SITE RESTORATION GENERAL NOTES

PIPELINE CONSTRUCTION:

UPLAND LOCATIONS:

1. GRADE AREAS AS CLOSELY AS POSSIBLE TO ORIGINAL CONTOURS. TEMPORARY WATERBARS WILL BE REMOVED AT THIS POINT.
2. REPLACE TOPSOIL.
3. PERFORM PERMANENT STABILIZATION, INCLUDING:
   A. APPLY PERMANENT SEEDING, SOIL AMENDMENTS AND MULCH OR EROSION CONTROL BLANKET.

STREAM CROSSINGS (LESS THAN 24 HOURS FOR STREAM LESS THAN 10 FEET WIDE. LESS THAN 48 HOURS FOR STREAMS BETWEEN 10 AND 100 FEET WIDE):

PERFORM PERMANENT STABILIZATION, INCLUDING:

A. REPLACE SUBSTRATE BACK IN STREAMBED AND GRADE AREAS AS CLOSELY AS POSSIBLE TO ORIGINAL CONTOURS.

B. REPLACE TOPSOIL.

C. APPLY PERMANENT NATIVE SEED MIX WITHIN 50 FEET OF STREAM BANKS.

D. APPLY LIME AT RATE AS RECOMMENDED BY SOIL TEST PRIOR TO SEEDING. DO NOT APPLY FERTILIZER.

E. INSTALL EROSION CONTROL BLANKETS AS SHOWN ON THE E&S PLANS, FROM TOP OF BANK OUTWARD 50 FEET (100 FEET IN HQ/EV).

F. STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW. REFER TO E&S TYPICAL DETAILS FOR STREAMBED AND BANK STABILIZATION WITH REINFORCEMENT BLANKET.

WETLAND CROSSINGS:

PERFORM PERMANENT STABILIZATION, INCLUDING:

A. BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES. ELEVATIONS OF WETLAND WILL BE SURVEYED. AFTER POST CONSTRUCTION SURVEY ELEVATION HAS BEEN CONFIRMED TO MATCH PRE-CONSTRUCTION CONDITIONS, THE WETLAND WILL BE SEEDED USING THE WETLAND SEED MIX.

B. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME, FERTILIZER ETC. WILL BE USED WITHIN WETLAND AREAS.

C. MAINTAIN ALL EROSION SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL AND SEDIMENT CONTROLS.

POST-CONSTRUCTION:

1. CONTINUE TO CONDUCT INSPECTIONS UNTIL THE SITE HAS REACHED PERMANENT STABILIZATION.
2. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
3. TEMPORARY WATERBARS WILL BE REMOVED AS PART OF THE REGRADING BACK TO ORIGINAL CONTOURS STAGE. ALL OTHER TEMPORARY E&S BMPS MAY BE REMOVED AFTER THE ENTIRE CONTRIBUTORY AREA TO EACH BMP REACHES PERMANENT STABILIZATION.
4. REMOVE ANY REMAINING TEMPORARY WATERBODY AND WETLAND EQUIPMENT CROSSINGS.
5. REMOVE ANY REMAINING STABILIZED CONSTRUCTION ENTRANCES.
6. PRIOR TO APPLICATION OF THE SEED IN ALL SUPPORT & STAGING AREAS, THE SEEDBED WILL BE PREPARED TO A DEPTH OF 3 TO 4 INCHES USING APPROPRIATE EQUIPMENT TO PROVIDE A FIRM, SMOOTH SEEDBED THAT IS FREE OF DEBRIS AND SCARIFIED TO ENSURE SEEDS LODGE AND GERMINATE. THE SEED MIXTURE WILL BE APPLIED UNIFORMLY PER PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MARCH 2012, CHAPTER 11 STABILIZATION FOR SEEDING RECOMMENDATIONS.
7. IN ACCORDANCE WITH 25 PA CODE 102.7, UPON COMPLETION OF ALL CONSTRUCTION ACTIVITIES, A NOTICE OF TERMINATION FORM WILL BE SUBMITTED TO TERMINATE THE AUTHORIZATION OF COVERAGE INDICATING ALL ACTIVITIES UNDER THIS PERMIT HAVE BEEN COMPLETED.

SITE RESTORATION AND POST CONSTRUCTION NOTES:

FOR POST CONSTRUCTION STORMWATER MANAGEMENT OF PERMANENT FACILITY SITES REFER TO EACH POST CONSTRUCTION STORMWATER MANAGEMENT PLAN PACKAGE.

