Contains Critical Energy Infrastructure Information - Filed Separately

JB TONKIN COMPRESSOR STATION EROSION AND SEDIMENT CONTOL PLAN

DOMINION TRANSMISSION, INC CLARKSBURG, WEST VIRGINIA

MARCH 2017

PREPARED FOR DOMINION TRANSMISSION, INC

PREPARED BY



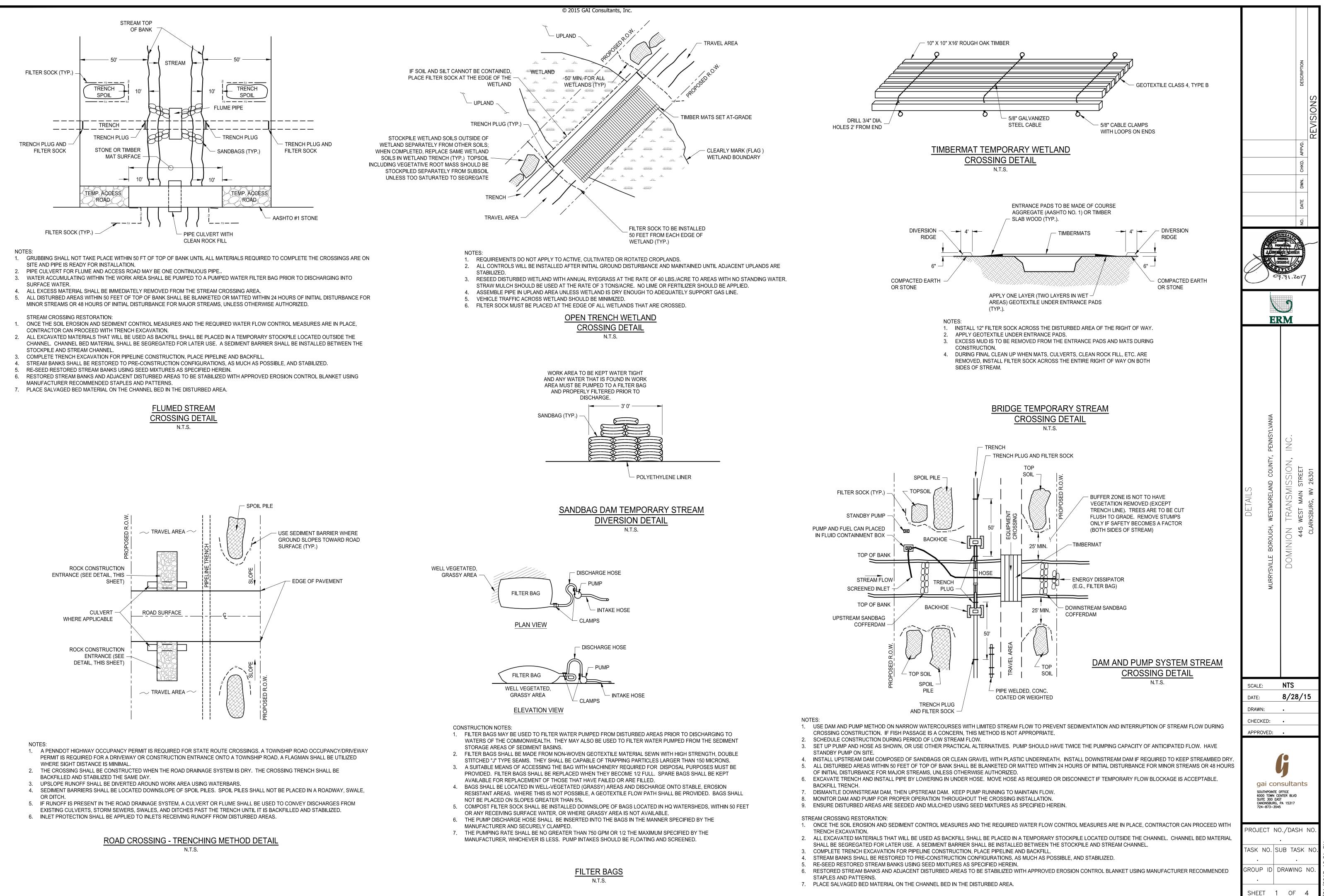
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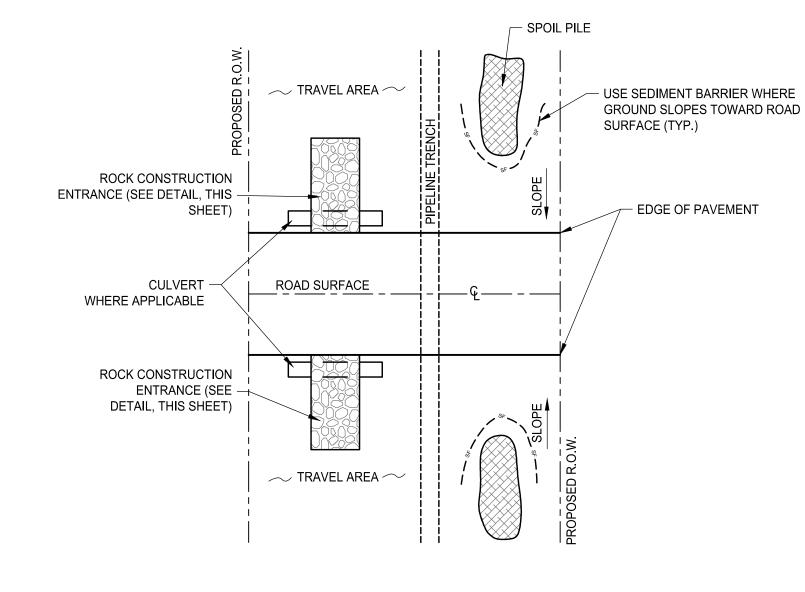
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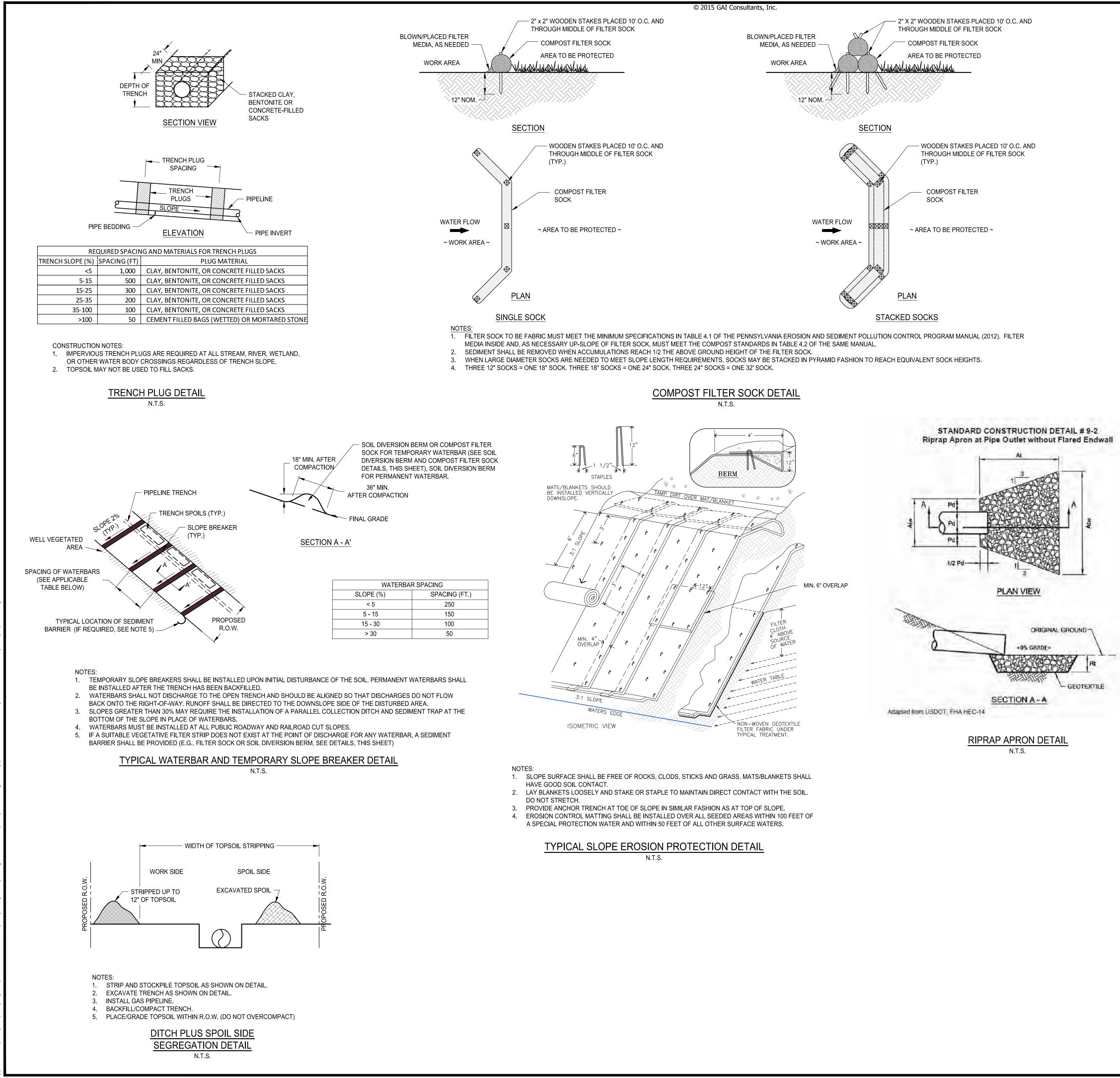


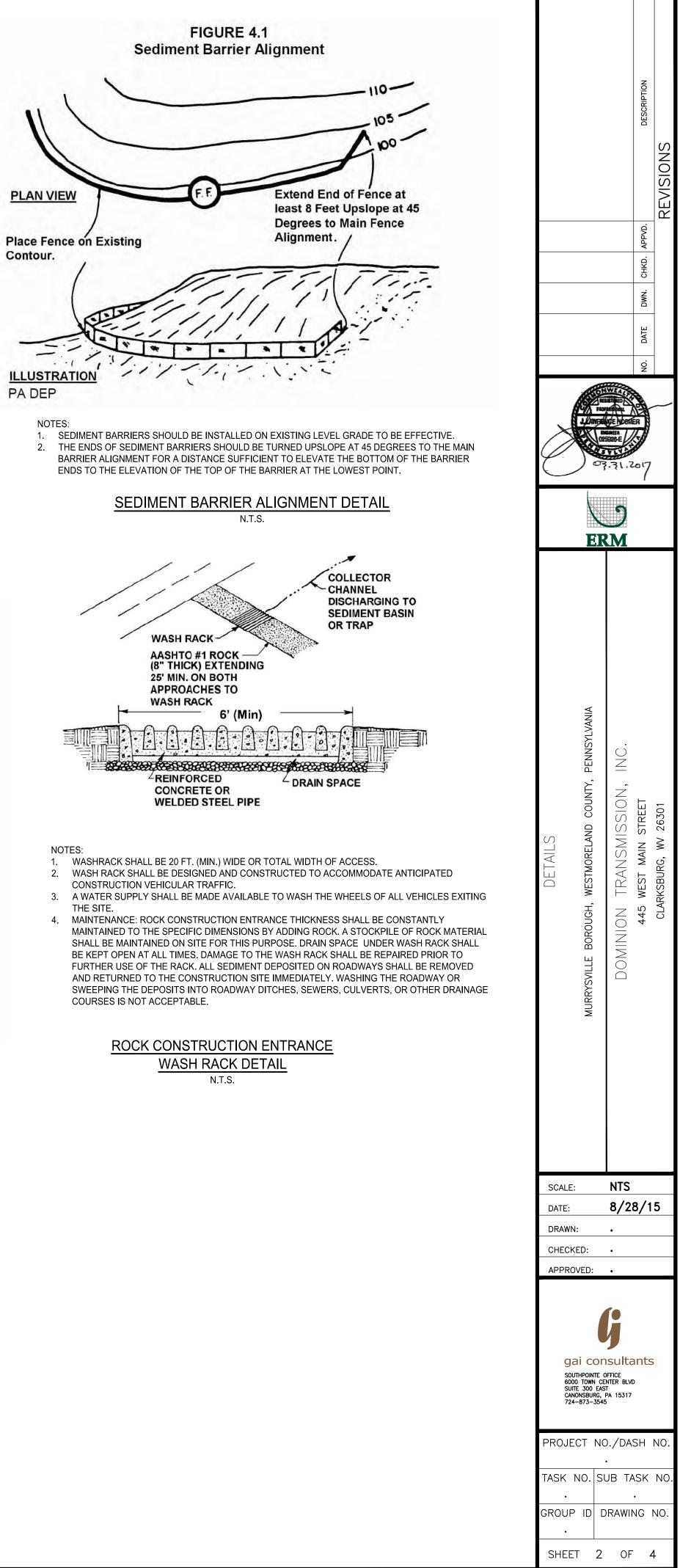
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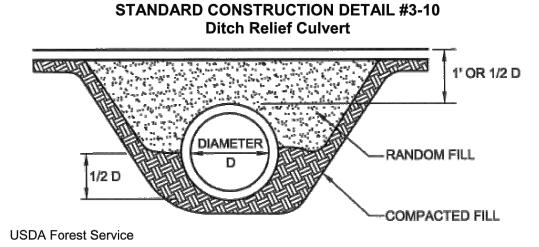




Recommended Maximum Spacing of Ditch Relief Culverts (18" dia. CMP) For Permanent Access Roads

	Soil Type in Ditch						
Road Grade Percent	Gravels, Sandy Gravels, Aggregate Surfacing	Silty Gravels, Clayey Gravels	Plastic and Nonplastic Inorganic Clays	Inorganic Silts, Silty or Clayey Sands	Sands, Silty Sands, and Gravelly Sands		
		Cu	Ivert Spacing Fe	et*			
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		

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



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.

