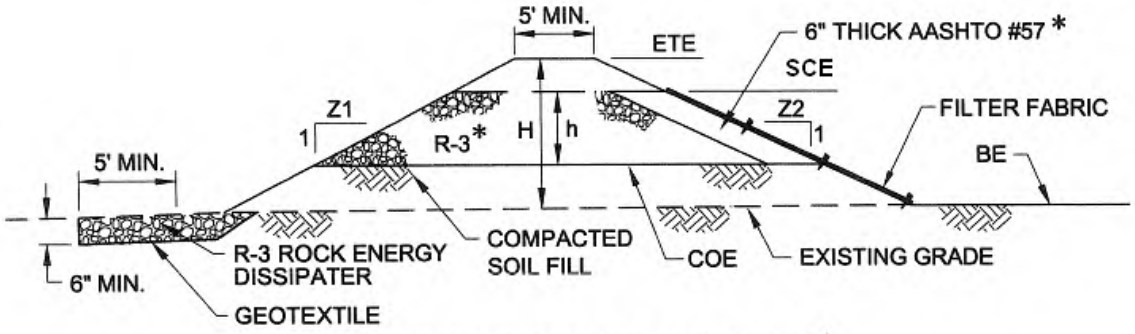
Broad-based dips shall be constructed to the dimensions shown and at the locations shown on the plan drawings.

Dips shall be oriented so as to discharge to the low side of the roadway.

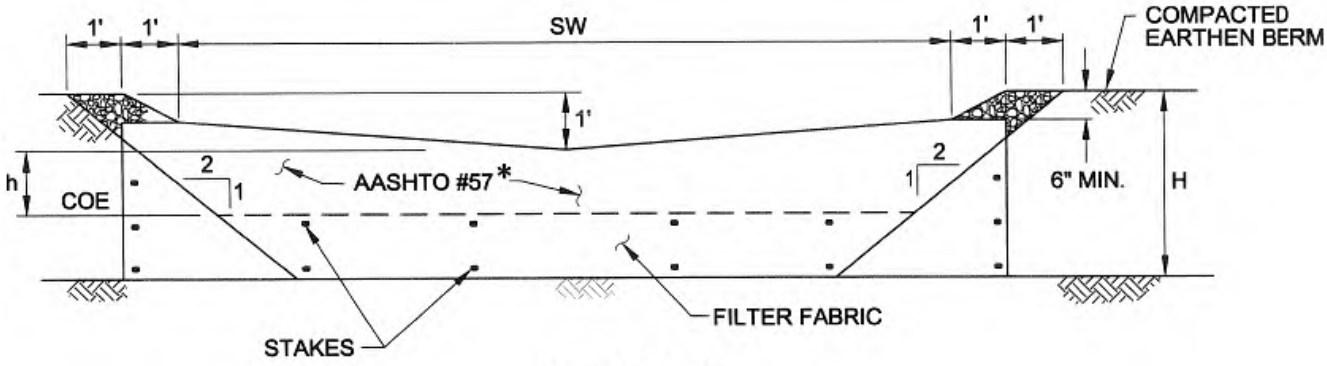
Dips shall be inspected daily. Damaged or non-functioning dips shall be repaired by the end of the workday.

Maximum spacing of broad-based dips shall be as shown in Table 3.2

STANDARD CONSTRUCTION DETAIL # 8-1
Embankment Sediment Trap



SECTION THROUGH SPILLWAY *



INSIDE FACE

PA DEP

Embankment outlet shall be composed entirely of rock above clean out elevation (COE); main body R-3 or larger — R-4 to be used for drainage areas greater than 3.0 acres, inside face AASHTO # 57 stone or smaller. A 6" thick layer of compost, compost sock, or clean sand shall be installed on top of the AASHTO #57 stone and securely anchored in HQ watersheds. 24" diameter compost sock(s) shall be used in place of filter fabric and AASHTO #57 stone in EV watersheds.

Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in layered lifts of not more than 9". The maximum rock size shall be no greater than 6".

Upon completion, the embankment shall be seeded and mulched or otherwise stabilized according to the specifications of the E&S plan drawings.

All sediment traps shall be inspected at least weekly and after each runoff event.

Access for sediment removal and other required maintenance activities shall be provided.

A clean out stake shall be placed near the center of each trap. Accumulated sediment shall be removed when it has reached the clean out elevation on the stake and the trap restored to its original dimensions. Dispose of materials removed from the trap in the manner described in the E&S Plan.

Check embankments, spillways, and outlets for erosion, piping and settlement. Clogged or damaged spillways and/or embankments shall be immediately restored to the design specifications.

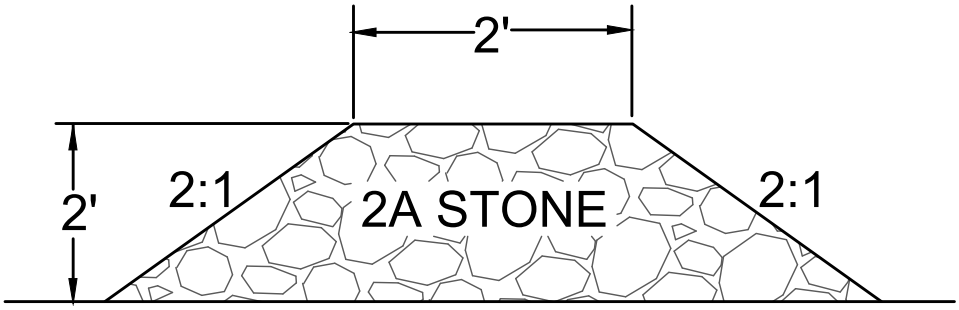
Displaced riprap within the spillway or outlet protection shall be replaced immediately.

Accumulated sediment shall be removed and disturbed areas inside the trap shall be stabilized before conversion to a stormwater management facility. To assist in removing sediment, which may be saturated, a device such as is shown in Standard Construction Detail #7-18 may be used to dewater the sediment prior to its removal.

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

TRAP NO.	Z1 (FT)	Z2 (FT)	H (FT)	h (FT)	EMBANK. TOP ELEV. ETE (FT)	SPILLWAY CREST ELEV. SCE (FT)	CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)	SPILLWAY WIDTH SW (FT)
DA-G	2	3	5	3	405	404	402	400	10
DA-L	2	3	5	3	418	417	415	413	10

N



STONE FILTER BERM DETAIL

NO SCALE

NOTE: STONE FILTER BERM should be inspected after each rain event.

STONE FILTER BERM DETAIL	DATE: Oct 29, 2024
	DRAWN BY: RWC
PIERSON RHEEMS LLC QUARRY OPERATION LANCASTER COUNTY, WEST DONEGAL & MT JOY TOWNSHIPS	SCALE: None
	SHEET: 1 OF 1

Akens Engineering Associates, Inc.
219 EAST MAIN STREET
SHIREMANSTOWN, PA 17011

X:\240-1-51 Expansion\Drawing\240-1-51 Base.dwg