AGRICULTURAL / RESIDENTIAL RESTORATION NOTES:

1. GRAZING DEFERMENT PLANS WILL BE COORDINATED WITH LANDOWNERS TO MINIMIZE GRAZING DISTURBANCE OF REVEGETATED AREAS TO THE EXTENT PRACTICABLE.
2. THE MIXING OF TOPSOIL WITH SUBSOIL SHALL BE PREVENTED BY STRIPPING TOPSOIL FROM THE WORK AREA WITHIN DESIGNATED AREAS AND IN COORDINATION WITH THE APPLICABLE ACCESS AGREEMENTS.
3. SPECIAL RESTORATION CONDITIONS MAY BE COORDINATED WITH THE LANDOWNERS FOR AGRICULTURAL FIELDS, WHICH SHALL TAKE PRECEDENCE TO THE PROPOSED STABILIZATION PROCEDURES, ONLY IF THE SPECIAL CONDITIONS MEET THE MINIMUM REQUIREMENTS OF PADEP AND FERC.
4. PER PA CHAPTER 102 REGULATIONS, ALL FARMS ARE REQUIRED TO DEVELOP AND IMPLEMENT A WRITTEN PLAN TO REDUCE EROSION WHEN PLOWING AND TILLING (INCLUDES NO-TILL CROPPING).
5. AGRICULTURAL AREAS WITHIN 100-FT OF A STREAM MUST MAINTAIN A MINIMUM OF 25% PLANT RESIDUE.
6. ADDITIONAL BMPS MAY BE NEEDED TO MINIMIZE ACCELERATED EROSION AND SEDIMENTATION FOR AGRICULTURAL FIELDS WITH LESS THAN 25% PLANT COVER OR CROP RESIDUE COVER AND WITHIN 100-FT OF A RIVER OR PERENNIAL OR INTERMITTENT STREAM.

GENERAL NOTES (FROM PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL- MARCH 2012):

1. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4-INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2-INCHES OF TOPSOIL.
2. 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.
3. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.

PERMANENT STABILIZATION:

1. PERMANENT STABILIZATION
   A. UPON COMPLETION OF ANY EARTH DISTURBANCE ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.
   B. EROSION & SEDIMENTATION CONTROLS SHALL BE LEFT IN PLACE UNTIL SUCH TIME AS THE DISTURBED AREAS HAVE PERMANENT STABILIZATION. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS 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.
   C. WHEN EROSION & SEDIMENTATION CONTROLS ARE TO BE REMOVED IN AGRICULTURAL NON-SENSITIVE AREAS (STREAM / WETLANDS), AGRICULTURAL LANDOWNERS SHALL MAINTAIN AGRICULTURAL BMPS PER PADEP REGULATIONS.
2. STABILIZATION DURING NON-GROWING SEASONS
   A. WHEN UTILITY CONSTRUCTION MUST BE DONE AND IS COMPLETED DURING A NON-GROWING SEASON, INTERIM STABILIZATION BMPS MUST BE IMPLEMENTED AND ADEQUATELY MAINTAINED. THE APPLICATION OF STRAW MULCH AT THE RATE OF 3.0 TONS PER ACRE IS REQUIRED. THE BMPS SHOULD BE INSPECTED WEEKLY (UNLESS SNOW COVERED) AND AFTER EACH RUNOFF EVENT TO IDENTIFY AREAS THAT BECOME BARE.
   B. BARE AREAS SHALL BE COVERED WITH PROPERLY INSTALLED EROSION CONTROL BLANKET. ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROLS MUST BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
3. WHERE REQUIRED, STRAW MULCH MUST BE APPLIED AT A MINIMUM OF 3.0 TONS PER ACRE.
4. STRAIN MULCH SHALL BE APPLIED IN LONG STRANDS, NOT FINELY CHOPPED OR BROKEN.
5. LIME AND FERTILIZED MAY BE APPLIED WHERE APPROPRIATE IN RESIDENTIAL AND AGRICULTURAL AREAS. NO LIME OR FERTILIZERS SHALL BE USED IN WETLAND AREAS.
6. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AND EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS. NO LIME OR FERTILIZERS SHALL BE USED IN WETLAND OR STREAM AREAS.
7. WATERBARS WITHIN AGRICULTURAL OR RESIDENTIAL AREAS SHALL BE USED AS A TEMPORARY FEATURES. WATERBARS MAY BE REMOVED AS PART OF FINAL SITE GRADING. SEEDING IS NOT REQUIRED IN CULTIVATED CROPLANDS UNLESS REQUESTED BY THE LANDOWNER. TEMPORARY STABILIZATION MAY BE REQUIRED ON CULTIVATED CROPLANDS WITHIN THE RIGHT-OF-WAY SHOULD CONSTRUCTION CEASE FOR 4 CONSECUTIVE DAYS OR LONGER. IN SUCH INSTANCES, MULCH MAY BE USED AS AN ACCEPTABLE TEMPORARY STABILIZATION METHOD.