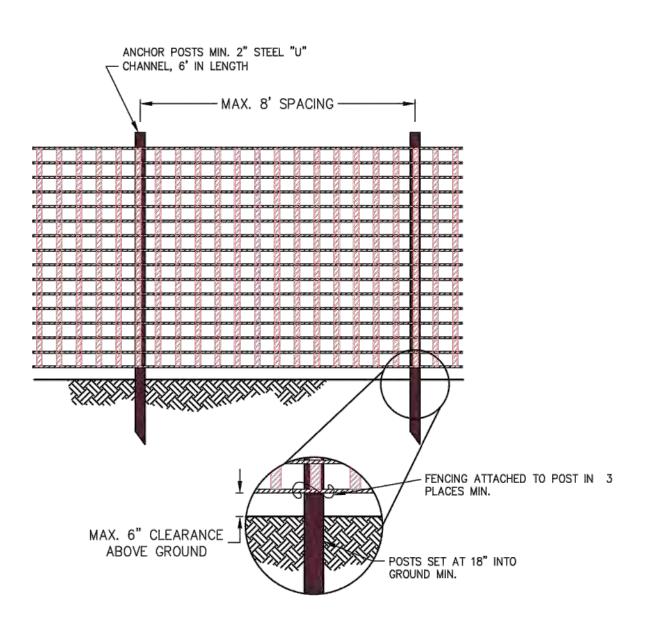
Extend culvert 12" beyond base of road fill on both sides. Firmly pack fill around culvert, especially the bottom half.

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.

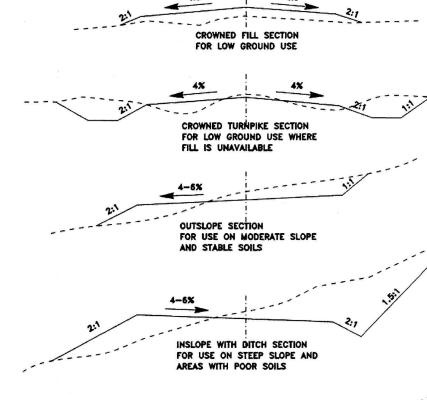
* For steep slope (> 2H:1V) outfalls, a minimum 20 foot long R- 5 apron is recommended for temporary access roads where the recommended culvert spacing is used. For permanent access roads, a minimum R-6 rock size is recommended.

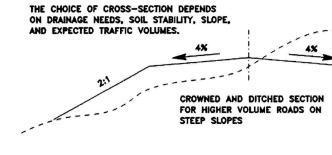


NOTES: 1. PROTECTION BARRIER SHALL BE 4' HIGH, CONSTRUCTED OF DURABLE AND HIGHLY VISIBLE MATERIAL (PLASTIC ORANGE CONSTRUCTION FENCE AND SNOW FENCE MAY BE USED).

- 2. PROTECTÍON BARRIERS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE WORK AT THE SITE.
- 3. ADDITIONAL WARNING SIGNS SHOULD ALSO BE PLACED ON THE FENCING AND IN APPROPRIATE AREAS NEAR THE WORK ZONE.

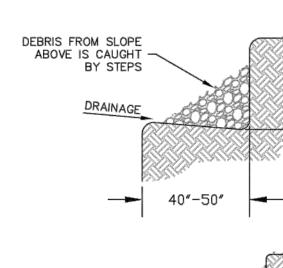




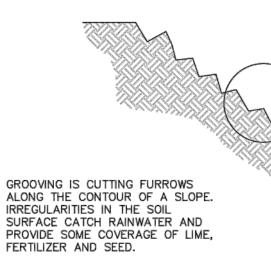


FROM: US FOREST SERVICE AND MICHIGAN DNI





STAIR STEPPING CUT SLOPES



GROOVING SLOPES

STANDARD CONSTRUCTION DETAIL # 3-1 Rock Construction Entrance GEOTEXTILE-MIN. 8" AASHTO # PROFILE

PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

1. ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON-SITE FOR THIS PURPOSE.

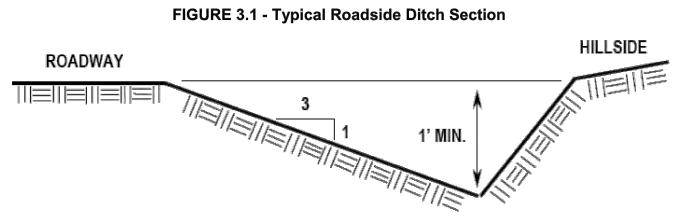
NOTES:

- 2. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.
- 3. TYPE 1 GEOTEXTILE SHALL CONFORM TO REQUIREMENTS IN AASHTO M-288 FOR SEPARATION FABRICS AND CLASS 3 REQUIREMENTS
- 4. A PENNDOT HIGHWAY OCCUPANCY PERMIT IS REQUIRED FOR STATE ROUTE CROSSINGS. A TOWNSHIP ROAD OCCUPANCY/DRIVEWAY PERMIT IS REQUIRED FOR A DRIVEWAY OR CONSTRUCTION ENTRANCE ONTO A TOWNSHIP ROAD. A FLAGMAN SHALL BE UTILIZED WHERE SIGHT DISTANCE IS MINIMAL.

ROCK CONSTRUCTION ENTRANCE DETAIL N.T.S.

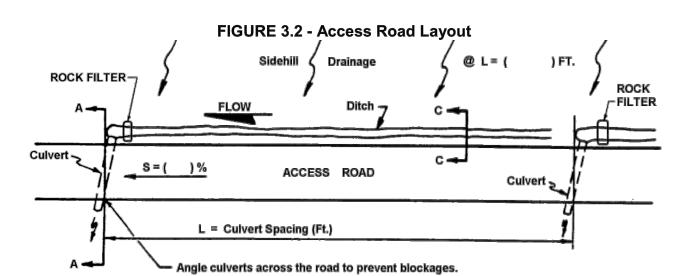
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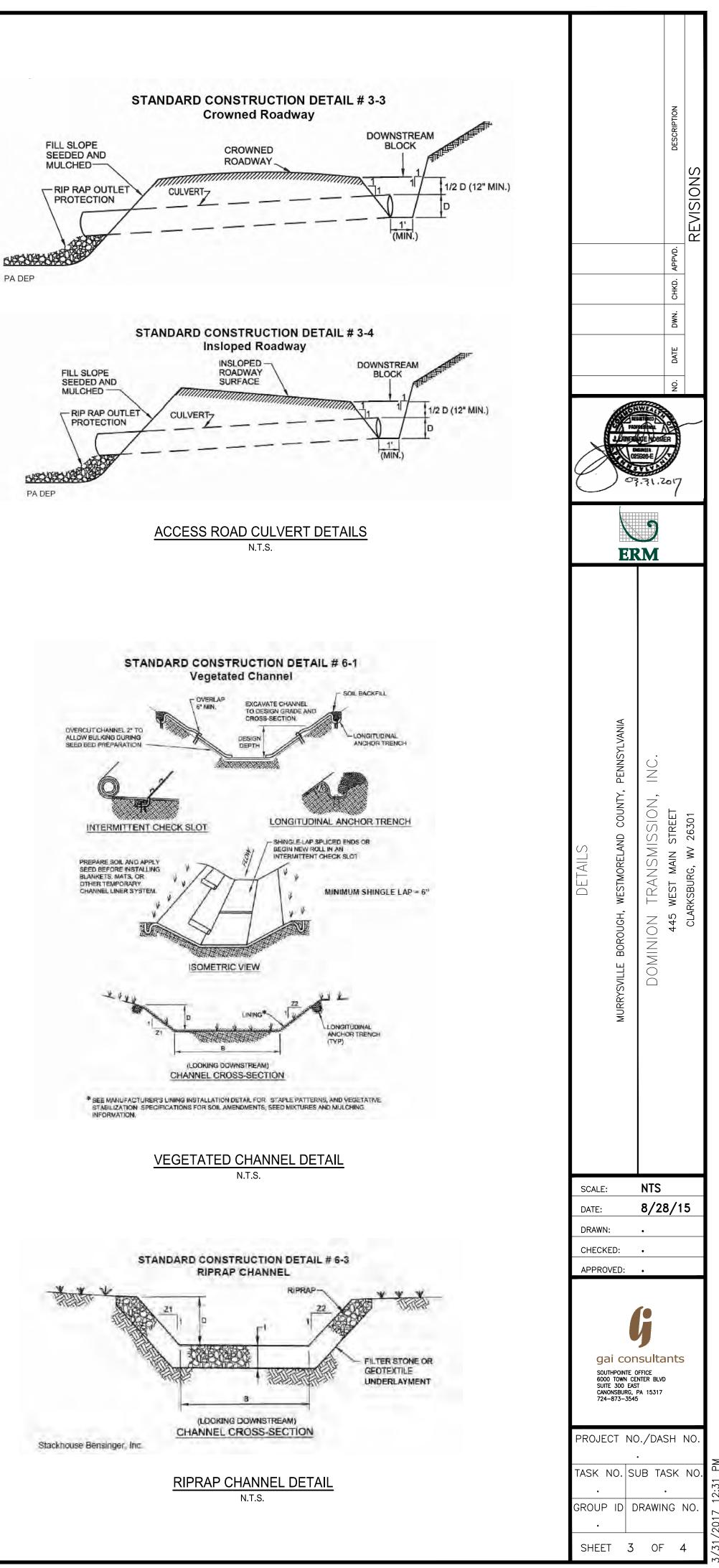
ROADSIDE DITCH - Sediment Removal Efficiency: VERY LOW. This device is not an ABACT for special protection watersheds, but may be used to make other BMPs that are ABACT work more effectively. In most cases, the ditches paralleling temporary access roads and haul roads need not be lined if sufficient ditch relief culverts are provided, erosion resistant soils are present, and flow velocities are less than 2 feet per second (fps). However, protective liners are required for roadside ditches discharging to special protection waters, where discharging directly to surface waters, or where necessary to prevent the erosion of the channel itself. A typical cross-section for a roadside ditch is



USDA Forest Service

shown in Figure 3.1.





TYPES OF ROAD CROSS-SECTIONS N.T.S.

WATER, SOIL AND FERTILIZER

ARE HELD BY STEPS-PLANTS

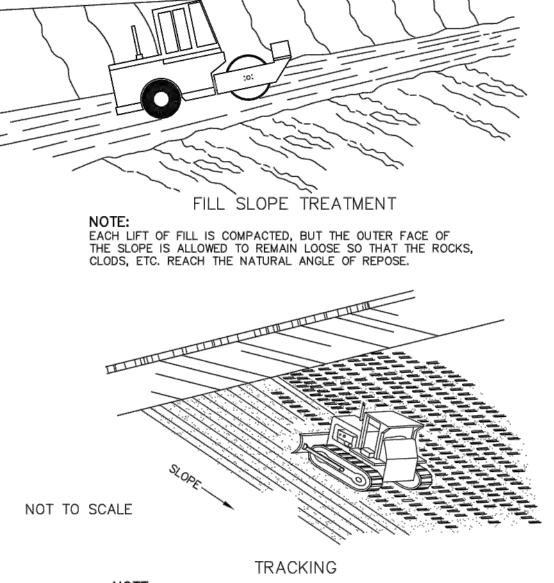
CAN BECOME ESTABLISHED ON

THE STEPS.

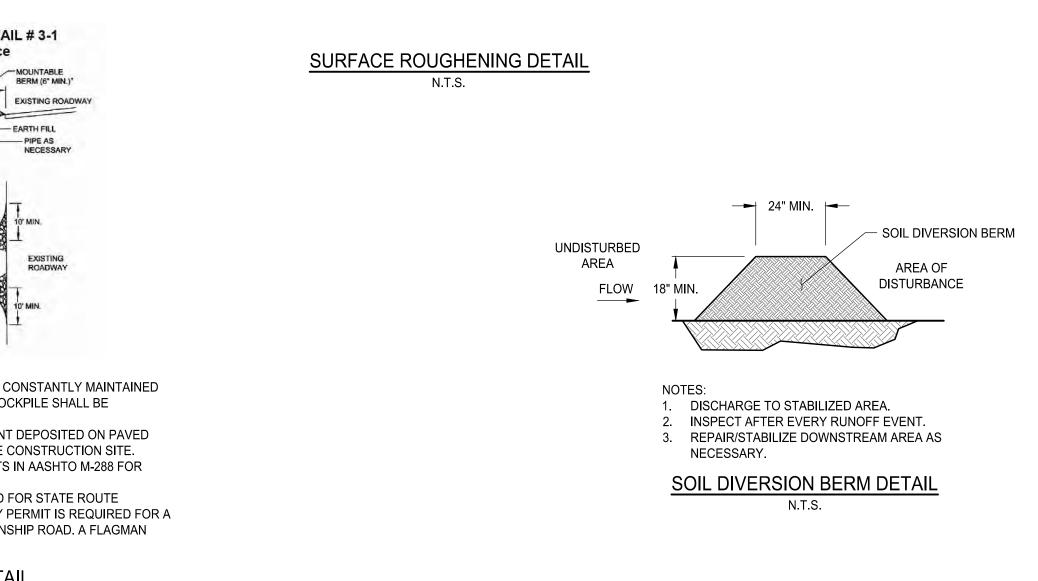
4%

USDA Forest Service

Sizing and spacing of ditch relief culverts should be according to Table 3.3. Rock filters are not required where roadway surface is stabilized, ditches are provided with protective liners, and cut banks are stabilized. Suitable outlet protection should be provided at each culvert outfall.