ADDITIONAL COUNTY CONSERVATION DISTRICT NOTES:

1. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

COMMONWEALTH OF REGISTERED PROFESSIONAL
MICHAEL DENICHILO
ENGINEER
PE068513
10/25/2019

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REVISIONS

	REVISIONS	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/2018	JL (MM)	AJD (MM)	MDN (MM)
B	REVISED FOR PADEP	10/2019	AJD (MM)	MWF (MM)	MJD (MM)

PREPARED FOR

PennEast PIPELINE

PENNEAST PIPELINE PROJECT

SITE RESTORATION PLAN

SITE RESTORATION GENERAL NOTES
PROPOSED 36" PENNEAST PIPELINE
PROPOSED 24" HELLERTOWN LATERAL
PROPOSED 4" BLUE MOUNTAIN LATERAL

SCALE	DRAWING NO.	REVISION
AS SHOWN	000-01-01-003A	B

SEEDING & VEGETATIVE TABLES

STANDARD UPLAND ROW MIX[1,2,3]

MIX COMPOSITION
20% ORCHARDGRASS
20% CLIMAX TIMOTHY
15% PERENNIAL RYEGRASS
10% ANNUAL RYEGRASS
10% RED FESCUE
10% MEDIUM RED CLOVER
10% LADINO CLOVER
5% BIRDSFOOT TREFOIL

SEEDING RATE: 40 LB PER ACRE OR AS RECOMMENDED BY SEED VENDOR

1. AN ALTERNATIVE SEED MIXTURE MAY BE REQUESTED BY THE LANDOWNER(S).
2. FESCUE MUST BE ENDOPHYTE-FREE.
3. LEGUMES SHOULD BE TREATED WITH A SPECIES SPECIFIC INOCULATE PRIOR TO SEEDING. LEGUME SEED AND SOIL SHOULD BE SCARIFIED.

RESIDENTIAL MIX[1,2]

MIX COMPOSITION
33% PENLAWN CREEPING RED FESCUE
25% 98/85 KENTUCKY BLUEGRASS
14% FIJI PERENNIAL RYEGRASS
14% ASP0112 PERENNIAL RYEGRASS
14% ASP6004 PERENNIAL RYEGRASS

SEEDING RATE: 40 LB PER ACRE OR AS RECOMMENDED BY SEED VENDOR

1. AN ALTERNATIVE SEED MIXTURE MAY BE REQUESTED BY THE LANDOWNER(S).
2. FESCUE MUST BE ENDOPHYTE-FREE.

CLOVER/FOOD PLOT WITH ROW MIX[1,2,3]

MIX COMPOSITION
10% STANDARD ROW MIX (FOR SOIL STABILIZATION)
30% MEDIUM RED CLOVER
33% LADINO CLOVER
20% PINNACLE (JUMBO) LADINO CLOVER
7% WHITE DUTCH CLOVER

SEEDING RATE: 40 LB PER ACRE OR AS RECOMMENDED BY SEED VENDOR

1. AN ALTERNATIVE SEED MIXTURE MAY BE REQUESTED BY THE LANDOWNER(S).
2. FESCUE MUST BE ENDOPHYTE-FREE.
3. LEGUMES SHOULD BE TREATED WITH A SPECIES SPECIFIC INOCULATE PRIOR TO SEEDING. LEGUME SEED AND SOIL SHOULD BE SCARIFIED.