NOTE DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE.



EROSION AND SEDIMENT CONTROL NOTES AREA OF DISTURBANCE: 82.49 ACRES ESCGP-1 BOUNDARY AREA: 75.49 ACRES

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE CONSTRUCTION AND POST CONSTRUCTION PERIOD IN ORDER TO PREVENT SOIL EROSION, SEDIMENT-LADEN RUNOFF AND OTHER POLLUTANTS FROM ENTERING WATERWAYS, NEIGHBORING PROPERTY, ROADS, ETC.

THE CONTRACTOR SHALL BE REQUIRED TO INCORPORATE ALL EROSION AND SEDIMENTATION CONTROL FEATURES INTO THE PROJECT AT THE EARLIEST PRACTICABLE TIME.

TEMPORARY EROSION CONTROL MEASURES

- 1. REVIEW AND SUBSEQUENT AUTHORIZATION BY THE WESTMORELAND COUNTY CONSERVATION DISTRICT (WCCD) SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF ANY EARTH DISTURBANCE ACTIVITY.
- 2. DURING CONSTRUCTION, THE AMOUNT OF SOIL DISTURBANCE SHALL BE KEPT TO A MINIMUM AND, WHENEVER POSSIBLE, A SUITABLE VEGETATIVE BUFFER SHALL BE MAINTAINED AROUND ALL CONSTRUCTION AREAS ON SITE.
- 3. ALL EARTHMOVING ACTIVITIES SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE THE AMOUNT OF DISTURBED AREA.
- 4. RESPONSIBILITY FOR IMPLEMENTING EROSION AND SEDIMENTATION CONTROL SHALL BE DESIGNATED TO A MINIMUM OF ONE INDIVIDUAL WHO WILL BE PRESENT AT THE PROJECT SITE DAILY.
- 5. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
- 6. WHENEVER POSSIBLE, ALL EXCAVATED MATERIAL SHALL BE PLACED UPSLOPE FROM DISTURBED AREAS. STOCKPILES SHALL BE SET PARALLEL TO GRADE TO REDUCE RUNOFF.
- UPON GENERAL COMPLETION OF THE FINAL GRADING, TOPSOIL SHALL BE PLACED AND FINAL GRADING PASSES SHALL BE MADE PERPENDICULAR TO THE DIRECTION OF RUNOFF. 8. RE-SEED AND RE-ESTABLISH ANY BARREN AND DISTURBED AREAS
- WITHOUT ESTABLISHED GROUND COVER. 9. FILTER SOCK SHALL BE PLACED AT CRITICAL EROSION AREAS AS SHOWN IN THE DRAWINGS IN ORDER TO PREVENT
- SEDIMENT-LADEN RUNOFF FROM ENTERING INTO WATERWAYS, NEIGHBORING PROPERTIES, ROADWAYS, ETC.
- 10. FILTER SOCK SHALL BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S RECOMMENDATIONS. 11. WHERE DUST OR WIND EROSION IS A PROBLEM, UNSTABLE
- SURFACE(S) SHALL BE SPRINKLED WITH WATER OR OTHER SUITABLE DUST SUPPRESSOR; HOWEVER, WASHING OF ROADWAYS IS NOT PERMITTED.
- 12. ANY WATER PUMPED FROM ANY EXCAVATION, FOR ANY REASON, SHALL BE DIRECTED THROUGH A SEDIMENT FILTER BAG CONFORMING TO PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS AS SHOWN IN THE EROSION AND SEDIMENT CONTROL DETAILS.
- 13. THE CONTRACTOR SHALL EMPLOY MEASURES DURING CONSTRUCTION TO PREVENT SPILLS OF FUELS OR LUBRICANTS. IF A SPILL OCCURS, IT SHALL BE IMMEDIATELY CONTAINED IN ORDER TO PREVENT ITS ENTRY INTO NEARBY WATERWAYS.
- 14. ANY TEMPORARY EROSION CONTROL MEASURE APPLIED TO EXPOSED SOIL SURFACES SHALL REMAIN FUNCTIONAL UNTIL VEGETATED COVER IS FIRMLY ESTABLISHED (70% VEGETATED COVER BY EROSION RESISTANT PERENNIALS), UNLESS OTHERWISE STABILIZED WITH AN ACCEPTABLE PERMANENT COVER (ROCK, ETC.).
- 15. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE SUBJECT TO THE APPLICABLE REGULATIONS OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- 16. SHOULD ANY ADDITIONAL EROSION OR SEDIMENTATION OCCUR DURING CONSTRUCTION OR QUESTIONS REGARDING THE MAINTENANCE CONTROL PRACTICES ARISE, CONTACT THE OWNER'S REPRESENTATIVE.
- 17. ALL TEMPORARY SEEDING SHALL ADHERE TO THE SEEDING SPECIFICATIONS AS PROVIDED IN THIS PLAN. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, OTHER THAN THOSE RECEIVING AN AGGREGATE SURFACE SHALL BE STABILIZED BY APPLYING AN APPROPRIATE SEED MIXTURE FOLLOWING THE TEMPORARY SEEDING SPECIFICATIONS AS PROVIDED IN THIS PLAN IN ORDER TO ESTABLISH AN EROSION RESISTANT STAND OF VEGETATION.

PERMANENT EROSION CONTROL MEASURES

- 1. PERMANENT SOIL PROTECTION SHALL BE COMPLETED AS EARLY AS PRACTICABLE.
- 2. ALL EROSION AND SEDIMENT CONTROL BMP'S SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED. ONCE PERMANENT STABILIZATION HAS BEEN ESTABLISHED AND WITH APPROVAL OF WCCD, TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S MAY BE REMOVED. ANY AREAS DISTURBED DURING THIS REMOVAL SHALL BE IMMEDIATELY STABILIZED.
- 3. ALL PERMANENT SEEDING SHALL ADHERE TO THE SEEDING SPECIFICATIONS AS PROVIDED IN THIS PLAN. PERMANENT SEEDING AND MULCHING WILL BE INCORPORATED IN THE CONSTRUCTION PHASES DURING THE APPROVED PLANTING SEASON IN ACCORDANCE WITH THE PERMANENT SEEDING
- SPECIFICATIONS AS PROVIDED IN THIS PLAN. 4. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER ALL RUNOFF EVENTS.
- 5. THE PERMITTEE AND CO-PERMITTEE SHALL TAKE ALL REASONABLE STEPS TO MINIMIZE OR PREVENT ANY DISCHARGE IN VIOLATION OF THIS PERMIT THAT HAS A REASONABLE LIKELIHOOD OF ADVERSELY AFFECTING HUMAN HEALTH OR THE ENVIRONMENT.
- 6. APPROVED EROSION AND SEDIMENTATION CONTROL PLANS MUST BE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.
- 7. IF FUEL OR OTHER DANGEROUS CHEMICALS ARE STORED ON SITE, THEN A PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN MUST BE DEVELOPED AND KEPT ON SITE.

SITE STABILIZATION NOTES

- 1. UPON FINAL COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL IMMEDIATELY HAVE TOPSOIL RESTORED, REPLACED, OR AMENDED, SEEDED, MULCHED, OR OTHERWISE PERMANENTLY STABILIZED AND PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.
- 2. EROSION AND SEDIMENT CONTROL BMP'S SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED. ONCE PERMANENT STABILIZATION HAS BEEN ESTABLISHED, THE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHALL BE PERMANENTLY STABILIZED UPON COMPLETION OF THE TEMPORARY EROSION AND SEDIMENT CONTROL BMP REMOVAL ACTIVITY.
- 3. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE

OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED. THE DISTURBED AREAS SHALL BE COVERED WITH EITHER A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION, OR AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.

- 4. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
- 5. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH EITHER A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION, OR AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.

CONSTRUCTION SEQUENCE

TL-636 PIPELINE CONSTRUCTION SEQUENCE

- A. PRE-CONSTRUCTION
- 1. ALL APPLICABLE PERMITS AND APPROVALS REQUIRED FOR THIS PROJECT SHALL BE SECURED PRIOR TO THE START OF CONSTRUCTION. COPIES OF THE PERMITS, PLANS, AND APPROVALS SHALL BE KEPT ON-SITE AT ALL TIMES.
- 2. INITIATE A PA ONE-CALL, LOCATE ALL UTILITIES WITHIN THE PROJECT AREA, AND PROTECT AS NECESSARY.
- 3. THE CONTRACTOR SHALL SUBMIT WRITTEN NOTIFICATION TO THE PADEP AT LEAST SEVEN DAYS PRIOR TO COMMENCING EARTHMOVING ACTIVITIES.
- 4. ALTERNATIVES TO THE STAGING OR SPECIFICATIONS GIVEN IN THIS PLAN MUST FIRST BE APPROVED BY THE PADEP PRIOR TO IMPLEMENTATION.
- 5. NON-DESIGNATED WASTE/BORROW AREAS MUST HAVE AN APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
- 6. ALL BUILDING MATERIALS MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS. NO BUILDING MATERIALS, WASTES, OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

B. CONSTRUCTION SEQUENCE OF BMP INSTALLATION AND REMOVAL

THE FOLLOWING CONSTRUCTION SEQUENCE PRESENTS A GENERAL OVERVIEW OF THE WORK EFFORTS TO ACCOMPLISH THE PROJECT AND INCORPORATES EROSION CONTROL MEASURES THAT SHALL BE FOLLOWED DURING THE PROJECT ACTIVITIES.

- 1. MOBILIZE EQUIPMENT AND INSTALL THE ROCK CONSTRUCTION ENTRANCES AND ACCESS ROADS IN ACCORDANCE WITH THE PLAN DRAWINGS AND TYPICAL DETAILS. TEMPORARY PIPES ARE REQUIRED FOR ROCK CONSTRUCTION ENTRANCES AND WHERE ROADSIDE SWALES EXIST ALONG PROJECT ROADWAYS.
- 2. INSTALL TEMPORARY PROTECTIVE FENCE AROUND EXISTING WETLANDS AS INDICATED ON THE PLAN AND IN ACCORDANCE WITH THE TYPICAL DETAILS.
- 3. CLEAR AND GRUB AS NECESSARY FOR THE INSTALLATION OF THE FILTER SOCK AND WATERBARS AT THE LOCATIONS SHOWN ON THE PLAN DRAWINGS AND IN ACCORDANCE WITH THE TYPICAL DETAILS.
- 4. INSTALL PUMPED WATER FILTER BAGS, TEMPORARY WETLAND CROSSINGS, AND TEMPORARY STREAM CROSSINGS IN ACCORDANCE WITH THE PLAN DRAWINGS AND TYPICAL DETAILS. ENSURE WETLAND TOPSOIL THAT IS EXCAVATED FOR THE TEMPORARY WETLAND CROSSINGS IS STOCKPILED SEPARATELY FOR INSTALLATION FOLLOWING CONSTRUCTION COMPLETION. ENSURE ALL TEMPORARY STOCKPILE AREAS ARE PROTECTED WITH FILTER SOCK.
- 5. CLEAR AND GRUB THE PROJECT AREA. INSTALL WATERBARS AND REMAINING FILTER SOCK. STRIP TOPSOIL AND STOCKPILE ON THE UPSLOPE SIDE OF THE TRENCH OR IN AN APPROVED DESIGNATED STORAGE AREA. FORTIFY WATERBARS WITH A LOG OR STEEL PIPE WHERE EQUIPMENT WILL TRAVERSE ACROSS THE WATERBAR.
- 6. EXCAVATE THE TRENCH FOR THE PROPOSED GATHERING. THE EXCAVATED MATERIAL SHALL BE PLACED ON THE UPSLOPE SIDE OF THE EXCAVATION WITHIN THE LIMITS OF EROSION CONTROL. EXCAVATED MATERIAL SHALL NOT BE PLACED OR STOCKPILED IN A WETLAND, STREAM, DITCH, DRAINAGE SWALE OR IN TOPSOIL STOCKPILE AREAS.
- 7. PUMP ANY GROUNDWATER OR STORMWATER ENCOUNTERED FROM THE TRENCH INTO A FILTER BAG IN ACCORDANCE WITH THE TYPICAL DETAILS AND MANUFACTURER SPECIFICATIONS. THE PUMPED WATER FILTER BAG SHALL BE PLACED ON A WELL-VEGETATED OR STABILIZED AREA AND SHALL DISCHARGE INTO A STABILIZED DRAINAGEWAY OR DRAINAGE SYSTEM.
- 8. COMPLETE THE INSTALLATION OF THE GATHERING. INSTALL TRENCH PLUGS AS INDICATED ACCORDING TO THE PLAN DRAWINGS AND TYPICAL DETAILS. BACKFILL THE TRENCH WITH
- DESIGNATED SIZE LIFTS AND PROPER COMPACTION. 9. INSTALL EROSION CONTROL BLANKET AS DETAILED. INSTALL FLEXTERRA™ ON ALL SLOPES 3:1 AND STEEPER.
- 10. REMOVE THE TEMPORARY WETLAND CROSSINGS AND TEMPORARY STREAM CROSSINGS AND TEMPORARY FILL USED FOR CONSTRUCTION ACCESS. RETURN WETLAND TOPSOIL TO THE IMPACTED WETLAND AREAS AND GRADE TO THE ORIGINAL CONFIGURATIONS, SEED WETLAND AREA WITH TEMPORARY SEEDING, AND MULCH WITH STRAW. RETURN NATIVE STREAM SUBSTRATE TO THE STREAM BED AND GRADE TO THE ORIGINAL CONFIGURATIONS. STABILIZE, SEED, AND MULCH STREAM BANKS AND SWALES IN ACCORDANCE WITH THE PLAN DRAWINGS AND TYPICAL DETAILS.
- 11. RECLAIM STAGING AREAS AND REMOVE ALL WASTE AND DEBRIS GENERATED DURING THE CONSTRUCTION PROCESS.
- 12. SEED AND MULCH ALL DISTURBED AREAS WITHIN SEVEN DAYS AFTER THE PIPELINE IS INSTALLED.
- 13. THE SITE WILL BE CONSIDERED STABILIZED WHEN A UNIFORM 70% PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED FOR THE ENTIRE PROJECT SITE AND CONCURRENCE HAS BEEN RECEIVED FROM THE WCCD. ONCE THE SITE HAS BEEN STABILIZED, THE EROSION AND SEDIMENT POLLUTION CONTROL BMP'S CAN BE REMOVED. ANY AREAS DISTURBED BY THE REMOVAL OF THE BMP'S SHALL BE IMMEDIATELY SEEDED AND MULCHED.

SCHEDULE OF MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS

THE SOIL EROSION AND SEDIMENTATION CONTROLS UTILIZED IN THE DEVELOPMENT OF THIS PLAN SHALL BE MAINTAINED AND REPAIRED IN ORDER TO KEEP THEM IN EFFECTIVE CONDITION UNTIL STABILIZATION IS ACHIEVED. THE CONTRACTOR SHALL PERFORM CERTAIN PERIODIC DUTIES IN ORDER TO ASSURE PROPER CONTROL. MAINTENANCE OF THE CONTROLS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING MAINTENANCE PROCEDURES FOR UTILIZED CONTROLS: MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND

SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS BY A QUALIFIED PERSON TRAINED AND EXPERIENCED IN EROSION AND SEDIMENTATION CONTROL TO ASCERTAIN THAT THE BMP'S ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATERS OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE: A SUMMARY OF SITE CONDITIONS, BMP'S AND COMPLIANCE, AND THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION. ALL SITE INSPECTIONS SHALL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INCLUDING THE COMPLIANCE ACTIONS, DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG SHALL BE KEPT ON-SITE AT ALL TIMES AND MADE AVAILABLE TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION UPON REQUEST.

ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, RESEEDING, RE-MULCHING, AND RE-NETTING, MUST BE PERFORMED IMMEDIATELY.

MISCELLANEOUS ADJUSTMENTS AND CORRECTIONS SHALL BE MADE TO ANY EROSION CONTROL STRUCTURE AS DEEMED NECESSARY BY THE ENGINEER OR PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REPRESENTATIVE IN ORDER TO CORRECT UNFORESEEN PROBLEMS CAUSED BY A STORM PRIOR TO STABILIZATION.

IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED. WHERE BMP'S ARE FOUND TO BE INOPERATIVE OR FAIL TO ALLEVIATE EROSION AND SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER'S REPRESENTATIVE.

PERIMETER CONTROLS

1. THE PERIMETER CONTROLS SHALL BE INSPECTED AFTER EVERY RUN-OFF EVENT. ANY NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY

- 2. ACCUMULATED SEDIMENT SHALL BE REMOVED AS REQUIRED TO KEEP THE FENCE FUNCTIONAL. IN ALL CASES, THE DEPOSITS WILL BE REMOVED WHERE ACCUMULATIONS REACH HALF THE ABOVE THE GROUND HEIGHT OF THE PERIMETER CONTROLS. 3. ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR WILL BE
- REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIAL. 4. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACEMENT OF THE PERIMETER CONTROLS. 5. ANY ACCUMULATED DEBRIS AT THE SILT BARRIERS WILL BE
- REMOVED AND PROPERLY DISPOSED IN A RESPONSIBLE MANNER. BARRIERS SHALL BE CHECKED AND REALIGNED OR RESET AS REQUIRED. ANY DEBRIS OR SOLID WASTE MATERIAL ACCUMULATED FROM CONSTRUCTION ACTIVITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED
- LANDFILL. CONSTRUCTION WASTE SHALL NOT BE BURIED ON THE SUBJECT SITE.

ROCK CONSTRUCTION ENTRANCE

- 1. THE STRUCTURE'S THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY. ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE SITE. WASHING OF THE ROADWAY IS NOT PERMITTED.
- 2. STABILIZED CONSTRUCTION ENTRANCES SHALL BE CLEANED AND REDRESSED WHEN VOIDS BECOME CHOKED WITH MUD AND SEDIMENT.
- 3. FILTER FABRIC SHALL BE INSTALLED UNDER ALL ROCK CONSTRUCTION ENTRANCES

ESCGP-2 PERMIT REQUIREMENTS FOR INSPECTION AND MAINTENANCE OF BMP'S

1. THE PERMITTEE AND THE CO-PERMITTEE MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY AND AFTER EACH RUNOFF EVENT BY QUALIFIED PERSONNEL TO ASSURE THE EFFECTIVENESS OF BMP OPERATIONS. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT.

- 2. THE PERMITTEE AND CO-PERMITTEE SHALL RETAIN RECORDS OF ALL MONITORING INFORMATION INCLUDING INSPECTION REPORTS AS REQUIRED BY THE PERMIT FOR A PERIOD OF 3 YEARS FROM THE DATE OF TERMINATION OF COVERAGE UNDER THIS PERMIT.
- 3. THE PERMITTEE AND CO-PERMITTEE SHALL TAKE ALL REASONABLE STEPS TO MINIMIZE OR PREVENT ANY DISCHARGE IN VIOLATION OF THIS PERMIT THAT HAS REASONABLE LIKELIHOOD OF ADVERSELY AFFECTING HUMAN HEALTH OR THE ENVIRONMENT.
- 4. UPON REDUCTION, LOSS, OR FAILURE OF A BMP, THE PERMITTEE AND CO-PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMP OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. 5. THE PERMITTEE AND CO-PERMITTEE MUST COMPLY WITH ALL TERMS AND CONDITIONS OF THE ESCGP-2 PERMIT. ANY PERMIT NONCOMPLIANCE IS GROUNDS FOR ENFORCEMENT ACTION. THE PERMITTEE AND CO-PERMITTEE MAY BE SUBJECT TO CRIMINAL AND/OR CIVIL PENALTIES FOR VIOLATIONS OF THE TERMS AND CONDITIONS OF THIS PERMIT.
- 6. THE OWNER OR OPERATOR OF THE FACILITY WITH STORMWATER DISCHARGE AS COVERED BY THIS PERMIT SHALL MAKE PLANS AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES
- 7. THE STAGING OF EARTH DISTURBANCE ACTIVITIES AND MAINTENANCE REQUIREMENTS CONTAINED IN THE EROSION AND SEDIMENT CONTROL PLAN MUST BE FOLLOWED.
- 8. AN EROSION AND SEDIMENT CONTROL PLAN SHALL BE READY AND IMPLEMENTED FOR ALL OFF-SITE SPOIL AND BORROW AREAS.

MULCHING SPECIFICATIONS

MULCHING SHALL CONFORM TO THE SPECIFICATIONS IN THE **RESTORATION & REHABILITATION PLAN, INCLUDED HEREIN FOR** CONVENIENCE.

SOIL SUPPLEMENT SPECIFICATIONS

SUPPLEMENTS SHALL CONFORM TO THE SPECIFICATIONS IN THE **RESTORATION & REHABILITATION PLAN, INCLUDED HEREIN FOR** CONVENIENCE.

CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE

1. IF THE SITE HAS EXCESS FILL THAT NEEDS TO BE EXPORTED TO AN OFF-SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT. IF ALL CUT AND FILL MATERIALS WILL BE USED ON THE SITE, A CLEAN FILL DETERMINATION IS NOT REQUIRED BY THE OPERATOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF A REGULATED SUBSTANCE OCCURRED ON THE SITE. 2. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S

- "MANAGEMENT OF FILL" DOCUMENT NUMBER 256-2182-773 3. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER
- SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT (NOT INCLUDING MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE), AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED.
- 4. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, AND REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTIONS AND/OR REVIEW OR THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE.
- 5. FILL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S MUNICIPAL OR RESIDENTIAL WASTE REGULATIONS BASED ON 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

SOILS LIMITATIONS AND RESOLUTIONS

THE FOLLOWING ADDRESSES POTENTIAL ON-SITE SOILS USE LIMITATIONS BASED UPON TYPICAL USDA SOIL LIMITATIONS FOR THE SOILS ANTICIPATED TO BE ENCOUNTERED DURING CONSTRUCTION AND PROPOSED RESOLUTIONS (RELATING TO THE SOILS WHERE CONSTRUCTION ACTIVITIES ARE PROPOSED):

- 1. SUSCEPTIBLE TO FROST ACTION PIPELINES ARE TO BE BACKFILLED WITH SUITABLE FILL AND WILL BE PLACED AT A SUITABLE DEPTH. EXCESSIVE DAMAGE FROM FROST ACTION IS NOT ANTICIPATED.
- 2. GRAVEL CONTENT IN TOPSOIL PRESENCE OF GRAVEL OR ROCK FRAGMENTS IN THE TOPSOIL MAY MAKE THE ESTABLISHMENT OF VEGETATION DIFFICULT. PROPER PREPARATION (RAKING, LIME, AND FERTILIZER APPLICATION, ETC.) OF THE TOPSOIL WILL MINIMIZE THOSE FACTORS AND AID IN THE ESTABLISHMENT OF VEGETATION.
- 3. STEEP SLOPES STEEP SLOPES EXIST ON SITE AND HAVE BEEN FACTORED INTO THE DESIGN. EROSION CONTROL BLANKETS HAVE BEEN PROPOSED WHERE SHOWN ON THE DRAWINGS BASED ON SOIL CONDITIONS.
- 4. DROUGHT WATERING OF SEED MAY BE REQUIRED. 5. HIGH WATER TABLE/SHALLOW DEPTH TO SATURATED ZONE - A PUMPED WATER FILTER BAG DETAIL HAS BEEN INCLUDED IN THE DRAWINGS. ANY WATER ENCOUNTERED DURING EXCAVATION ACTIVITIES SHOULD BE DISCHARGED THROUGH THIS FILTER BAG AS AN EROSION AND SEDIMENT CONTROL MEASURE.
- 6. CUTBANKS CAVE THE SITE IMPROVEMENTS WILL REQUIRE SHALLOW BULK EXCAVATION. ALL POTENTIAL TRENCH WORK SHALL REQUIRE ADEQUATE SHORING TO PREVENT CAVE-INS.
- 7. SHALLOW DEPTH TO BEDROCK THE SOILS THAT HAVE A SHALLOW DEPTH TO BEDROCK SHALL BE TAKEN INTO CONSIDERATION FOR EARTH MOVING ACTIVITIES. ANY BEDROCK ENCOUNTERED IS ANTICIPATED TO BE LIMITED AND SHALL BE
- REMOVED. 8. MODERATE RISK OF CORROSION IN METAL AND CONCRETE PIPING - PROVIDE ADEQUATE COVER OVER CONCRETE PIPES. STEEL PIPE
- IS TO RECEIVE A PROTECTIVE COATING PRIOR TO BACKFILL. 9. HYDRIC SOILS - VERY LIMITED DISTURBANCE TO THIS SOIL AREA IS PROPOSED. WETLAND DELINEATION WAS PERFORMED AND THE LOCATIONS OF THE WETLAND AREAS ARE INDICATED ON THE DRAWINGS.

RECYCLING AND DISPOSAL

PROCEDURES THAT ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT REGULATIONS. INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. THE CONTRACTOR SHALL PLAN AND IMPLEMENT MEASURES FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL DURING CONSTRUCTION. WHEREVER POSSIBLE RECYCLING OF EXCESS MATERIALS IS PREFERRED RATHER THAN DISPOSAL. DISPOSAL OF CONSTRUCTION WASTES SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

LINEAR PROJECT SPECIFIC NOTES

1. LIMITING EXPOSED AREAS

EARTH DISTURBANCE ACTIVITIES SHALL BE PLANNED AND CONDUCTED TO MINIMIZE THE EXTENT AND DURATION OF THE DISTURBANCE [SECTION 102.4(8)(4)].