WETLAND SEED MIX (ERNMX-122 FACW MEADOW MIX)1,2,3,4
AVAILABLE FROM ERNST SEEDS AT HTTP://WWW.ERNSTSEED.COM/CATALOG/

MIX COMPOSITION
32.7% *CAREX VULPINOIDEA, PA ECOTYPE* (FOX SEDGE, PA ECOTYPE)
20.0% *ELYMUS RIPARIUS, PA ECOTYPE* (RIVERBANK WILDRYE, PA ECOTYPE)
17.0% *CAREX LURIDA, PA ECOTYPE* (LURID (SHALLOW) SEDGE, PA ECOTYPE)
7.9% *CAREX LUPULINA, PA ECOTYPE* (HOP SEDGE, PA ECOTYPE)
4.0% *VERBENA HASTATA, PA ECOTYPE* (BLUE VERVAIN, PA ECOTYPE)
3.0% *CAREX SCOPARIA, PA ECOTYPE* (BLUNT BROOM SEDGE, PA ECOTYPE)
2.5% *JUNCUS EFFUSUS* (SOFT RUSH)
2.0% *CINNA ARUNDINACEA, PA ECOTYPE* (WOOD REEDGRASS, PA ECOTYPE)
1.0% *ASCLEPIAS INCARNATA, PA ECOTYPE* (SWAMP MILKWEED, PA ECOTYPE)
1.0% *ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE* (NEW ENGLAND ASTER, PA ECOTYPE)
1.0% *GLYCERIA CANADENSIS, PA ECOTYPE* (RATTLESNAKE GRASS, PA ECOTYPE)
1.0% *ONOCLEA SENSIBILIS* (SENSITIVE FERN)
1.0% *SCIRPUS CYPERINUS, PA ECOTYPE* (WOOLGRASS, PA ECOTYPE)
0.8% *HELENIUM AUTUMNALE, PA ECOTYPE* (COMMON SNEEZEWEED, PA ECOTYPE)
0.5% *ALISMA SUBCORDATUM (A. PLANTAGO-AQUATICA), PA ECOTYPE* (MUD PLANTAIN (WATER PLANTAIN), PA ECOTYPE)
0.5% *ASTER PUNICEUS (SYMPHYOTRICHUM PUNICEUM), PA ECOTYPE* (PURPLESTEM ASTER, PA ECOTYPE)
0.5% *ASTER UMBELLATUS (DOELLINGERIA UMBELLATA), PA ECOTYPE* (FLAT TOPPED WHITE ASTER, PA ECOTYPE)
0.5% *EUPATORIUM FISTULOSUM, PA ECOTYPE* (JOE PYE WEED, PA ECOTYPE)
0.5% *EUPATORIUM PERFOLIATUM, PA ECOTYPE* (BONESET, PA ECOTYPE)
0.5% *JUNCUS TENUIS, PA ECOTYPE* (PATH RUSH, PA ECOTYPE)
0.5% *LUDWIGIA ALTERNIFOLIA, PA ECOTYPE* (SEEDBOX, PA ECOTYPE)
0.5% *MIMULUS RINGENS, PA ECOTYPE* (SQUARE STEMMED MONKEYFLOWER, PA ECOTYPE)
0.5% *SISYRINCHIUM ANGUSTIFOLIUM* (NARROWLEAF BLUE EYED GRASS)
0.4% *CAREX INTUMESCENS, PA ECOTYPE* (BLADDER (STAR) SEDGE, PA ECOTYPE)
0.2% *CHELONE GLABRA, PA ECOTYPE* (TURTLEHEAD, PA ECOTYPE)

SEEDING RATE: 20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT

1. THIS WETLAND SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN WETLANDS, LIMITS OF WHICH ARE SHOWN ON THE E&SCP DRAWINGS
2. AN ALTERNATIVE SEED MIXTURE MAY BE REQUESTED BY THE LANDOWNER(S).
3. AN ALTERNATIVE CONSERVATION WETLAND SEED MIXTURE THAT CONTAINS SIMILAR SPECIES IS ACCEPTABLE. IF AN ALTERNATIVE SEED MIX IS USED, FOLLOW MANUFACTURER'S SEED RATE RECOMMENDATIONS.
4. CHANGES TO THE SPECIFIED SEED MIXES ARE SUBJECT TO APPROVAL BY PA DEP AND/OR THE LOCAL CONSERVATION DISTRICT.