THE LENGTH OF TIME FOR CONSTRUCTING ACCESS ROADS, UTILITY LINE TRENCH BACK-FILLING, FINAL GRADING AND CLEANUP SHOULD BE KEPT TO A MINIMUM. GOOD PLANNING AND SCHEDULING OF THE VARIOUS UTILITY CONSTRUCTION ITEMS, TOGETHER WITH TIMELY AVAILABILITY OF MATERIALS, ADEQUATE EQUIPMENT, AND ADEQUATE MANPOWER, WILL HELP REDUCE THE EXPOSURE TIME OF DISTURBED LAND.

PIPELINES WITH JOINTS THAT ALLOW A MANUFACTURED LENGTH OF PIPE TO BE PLACED IN THE TRENCH WITH THE PIPE JOINT ASSEMBLED/MADE IN THE TRENCH REQUIRE AN OPEN PIPELINE TRENCH THAT IS ONLY SLIGHTLY LONGER THAN THE LENGTH OF PIPE BEING INSTALLED. THE TOTAL LENGTH OF EXCAVATED TRENCH OPEN AT ANY ONE TIME SHOULD NOT BE GREATER THAN THE TOTAL LENGTH OF PIPELINE/UTILITY LINE THAT CAN BE PLACED IN THE TRENCH AND BACK-FILLED IN ONE WORKING DAY. NO MORE THAN 50 LINEAR FEET OF OPEN TRENCH SHOULD EXIST WHEN PIPELINE/UTILITY LINE INSTALLATION CEASES AT THE END OF THE WORKDAY. SOIL SUPPLEMENTS, SEED AND MULCH SHOULD BE APPLIED WITHIN 7 DAYS AFTER THE PIPELINE/UTILITY LINE IS INSTALLED.

LARGE DIAMETER STEEL PIPELINES WITH WELDED JOINTS WHERE THE PIPE JOINTS ARE WELDED WHILE THE PIPE IS OUT OF THE TRENCH USUALLY REQUIRE A FAIRLY LONG LENGTH OF OPEN PIPELINE TRENCH. THE TOTAL TIME OF EARTH EXPOSURE FOR THIS TYPE OF PIPELINE CONSTRUCTION, INCLUDING THE ACCESS ROADWAY PARALLEL TO THE PIPELINE, SHOULD GENERALLY BE LIMITED TO NO MORE THAN 60 CALENDAR DAYS AT ANY GIVEN POINT ALONG THE PIPELINE. THIS MEANS, FOR EXAMPLE, THAT FROM THE TIME THAT EARTH DISTURBANCE ACTIVITIES COMMENCE AT STATION 1+00 UNTIL FINAL GRADING IS COMPLETED AND SOIL SUPPLEMENTS, SEED, AND MULCH ARE APPLIED AT STATION 1+00, NO MORE THAN 60 CALENDAR DAYS SHOULD EXPIRE.

2. SWALE/DITCH/CHANNEL/WATERWAY CROSSINGS

ADEQUATELY SIZED CULVERTS SHALL BE INSTALLED FOR ACCESS ROADS AT LOCATIONS WHERE ROADS CROSS A SWALE/DITCH/CHANNEL/WATERWAY WHETHER OR NOT FLOWING WATER IS ENCOUNTERED.

WHERE THE UTILITY LINE TRENCH CROSSES A SWALE/DITCH/CHANNEL/WATERWAY WITH FLOWING WATER THEN A TEMPORARY PIPE CULVERT, PROPERLY SAND BAGGED, SHOULD BE INSTALLED PRIOR TO THE TRENCHING OPERATION AND MAINTAINED UNTIL THE UTILITY LINE IS INSTALLED, THE TRENCH BACKFILLED, AND THE SWALE/DITCH/CHANNEL OR WATER WAY IS RESTORED AND STABILIZED. COFFERDAMS AND A PUMP OR DIRECTIONAL DRILLING MAY BE USED AT CROSSINGS AS APPROVED BY THE OWNER'S REPRESENTATIVE.

WHERE A UTILITY LINE CROSSES A DRY SWALE/DITCH/CHANNEL/WATERWAY AND THE EXCAVATED TRENCH MUST REMAIN OPEN FOR MORE THAN ONE WORKING DAY, THEN A TEMPORARY PIPE CULVERT, PROPERLY SAND BAGGED. SHOULD BE INSTALLED AND MAINTAINED UNTIL THE SWALE/DITCH/CHANNEL/WATERWAY IS RESTORED AND STABILIZED.

FLOWING WATER SHALL BE PROPERLY HANDLED WHERE UTILITY LINES CROSS STREAMS OR WETLANDS.

RECOMMENDED SEED MIXTURES								
MIXTURE NUMBER	SPECIES	SEEDING RATE PER ACRE						
	SPECIES	MOST SITES	ADVERSE SITES					
2	BIRDSFOOT, PLUS	6 LB.	10 LB.					
5	TALL FESCUE	30 LB.	35 LB.					
	TALL FESCUE	50 LD.	55 LD.					

SOILAMENDMENT		PERMANEN	T SEEDING APPLICA	NOTES	
SOIL AIVILIN		PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES
					OR AS PER SOIL TEST; MAY
AGRICULTUR	AL LIME	7.5 TONS	300 LB.	3,100 LB.	NOT BE REQUIRED IN
					AGRICULTURAL FIELDS
					OR AS PER SOIL TEST; MAY
10-10-20 FEF	RTILIZER	1,000 LB.	25 LB.	210 LB.	NOT BE REQUIRED IN
					AGRICULTURAL FIELDS

3. CHANNEL AND STREAM BANK STABILIZATION

ADEQUATE STREAM BANK STABILIZATION SHALL BE PROVIDED AT ALL LOCATIONS WHERE STREAM BANKS ARE DISTURBED. THE STREAM BANK STABILIZATION SHALL BE DESIGNED TO WITHSTAND THE ANTICIPATED WATER FLOW VELOCITIES OR THE MAXIMUM ANTICIPATED SHEAR STRESS.

ALL EXISTING SWALES/DITCHES/CHANNELS OR WATERWAYS TO BE DISTURBED SHALL BE STABILIZED TO WITHSTAND ANTICIPATED WATER FLOW VELOCITIES OR MAXIMUM ANTICIPATED SHEAR STRESS WHEN THEY ARE REOPENED.

PROPOSED DITCHES AND CHANNELS SHALL BE PROVIDED WITH ADEQUATE STABILIZATION TO WITHSTAND DESIGN FLOW VELOCITIES OR MAXIMUM SHEAR STRESS WHEN THEY ARE INSTALLED.

4. PERMANENT STABILIZATION

UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION [SECTION 102.22(A)]. THE INSTALLATION OF PAVEMENT, ROCK RIP RAP OR GABIONS ARE SOME EXAMPLES OF STABILIZATION.

THE STANDARD FOR VEGETATIVE COVER AS STABILIZATION IS PERENNIAL VEGETATION THAT IS ESTABLISHED WITH A UNIFORM COVERAGE OR DENSITY OF 70% ACROSS THE DISTURBED AREA. THE APPLICATION OF LIME, FERTILIZER, SEED, AND MULCH IS USUALLY DONE TO ACHIEVE PERMANENT STABILIZATION.

5. INTERIM STABILIZATION

TEMPORARY SEEDING WITH MULCH COVER FOR INTERIM STABILIZATION IS A TYPE OF BMP THAT CAN USUALLY BE PROVIDED WHERE THE EARTH DISTURBANCE ACTIVITY TEMPORARILY CEASES. THE INSTALLATION OF AN EROSION CONTROL BLANKET OR APPLICATION OF MULCH UPON SEEDED AREAS ARE BOTH CONSIDERED TO BE INTERIM STABILIZATION BMP'S TO PROTECT THE SEEDED AREA UNTIL VEGETATION IS ESTABLISHED.

6. SLOPE BREAKERS/ WATERBARS

TEMPORARY SLOPE BREAKERS/WATERBARS SHALL BE INSTALLED ACROSS DISTURBED AREAS (ACCESS ROAD, ETC.) OF THE UTILITY LINE RIGHT-OF-WAY ON ALL SLOPES GREATER THAN 5% TO COLLECT THE RUNOFF FROM DISTURBED AREAS AND TO DISCHARGE THIS RUNOFF TO WELL VEGETATED AREAS FOR REMOVAL OF SEDIMENT (SEE WATERBAR DETAIL). SPACING OF TEMPORARY SLOPE BREAKERS/WATERBARS SHALL BE DETERMINED BASED ON FIELD CONDITIONS.

IN CONJUNCTION WITH FINAL GRADING, PERMANENT SLOPE BREAKERS/WATERBARS SHALL BE INSTALLED WHEN FINAL GRADING ACTIVITIES ARE TAKING PLACE IN THE RIGHT-OF-WAY. WATERBARS SHALL BE INSTALLED ON ALL SLOPES GREATER THAN 5% AS SHOWN ON THE DRAWINGS. PERMANENT WATERBARS SHALL DISCHARGE RUNOFF TO WELL VEGETATED AREAS (SEE WATERBAR DETAIL).

7. SOLIDS SEPARATION

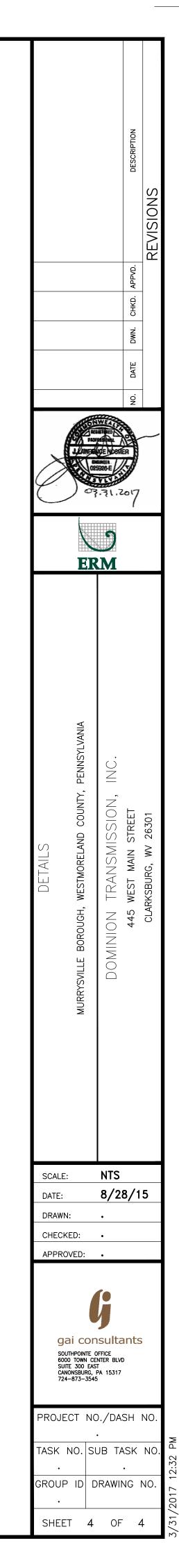
STRAW BALE BARRIERS, ROCK FILTER OUTLETS, AND FILTER SOCKS ARE EXAMPLES OF SUITABLE SOLID SEPARATION BMP'S. THESE DEVICES FUNCTION BY FILTERING SEDIMENT FROM RUNOFF OR BY REDUCING THE VELOCITY OF RUNOFF.

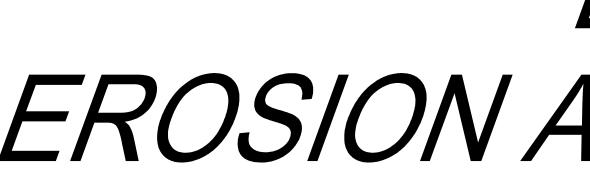
FILTER BAGS MAY BE USED AS SUITABLE SOLID SEPARATION BMP TO FILTER MUDDY WATER FROM TRENCHES OR EXCAVATIONS.

MULCH TYPE	APF	PLICATION RATE (M	NOTES	
WOLCHTTPL	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES
				EITHER WHEAT OR OAT
	3 TONS	14010	1 24010	STRAW, FREE OF WEEDS,
STRAW	510113	140 LB.	1,240 LB.	NOT CHOPPED OR FINELY
				BROKEN
				TIMOTHY, MIXED CLOVER
HAY	3 TONS	140 LB.	1,240 LB.	AND TIMOTHY OR OTHER
				NATIVE FORAGE GRASSES
				MAY PREVENT
WOOD CHIPS	4 - 6 TONS	185 - 275 LB	1,650 - 2,500 LB.	GERMINATION OF GRASSES
				AND LEGUMES
HYDROMULCH	1 TON	47 LB.	415 LB.	SEE NOTE 1

NOTES

1. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB./ACRE AT MINIMUM.





Contains Critical Energy Infrastructure Information - Filed Separately

LAUNCHER MP0-636 EROSION AND SEDIMENT CONTROL PLAN

DOMINION TRANSMISSION, INC CLARKSBURG, WEST VIRGINIA

MARCH 2017

PREPARED FOR DOMINION TRANSMISSION, INC

PREPARED BY



ERM CONSULTING & ENGINEERING, INC.

Hartford Office 860-466-8500

DRAWING INDEX

- COVER SHEET
- 01 EROSION AND SEDIMENT CONTROL PLAN 02 DETAILS

RECOMMENDED SEED MIXTURES							
MIXTURE NUMBER	SPECIES	SEEDING RATE PER ACRE					
	SPECIES	MOST SITES	ADVERSE SITES				
2	BIRDSFOOT, PLUS	6 LB.	10 LB.				
5	TALL FESCUE	30 LB.	35 LB.				

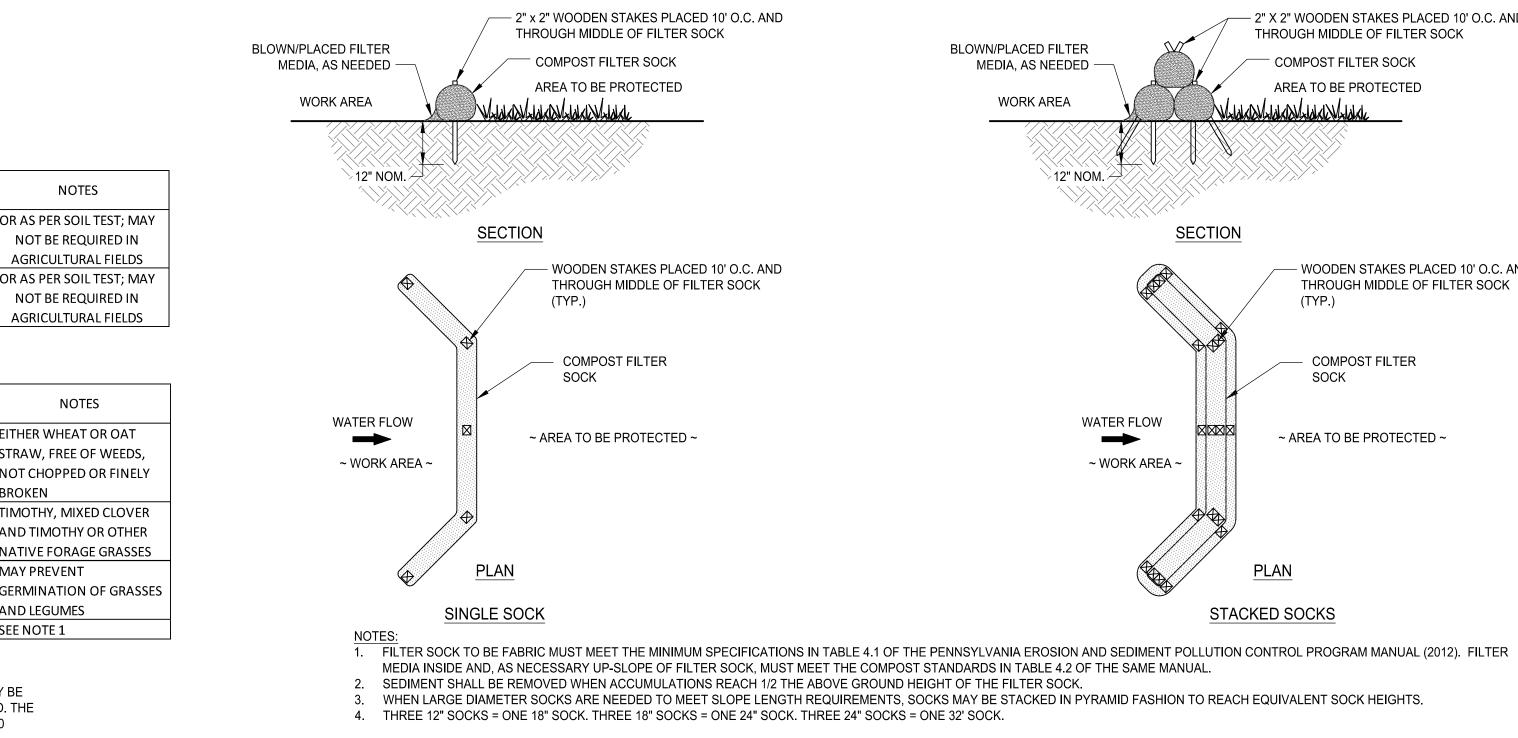
SOILAMENDMENT	PERMANENT SEEDING APPLICATION RATE				
SOIL AIVIEIN DIVIEIN I	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.		
				OR	
AGRICULTURAL LIME	7.5 TONS	300 LB.	3,100 LB.		
				ļ	
				OR	
10-10-20 FERTILIZER	1,000 LB.	25 LB.	210 LB.		

MULCH TYPE	APF	IN.)	NC	
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NC
				EITHER WHEA
		14010	1 2401 0	STRAW, FREE
STRAW	3 TONS	140 LB.	1,240 LB.	NOT CHOPPE
				BROKEN
				ΤΙΜΟΤΗΥ, ΜΙ
HAY	3 TONS	140 LB.	1,240 LB.	AND TIMOTH
				NATIVE FORA
				MAY PREVEN
WOOD CHIPS	4 - 6 TONS	185 - 275 LB	1,650 - 2,500 LB.	GERMINATIO
				AND LEGUME
HYDROMULCH	1 TON	47 LB.	415 LB.	SEE NOTE 1

NOTES:

1. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB./ACRE AT MINIMUM.

SEEDING TABELS



COMPOST FILTER SOCK DETAIL N.T.S.

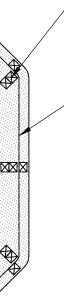
OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS

EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES MAY PREVENT GERMINATION OF GRASSES

AND LEGUMES

- 2" X 2" WOODEN STAKES PLACED 10' O.C. AND THROUGH MIDDLE OF FILTER SOCK - COMPOST FILTER SOCK AREA TO BE PROTECTED Malaka Malaka Malaka Malaka

SECTION



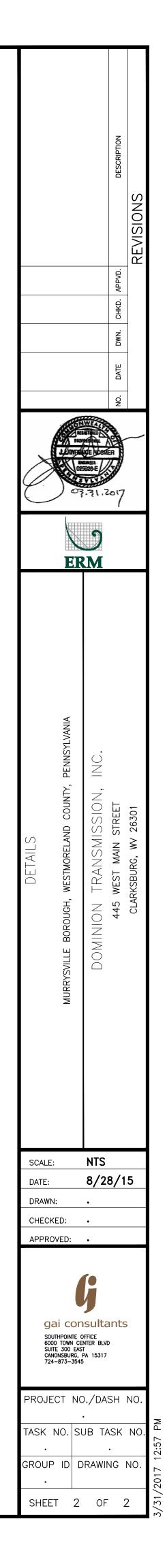
- WOODEN STAKES PLACED 10' O.C. AND THROUGH MIDDLE OF FILTER SOCK (TYP.)

COMPOST FILTER SOCK

~ AREA TO BE PROTECTED ~

PLAN

STACKED SOCKS



DOMINION TRANSMISSION, INC. SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX B – SOIL REPORT



USDA United States Department of Agriculture



Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Westmoreland County, Pennsylvania

SHP PA Full Route



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http:// offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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GuF—Gilpin-Upshur complex, 25 to 75 percent slopes	
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GyB—Guernsey silt loam, 3 to 8 percent slopes	
GyC—Guernsey silt loam, 8 to 15 percent slopes	
GyD—Guernsey silt loam, 15 to 25 percent slopes	
Lo-Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	
LwB—Lowell silty clay loam, 3 to 8 percent slopes	
LwC—Lowell silty clay loam, 8 to 15 percent slopes, eroded	
ShF—Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes	
UcB—Upshur silty clay loam, 3 to 8 percent slopes	
VaC—Vandergrift silt loam, 8 to 15 percent slopes	
WrB—Wharton silt loam, 3 to 8 percent slopes	
WrC—Wharton silt loam, 8 to 15 percent slopes	
WrD—Wharton silt loam, 15 to 25 percent slopes	
eferences	
	-

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soillandscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

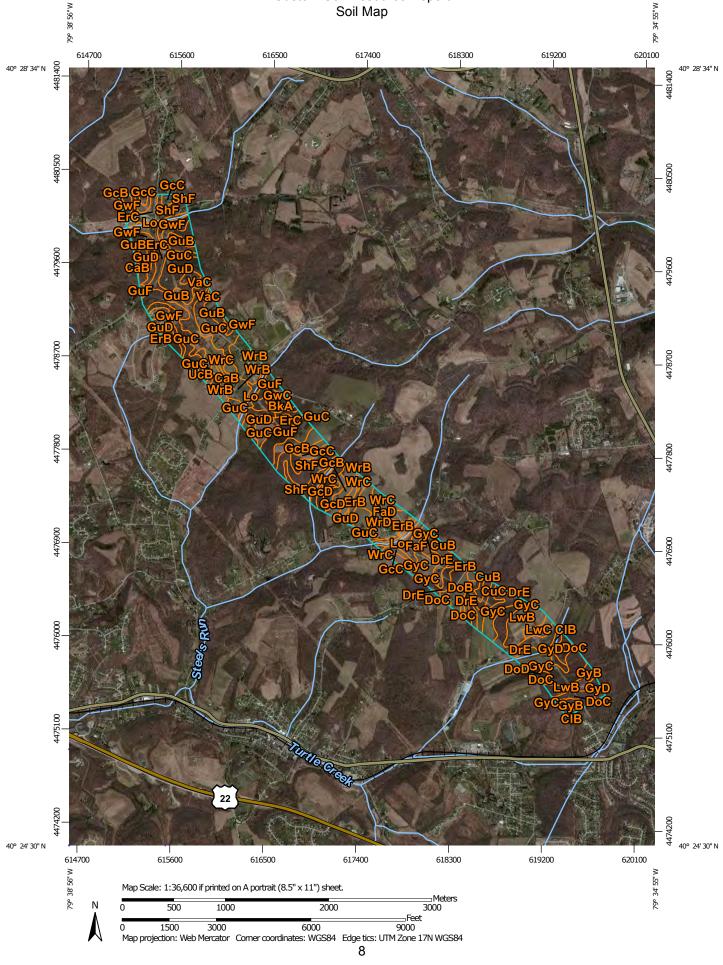
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report



	MAP LEGEND			MAP INFORMATION
Soils Soils Soils S S Special Poi S Special Poi B S C C C C C C C C C C C C C	est (AOI) rea of Interest (AOI) oil Map Unit Polygons oil Map Unit Lines oil Map Unit Points	EGEND	Spoil Area Stony Spot Very Stony Spot Wet Spot Other Special Line Features Streams and Canals stion Rails Interstate Highways US Routes Major Roads Local Roads	
 ○ P ✓ R + S ∴ S ⇒ S ⇒ S ⇒ S 	erennial Water ock Outcrop aline Spot andy Spot everely Eroded Spot inkhole lide or Slip odic Spot			Date(s) aerial images were photographed: Data not available. 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

Westmoreland County, Pennsylvania (PA129)						
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI			
BkA	Brinkerton silt loam, 0 to 3 percent slopes	8.3	1.0%			
СаВ	Cavode silt loam, 3 to 8 percent slopes	5.2	0.6%			
CIB	Clarksburg silt loam, 3 to 8 percent slopes	17.2	2.0%			
CuB	Culleoka channery silt loam, 3 to 8 percent slopes	4.6	0.5%			
CuC	Culleoka channery silt loam, 8 to 15 percent slopes	2.8	0.3%			
DoB	Dormont silt loam, 3 to 8 percent slopes	17.2	2.0%			
DoC	Dormont silt loam, 8 to 15 percent slopes	11.6	1.4%			
DoD	Dormont silt loam, 15 to 25 percent slopes	3.0	0.4%			
DrE	Dormont-Culleoka complex, 25 to 50 percent slopes	53.0	6.2%			
ErB	Ernest silt loam, 3 to 8 percent slopes	26.0	3.1%			
ErC	Ernest silt loam, 8 to 15 percent slopes	56.3	6.6%			
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	9.6	1.1%			
FaF	Fairpoint very channery silt loam, 25 to 75 percent slopes	19.9	2.3%			
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	28.2	3.3%			
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	41.7	4.9%			
GcD	Gilpin channery silt loam, 15 to 25 percent slopes	9.9	1.2%			
GuB	Gilpin-Upshur complex, 3 to 8 percent slopes	16.8	2.0%			
GuC	Gilpin-Upshur complex, 8 to 15 percent slopes	67.9	8.0%			
GuD	Gilpin-Upshur complex, 15 to 25 percent slopes	70.9	8.3%			
GuF	Gilpin-Upshur complex, 25 to 75 percent slopes	25.8	3.0%			
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	8.3	1.0%			
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	5.0	0.6%			

Westmoreland County, Pennsylvania (PA129)						
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI			
GwF	Gilpin-Weikert channery silt loams, 25 to 60 percent slopes	43.0	5.0%			
GуB	Guernsey silt loam, 3 to 8 percent slopes	10.1	1.2%			
GyC	Guernsey silt loam, 8 to 15 percent slopes	66.1	7.8%			
GyD	Guernsey silt loam, 15 to 25 percent slopes	15.2	1.8%			
Lo	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	20.7	2.4%			
LwB	Lowell silty clay loam, 3 to 8 percent slopes	32.7	3.8%			
LwC	Lowell silty clay loam, 8 to 15 percent slopes, eroded	7.2	0.8%			
ShF	Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes	32.0	3.8%			
UcB	Upshur silty clay loam, 3 to 8 percent slopes	1.6	0.2%			
VaC	Vandergrift silt loam, 8 to 15 percent slopes	3.3	0.4%			
WrB	Wharton silt loam, 3 to 8 percent slopes	18.8	2.2%			
WrC	Wharton silt loam, 8 to 15 percent slopes	84.3	9.9%			
WrD	Wharton silt loam, 15 to 25 percent slopes	7.3	0.9%			
Totals for Area of Interest		851.6	100.0%			

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Westmoreland County, Pennsylvania

BkA—Brinkerton silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: I8px Elevation: 900 to 1,800 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Brinkerton and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brinkerton

Setting

Landform: Draws, hills Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Head slope, base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Parent material: Acid fine-silty colluvium derived from shale and siltstone

Typical profile

Ap - 0 to 8 inches: silt loam Btg - 8 to 21 inches: silty clay loam Btgx - 21 to 42 inches: silt loam BC - 42 to 65 inches: channery silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 15 to 30 inches to fragipan
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.33 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: C/D