RIPARIAN BUFFER MIX (ERNMX-178) 1,2,3,4
AVAILABLE FROM ERNST SEEDS AT HTTP://WWW.ERNSTSEED.COM/CATALOG/

MIX COMPOSITION
30.0% *PANICUM CLANDESTINUM (DICHANTHELIUM C.), 'TIOGA'* (DEERTONGUE, 'TIOGA')
16.0% *SORGHASTRUM NUTANS, PA ECOTYPE* (INDIANGRASS, PA ECOTYPE)
15.0% *ELYMUS RIPARIUS, PA ECOTYPE* (RIVERBANK WILDRYE, PA ECOTYPE)
11.0% *ANDROPOGON GERARDII, 'NIAGARA'* (BIG BLUESTEM, 'NIAGARA')
8.0% *PANICUM VIRGATUM, 'CARTHAGE', NC ECOTYPE* (SWITCHGRASS, 'CARTHAGE', NC ECOTYPE)
3.0% *CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE* (PARTRIDGE PEA, PA ECOTYPE)
3.0% *RUDBECKIA HIRTA, COASTAL PLAIN NC ECOTYPE* (BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE)
3.0% *VERBENA HASTATA, PA ECOTYPE* (BLUE VERVAIN, PA ECOTYPE)
2.0% *ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE* (NEW ENGLAND ASTER, PA ECOTYPE)
2.0% *JUNCUS EFFUSUS* (SOFT RUSH)
2.0% *JUNCUS TENUIS, PA ECOTYPE* (PATH RUSH, PA ECOTYPE)
1.2% *ASCLEPIAS INCARNATA, PA ECOTYPE* (SWAMP MILKWEED, PA ECOTYPE)
0.8% *EUPATORIUM FISTULOSUM, PA ECOTYPE* (JOE PYE WEED, PA ECOTYPE)
0.8% *EUPATORIUM PERFOLIATUM, PA ECOTYPE* (BONESET, PA ECOTYPE)
0.8% *VERNONIA NOVEBORACENSIS, PA ECOTYPE* (NEW YORK IRONWEED, PA ECOTYPE)
0.7% *HELENIUM AUTUMNALE, NORTHERN VA ECOTYPE* (COMMON SNEEZEWEED, NORTHERN VA ECOTYPE)
0.5% *MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE* (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE)
0.2% *SOLIDAGO PATULA, PA ECOTYPE* (ROUGHLEAF GOLDENROD, PA ECOTYPE)

SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP AT 30 LB PER ACRE (DRY SITES - GRAIN OATS, JAN 1-AUG 1; OR, GRAIN RYE, AUG 1-JAN 1; MOIST SITES - GRAIN RYE YEAR-ROUND)

1. THIS RIPARIAN BUFFER SEED MIX IS TO BE USED TO REVEGETATE WORKSPACE WITHIN 150-FEET OF PERENNIAL AND INTERMITTENT STREAMS, WHERE SLOPES ARE LESS THAN 10%. IF THE SLOPE EXCEEDS 10% IN A RIPARIAN BUFFER, THE STANDARD UPLAND ROW MIX SHOULD BE USED.
2. AN ALTERNATIVE SEED MIXTURE MAY BE REQUESTED BY THE LANDOWNER(S).
3. AN ALTERNATIVE CONSERVATION RIPARIAN SEED MIXTURE THAT CONTAINS SIMILAR SPECIES IS ACCEPTABLE. IF AN ALTERNATIVE SEED MIX IS USED, FOLLOW MANUFACTURER'S SEED RATE RECOMMENDATIONS.
4. CHANGES TO THE SPECIFIED SEED MIXES ARE SUBJECT TO APPROVAL BY PA DEP AND/OR THE LOCAL CONSERVATION DISTRICT.

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of Chapter 11 may be substituted for the soil amendments shown in Table 11.2.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.)			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

1. **STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.**
2. **POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45°F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIET AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND ON BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.**
3. **SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.**
4. **MULCH ON SLOPES 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.**
5. **SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5% WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.**
6. **HYDRAULICALLY APPLIED BLANKETS CAN BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. THEY MAKE USE OF A CROSS-LINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIVERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. IN ANY CASE, MANUFACTURER'S RECOMMENDATIONS SHOULD BE FOLLOWED. SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOW (E.G. SWALES).**
7. **NO MULCH MAY BE APPLIED IN WETLANDS.**

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL DENICHILO
ENGINEER
PE068513
10/25/2019

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REVISIONS

	REVISIONS	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/2018	JL (MM)	AJD (MM)	MDN (MM)
B	REVISED FOR PADEP	10/2019	AJD (MM)	MWF (MM)	MJD (MM)

PREPARED FOR
PennEast PIPELINE

PENNEAST PIPELINE PROJECT
SITE RESTORATION PLAN
RECOMMENDED SEEDING MIXTURE
PROPOSED 36" PENNEAST PIPELINE
PROPOSED 24" HELLERTOWN LATERAL
PROPOSED 4" BLUE MOUNTAIN LATERAL

SCALE	DRAWING NO.	REVISION
AS SHOWN	000-01-01-003B	B