Minor Components

Ernest

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Head slope Down-slope shape: Concave Across-slope shape: Concave

Lobdell

Percent of map unit: 5 percent Landform: Flood plains Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear

CaB—Cavode silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 18s4 Elevation: 1,000 to 1,700 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Cavode and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Cavode

Setting

Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear, concave Across-slope shape: Concave Parent material: Acid clayey residuum weathered from clayey shale

Typical profile

Ap - 0 to 10 inches: silt loam Btg - 10 to 47 inches: silty clay loam BCg - 47 to 57 inches: channery silt loam R - 57 to 61 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 40 to 90 inches to lithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None

Frequency of ponding: None *Available water storage in profile:* Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: C/D

Minor Components

Gilpin

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear

Brinkerton

Percent of map unit: 5 percent Landform: Draws, hills Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Head slope, base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave

CIB—Clarksburg silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t31k Elevation: 660 to 1,470 feet Mean annual precipitation: 37 to 49 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 168 to 201 days Farmland classification: All areas are prime farmland

Map Unit Composition

Clarksburg and similar soils: 88 percent *Minor components:* 12 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Clarksburg

Setting

Landform: Hillslopes Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave Across-slope shape: Linear Parent material: Fine-loamy colluvium derived from limestone, sandstone, and shale

Typical profile

- Ap 0 to 9 inches: silt loam
- BE 9 to 12 inches: silt loam
- Bt1 12 to 23 inches: silty clay loam
- Bt2 23 to 28 inches: silty clay loam
- Btx 28 to 48 inches: silty clay loam
- BC 48 to 65 inches: gravelly silty clay loam
- C 65 to 110 inches: silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 24 to 37 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 16 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D

Minor Components

Dormont

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Concave Across-slope shape: Linear

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, summit, shoulder, footslope Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Concave Across-slope shape: Linear

Melvin

Percent of map unit: 2 percent Landform: Flood plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip Down-slope shape: Concave Across-slope shape: Concave

CuB—Culleoka channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2s5gm Elevation: 720 to 1,610 feet Mean annual precipitation: 37 to 48 inches Mean annual air temperature: 49 to 53 degrees F Frost-free period: 173 to 206 days Farmland classification: All areas are prime farmland

Map Unit Composition

Culleoka and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Culleoka

Setting

Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex Parent material: Fine-loamy residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 10 inches: channery silt loam Bt - 10 to 19 inches: channery silt loam BC - 19 to 26 inches: very channery silt loam C - 26 to 31 inches: very channery silt loam R - 31 to 41 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: B

Minor Components

Dormont

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Convex, linear

Lowell

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex

CuC—Culleoka channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2s5gn Elevation: 720 to 1,610 feet Mean annual precipitation: 37 to 48 inches Mean annual air temperature: 49 to 53 degrees F Frost-free period: 173 to 206 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Culleoka and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Culleoka

Setting

Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex Parent material: Fine-loamy residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 10 inches: channery silt loam Bt - 10 to 19 inches: channery silt loam BC - 19 to 26 inches: very channery silt loam C - 26 to 31 inches: very channery silt loam R - 31 to 41 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: B

Minor Components

Dormont

Percent of map unit: 15 percent Landform: Hills Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Convex, linear

Lowell

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex

DoB-Dormont silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2s5gj Elevation: 800 to 1,540 feet Mean annual precipitation: 37 to 47 inches Mean annual air temperature: 48 to 52 degrees F Frost-free period: 173 to 197 days Farmland classification: All areas are prime farmland

Map Unit Composition

Dormont and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills

Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Concave, linear Parent material: Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loam Bt1 - 11 to 21 inches: silt loam

Bt2 - 21 to 31 inches: silty clay loam

Bt3 - 31 to 46 inches: channery silty clay loam

Bt4 - 46 to 62 inches: channery silty clay loam

BC - 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: D

Minor Components

Culleoka

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

Lowell

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Concave, linear Across-slope shape: Concave

DoC—Dormont silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2s5gh Elevation: 800 to 1,540 feet Mean annual precipitation: 37 to 47 inches Mean annual air temperature: 48 to 52 degrees F Frost-free period: 173 to 197 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Dormont and similar soils: 70 percent Minor components: 30 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Concave, linear Parent material: Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loam

Bt1 - 11 to 21 inches: silt loam

Bt2 - 21 to 31 inches: silty clay loam

- Bt3 31 to 46 inches: channery silty clay loam
- Bt4 46 to 62 inches: channery silty clay loam
- BC 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e Hydrologic Soil Group: D

Minor Components

Culleoka

Percent of map unit: 15 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

Lowell

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

DoD—Dormont silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2s5gk Elevation: 800 to 1,540 feet Mean annual precipitation: 36 to 50 inches Mean annual air temperature: 46 to 57 degrees F Frost-free period: 120 to 200 days Farmland classification: Not prime farmland

Map Unit Composition

Dormont and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Concave, linear

Parent material: Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loam

Bt1 - 11 to 21 inches: silt loam

Bt2 - 21 to 31 inches: silty clay loam

Bt3 - 31 to 46 inches: channery silty clay loam

Bt4 - 46 to 62 inches: channery silty clay loam

BC - 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D

Minor Components

Culleoka

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

Fluvaquents

Percent of map unit: 5 percent Landform: Flood plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Linear

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

Lowell

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex

DrE—Dormont-Culleoka complex, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2s5gz Elevation: 800 to 1,300 feet Mean annual precipitation: 36 to 50 inches Mean annual air temperature: 46 to 57 degrees F Frost-free period: 120 to 200 days Farmland classification: Not prime farmland

Map Unit Composition

Dormont and similar soils: 50 percent Culleoka and similar soils: 35 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope, head slope, nose slope Down-slope shape: Linear Across-slope shape: Linear, concave Parent material: Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loam Bt1 - 11 to 21 inches: silt loam Bt2 - 21 to 31 inches: silty clay loam Bt3 - 31 to 46 inches: channery silty clay loam Bt4 - 46 to 62 inches: channery silty clay loam BC - 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: D

Description of Culleoka

Setting

Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope, nose slope, head slope Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Fine-loamy residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 10 inches: channery silt loam Bt - 10 to 19 inches: channery silt loam BC - 19 to 26 inches: very channery silt loam C - 26 to 31 inches: very channery silt loam R - 31 to 41 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: B

Minor Components

Lowell

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope, head slope, nose slope Down-slope shape: Convex, linear Across-slope shape: Linear, convex

Guernsey

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

Fluvaquents

Percent of map unit: 5 percent Landform: Flood plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Linear

ErB—Ernest silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 18q1 Elevation: 900 to 1,800 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Ernest and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Ernest

Setting

Landform: Hillslopes Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Head slope Down-slope shape: Concave Across-slope shape: Concave Parent material: Acid fine-loamy colluvium derived from shale and siltstone

Typical profile

Ap - 0 to 8 inches: silt loam Bt - 8 to 24 inches: silty clay loam Btx - 24 to 50 inches: channery silt loam C - 50 to 74 inches: channery silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.33 in/hr)
Depth to water table: About 17 to 22 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D

Minor Components

Brinkerton

Percent of map unit: 5 percent Landform: Draws, hills Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Head slope, base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Gilpin

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear

Lobdell

Percent of map unit: 5 percent Landform: Flood plains Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear

ErC—Ernest silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: I8qm Elevation: 900 to 1,800 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Ernest and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Ernest

Setting

Landform: Hillslopes

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave Parent material: Acid fine-loamy colluvium derived from shale and siltstone

Typical profile

Ap - 0 to 8 inches: silt loam Bt - 8 to 24 inches: silty clay loam Btx - 24 to 50 inches: channery silt loam C - 50 to 74 inches: channery silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.33 in/hr)
Depth to water table: About 17 to 22 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D

Minor Components

Lobdell

Percent of map unit: 5 percent Landform: Flood plains Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear

Brinkerton

Percent of map unit: 5 percent Landform: Draws, hills Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Head slope, base slope Down-slope shape: Linear, concave Across-slope shape: Linear, concave

Gilpin

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear, convex

FaD—Fairpoint very channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: lq10 Elevation: 800 to 2,800 feet Mean annual precipitation: 36 to 54 inches Mean annual air temperature: 37 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint, unstable fill, and similar soils: 90 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Fairpoint, Unstable Fill

Setting

Landform position (two-dimensional): Backslope Down-slope shape: Concave Across-slope shape: Concave, linear Parent material: Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: very channery silt loam C - 9 to 75 inches: very channery clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 6e Hydrologic Soil Group: C

Minor Components

Culleoka

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex

Guernsey

Percent of map unit: 4 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

Wet spots

Percent of map unit: 1 percent Landform: Depressions Down-slope shape: Concave Across-slope shape: Concave

FaF—Fairpoint very channery silt loam, 25 to 75 percent slopes

Map Unit Setting

National map unit symbol: lq0z Elevation: 700 to 1,500 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint, unstable fill, and similar soils: 90 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Fairpoint, Unstable Fill

Setting

Landform: Plateaus Landform position (two-dimensional): Backslope Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale

Typical profile

A - 0 to 2 inches: very channery silt loam C - 2 to 75 inches: very channery clay loam

Properties and qualities

Slope: 25 to 75 percent *Depth to restrictive feature:* More than 80 inches Natural drainage class: Well drained Runoff class: High Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: C

Minor Components

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

Culleoka

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex

GcB—Gilpin channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t1kt Elevation: 870 to 2,720 feet Mean annual precipitation: 40 to 53 inches Mean annual air temperature: 47 to 52 degrees F Frost-free period: 167 to 179 days Farmland classification: All areas are prime farmland

Map Unit Composition

Gilpin and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam *Bt - 8 to 24 inches:* channery silt loam *C - 24 to 30 inches:* extremely channery loam *R - 30 to 40 inches:* bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C

Minor Components

Wharton

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

Weikert

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex

GcC—Gilpin channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t1kw *Elevation:* 800 to 3,090 feet

Mean annual precipitation: 40 to 62 inches Mean annual air temperature: 46 to 53 degrees F Frost-free period: 166 to 181 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Gilpin and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam Bt - 8 to 24 inches: channery silt loam C - 24 to 30 inches: extremely channery loam R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C

Minor Components

Wharton

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

Weikert

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Nose slope *Down-slope shape:* Convex *Across-slope shape:* Convex

GcD—Gilpin channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2t1kv Elevation: 790 to 3,120 feet Mean annual precipitation: 39 to 61 inches Mean annual air temperature: 46 to 53 degrees F Frost-free period: 161 to 181 days Farmland classification: Not prime farmland

Map Unit Composition

Gilpin and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilpin

Setting

Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam Bt - 8 to 24 inches: channery silt loam C - 24 to 30 inches: extremely channery loam R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C

Minor Components

Weikert

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex

Wharton

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

GuB—Gilpin-Upshur complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t1lq Elevation: 790 to 2,190 feet Mean annual precipitation: 37 to 50 inches Mean annual air temperature: 49 to 52 degrees F Frost-free period: 152 to 176 days Farmland classification: All areas are prime farmland

Map Unit Composition

Gilpin and similar soils: 50 percent *Upshur and similar soils:* 30 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Ridges Landform position (two-dimensional): Shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam *Bt - 8 to 24 inches:* channery silt loam *C - 24 to 30 inches:* extremely channery loam *R - 30 to 40 inches:* bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C

Description of Upshur

Setting

Landform: Ridges Landform position (two-dimensional): Shoulder, backslope, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear, convex Across-slope shape: Linear Parent material: Residuum weathered from clayey shale and/or residuum weathered from mudstone

Typical profile

Ap - 0 to 6 inches: silty clay loamBt1 - 6 to 9 inches: silty clayBt2 - 9 to 25 inches: silty clayBt3 - 25 to 35 inches: silty clayBCt - 35 to 40 inches: parachannery silty clay loamC - 40 to 50 inches: very parachannery silty clay loamCr - 50 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 42 to 84 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: D

Minor Components

Wharton

Percent of map unit: 20 percent

Custom Soil Resource Report

Landform: Ridges Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear, concave Across-slope shape: Linear

GuC—Gilpin-Upshur complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t1lr Elevation: 760 to 2,270 feet Mean annual precipitation: 37 to 50 inches Mean annual air temperature: 49 to 52 degrees F Frost-free period: 152 to 176 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Gilpin and similar soils: 50 percent *Upshur and similar soils:* 30 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Ridges Landform position (two-dimensional): Shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam
Bt - 8 to 24 inches: channery silt loam
C - 24 to 30 inches: extremely channery loam
R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C

Description of Upshur

Setting

Landform: Ridges Landform position (two-dimensional): Shoulder, backslope, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear, convex Across-slope shape: Linear Parent material: Residuum weathered from clayey shale and/or residuum weathered from mudstone

Typical profile

Ap - 0 to 6 inches: silty clay loam Bt1 - 6 to 9 inches: silty clay Bt2 - 9 to 25 inches: silty clay Bt3 - 25 to 35 inches: silty clay BCt - 35 to 40 inches: parachannery silty clay loam C - 40 to 50 inches: very parachannery silty clay loam Cr - 50 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 42 to 84 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D

Minor Components

Wharton

Percent of map unit: 20 percent Landform: Ridges Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Linear, concave Across-slope shape: Linear

GuD—Gilpin-Upshur complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2t1ls Elevation: 740 to 2,270 feet Mean annual precipitation: 37 to 50 inches Mean annual air temperature: 47 to 51 degrees F Frost-free period: 152 to 176 days Farmland classification: Not prime farmland

Map Unit Composition

Gilpin and similar soils: 50 percent *Upshur and similar soils:* 30 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Hillslopes Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam

Bt - 8 to 24 inches: channery silt loam

C - 24 to 30 inches: extremely channery loam

R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 30 to 36 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C

Description of Upshur

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope, head slope, nose slope Down-slope shape: Linear, convex Across-slope shape: Linear Parent material: Residuum weathered from clayey shale and/or residuum weathered from mudstone

Typical profile

Ap - 0 to 6 inches: silty clay loam Bt1 - 6 to 9 inches: silty clay Bt2 - 9 to 25 inches: silty clay Bt3 - 25 to 35 inches: silty clay BCt - 35 to 40 inches: parachannery silty clay loam C - 40 to 50 inches: very parachannery silty clay loam Cr - 50 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 42 to 84 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 6e Hydrologic Soil Group: D

Minor Components

Wharton

Percent of map unit: 20 percent Landform: Hillslopes Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear, concave Across-slope shape: Linear

GuF—Gilpin-Upshur complex, 25 to 75 percent slopes

Map Unit Setting

National map unit symbol: I8rq Elevation: 800 to 2,500 feet Mean annual precipitation: 35 to 54 inches Mean annual air temperature: 37 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Gilpin and similar soils: 45 percent *Upshur and similar soils:* 35 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Oi - 0 to 0 inches: slightly decomposed plant material

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 6 inches: channery silt loam

Bt - 6 to 24 inches: channery silt loam

- C 24 to 30 inches: very channery loam
- R 30 to 35 inches: bedrock

Properties and qualities

Slope: 25 to 75 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Description of Upshur

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Oi - 0 to 0 inches: slightly decomposed plant material

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: silty clay loam

Bt - 8 to 46 inches: clay

C - 46 to 56 inches: channery clay

R - 56 to 68 inches: bedrock

Properties and qualities

Slope: 25 to 75 percent
Depth to restrictive feature: 40 to 70 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: C

Minor Components

Wharton

Percent of map unit: 20 percent Landform: Hillsides or mountainsides Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Linear

GwB—Gilpin-Weikert channery silt loams, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 18p8 Elevation: 800 to 1,700 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Gilpin and similar soils: 60 percent *Weikert and similar soils:* 30 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest Down-slope shape: Convex, linear Across-slope shape: Convex Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam Bt - 8 to 24 inches: channery silt loam C - 24 to 30 inches: very channery loam R - 30 to 35 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C

Description of Weikert

Setting

Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Acid loamy residuum weathered from shale and siltstone

Typical profile

A - 0 to 5 inches: channery silt loam
Bw - 5 to 15 inches: very channery silt loam
C - 15 to 18 inches: extremely channery silt loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3s Hydrologic Soil Group: D

Minor Components

Wharton

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

GwC—Gilpin-Weikert channery silt loams, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: I8p9 Elevation: 800 to 1,800 feet Mean annual precipitation: 36 to 46 inches *Mean annual air temperature:* 41 to 62 degrees F *Frost-free period:* 130 to 160 days *Farmland classification:* Farmland of statewide importance

Map Unit Composition

Gilpin and similar soils: 50 percent *Weikert and similar soils:* 40 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Gilpin

Setting

Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Crest Down-slope shape: Linear Across-slope shape: Linear, convex Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 8 inches: channery silt loam Bt - 8 to 24 inches: channery silt loam C - 24 to 30 inches: very channery loam R - 30 to 35 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C

Description of Weikert

Setting

Landform: Hillslopes Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Acid loamy residuum weathered from shale and siltstone

Typical profile

A - 0 to 5 inches: channery silt loam Bw - 5 to 15 inches: very channery silt loam C - 15 to 18 inches: extremely channery silt loam R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3s Hydrologic Soil Group: D

Minor Components

Wharton

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Concave

Ernest

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave

GwF—Gilpin-Weikert channery silt loams, 25 to 60 percent slopes

Map Unit Setting

National map unit symbol: I8q3 Elevation: 800 to 1,700 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Gilpin and similar soils: 60 percent *Weikert and similar soils:* 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilpin

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Oe - 1 to 2 inches: moderately decomposed plant material

A - 2 to 8 inches: channery silt loam

Bt - 8 to 24 inches: channery silt loam

C - 24 to 30 inches: very channery loam

R - 30 to 35 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: C

Description of Weikert

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Nose slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Acid loamy residuum weathered from shale and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 5 inches: channery silt loam

Bw - 5 to 15 inches: very channery silt loam

C - 15 to 18 inches: extremely channery silt loam

R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 25 to 65 percent Depth to restrictive feature: 10 to 20 inches to lithic bedrock Natural drainage class: Well drained Runoff class: Medium Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D

Minor Components

Shelocta

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Linear, convex

Wharton

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear

GyB—Guernsey silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 18qy Elevation: 800 to 1,300 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: All areas are prime farmland

Map Unit Composition

Guernsey and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Guernsey

Setting

Landform: Hills Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Concave Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 7 inches: silt loam Bt - 7 to 27 inches: silty clay loam Btg - 27 to 47 inches: clay Cg - 47 to 56 inches: silty clay R - 56 to 63 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 50 to 75 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 17 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D

Minor Components

Lowell

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear

Culleoka

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

GyC—Guernsey silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: I8qz Elevation: 800 to 1,300 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Guernsey and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Guernsey

Setting

Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 7 inches: silt loam Bt - 7 to 27 inches: silty clay loam Btg - 27 to 47 inches: clay Cg - 47 to 56 inches: silty clay R - 56 to 63 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 50 to 75 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 17 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D

Minor Components

Lowell

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear, convex

Culleoka

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex

GyD—Guernsey silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: I8r0 Elevation: 800 to 1,300 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Guernsey and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Guernsey

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 7 inches: silt loam Bt - 7 to 27 inches: silty clay loam Btg - 27 to 47 inches: clay Cg - 47 to 56 inches: channery silty clay R - 56 to 63 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 50 to 75 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 17 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C/D

Minor Components

Culleoka

Percent of map unit: 15 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex

Lowell

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear, convex

Lo—Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2t326 Elevation: 520 to 1,430 feet Mean annual precipitation: 39 to 44 inches Mean annual air temperature: 49 to 53 degrees F Frost-free period: 167 to 191 days Farmland classification: All areas are prime farmland

Map Unit Composition

Lobdell and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lobdell

Setting

Landform: Flood plains Down-slope shape: Linear Across-slope shape: Linear Parent material: Fine-loamy alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 6 inches: silt loam Bw1 - 6 to 20 inches: loam Bw2 - 20 to 38 inches: loam C - 38 to 65 inches: stratified loam to silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 16 to 30 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D

Minor Components

Holly

Percent of map unit: 5 percent Landform: Flood plains Down-slope shape: Concave Across-slope shape: Concave Other vegetative classification: Wetlands (W3)

Orrville

Percent of map unit: 5 percent Landform: Flood plains Down-slope shape: Linear Across-slope shape: Concave Other vegetative classification: Moist Loams (ML3)

Melvin

Percent of map unit: 5 percent Landform: Backswamps Down-slope shape: Concave Across-slope shape: Concave Other vegetative classification: Wetlands (W3)

LwB—Lowell silty clay loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 18r2 Elevation: 800 to 1,300 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: All areas are prime farmland

Map Unit Composition

Lowell and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lowell

Setting

Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 10 inches: silty clay loam

- *Bt 10 to 46 inches:* clay
- C 46 to 59 inches: silty clay
- R 59 to 69 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 30 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C

Minor Components

Guernsey

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Base slope Down-slope shape: Linear, concave Across-slope shape: Concave

Culleoka

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

LwC—Lowell silty clay loam, 8 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2s5gt Elevation: 830 to 1,340 feet Mean annual precipitation: 38 to 46 inches Mean annual air temperature: 49 to 55 degrees F Frost-free period: 175 to 195 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Lowell and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lowell

Setting

Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 10 inches: silty clay loam Bt - 10 to 46 inches: silty clay C - 46 to 59 inches: silty clay R - 59 to 69 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 41 to 80 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C

Minor Components

Culleoka

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex

Guernsey

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave

ShF—Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes

Map Unit Setting

National map unit symbol: 18qt Elevation: 480 to 3,000 feet Mean annual precipitation: 30 to 65 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 120 to 180 days Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 50 percent Gilpin and similar soils: 40 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Linear, convex Parent material: Acid fine-loamy colluvium derived from sandstone and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material *Oe - 1 to 2 inches:* moderately decomposed plant material *A - 2 to 8 inches:* channery silt loam *Bt1 - 8 to 14 inches:* channery silt loam *Bt2 - 14 to 40 inches:* channery silt loam *C - 40 to 80 inches:* very channery loam

Properties and qualities

Slope: 25 to 75 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: B

Description of Gilpin

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Acid fine-loamy residuum weathered from shale and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

- Oe 1 to 2 inches: moderately decomposed plant material
- A 2 to 8 inches: channery silt loam

Bt - 8 to 24 inches: channery silt loam

- C 24 to 30 inches: very channery loam
- R 30 to 35 inches: bedrock

Properties and qualities

Slope: 25 to 75 percent *Depth to restrictive feature:* 20 to 40 inches to lithic bedrock *Natural drainage class:* Well drained Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: C

Minor Components

Ernest

Percent of map unit: 8 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Concave

Rock outcrop

Percent of map unit: 2 percent

UcB—Upshur silty clay loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: I8rk Elevation: 800 to 1,700 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: All areas are prime farmland

Map Unit Composition

Upshur and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Upshur

Setting

Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex, linear Across-slope shape: Convex Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 8 inches: silty clay loam

- Bt 8 to 46 inches: clay
- C 46 to 56 inches: channery clay
- R 56 to 68 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 40 to 70 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C

Minor Components

Gilpin

Percent of map unit: 15 percent Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex, linear

Wharton

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

VaC—Vandergrift silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 18p6 Elevation: 800 to 1,700 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Vandergrift and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vandergrift

Setting

Landform: Hillslopes Landform position (two-dimensional): Footslope, backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave Parent material: Clayey colluvium derived from limestone and shale

Typical profile

Ap - 0 to 9 inches: silty clay loam Bt - 9 to 56 inches: silty clay C - 56 to 66 inches: channery silty clay loam R - 66 to 71 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 80 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D

Minor Components

Gilpin

Percent of map unit: 15 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear, convex

Upshur

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex, linear Across-slope shape: Convex

WrB—Wharton silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t185 Elevation: 760 to 2,860 feet Mean annual precipitation: 37 to 57 inches Mean annual air temperature: 46 to 53 degrees F Frost-free period: 158 to 205 days Farmland classification: All areas are prime farmland

Map Unit Composition

Wharton and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Wharton

Setting

Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Parent material: Fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 9 inches: silt loam Bt1 - 9 to 16 inches: silt loam Bt2 - 16 to 22 inches: silt loam Bt3 - 22 to 31 inches: silt loam BC - 31 to 46 inches: silty clay loam C - 46 to 69 inches: channery silty clay loam Cr - 69 to 79 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 40 to 71 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 16 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D

Minor Components

Cavode

Percent of map unit: 8 percent Landform: Hills Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Linear

Gilpin

Percent of map unit: 7 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear

Brinkerton

Percent of map unit: 5 percent Landform: Depressions on hillslopes Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave, linear Across-slope shape: Concave, linear

WrC—Wharton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t5mm Elevation: 620 to 2,160 feet Mean annual precipitation: 37 to 51 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 161 to 205 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Wharton and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Wharton

Setting

Landform: Hills Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear Parent material: Fine-loamy residuum weathered from shale and siltstone

Typical profile

- Ap 0 to 9 inches: silt loam
- Bt1 9 to 16 inches: silt loam
- Bt2 16 to 22 inches: silt loam
- Bt3 22 to 31 inches: silt loam
- BC 31 to 46 inches: silty clay loam
- C 46 to 69 inches: channery silty clay loam
- Cr 69 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 71 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 16 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D

Minor Components

Gilpin

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear

Ernest

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave

Rarden

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Linear

WrD—Wharton silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2t5mn Elevation: 520 to 1,890 feet Mean annual precipitation: 37 to 51 inches Mean annual air temperature: 47 to 54 degrees F Frost-free period: 163 to 207 days Farmland classification: Not prime farmland

Map Unit Composition

Wharton and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Wharton

Setting

Landform: Hills Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 9 inches: silt loam Bt1 - 9 to 16 inches: silt loam Bt2 - 16 to 22 inches: silt loam Bt3 - 22 to 31 inches: silt loam BC - 31 to 46 inches: silty clay loam C - 46 to 69 inches: channery silty clay loam Cr - 69 to 79 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 40 to 71 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 16 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C/D

Minor Components

Gilpin

Percent of map unit: 8 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Linear

Ernest

Percent of map unit: 7 percent Landform: Hillslopes Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave

Rarden

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Linear

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United States Department of Agriculture



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Custom Soil Resource Report for Westmoreland County, Pennsylvania

SHP - Salem Township Workspace



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

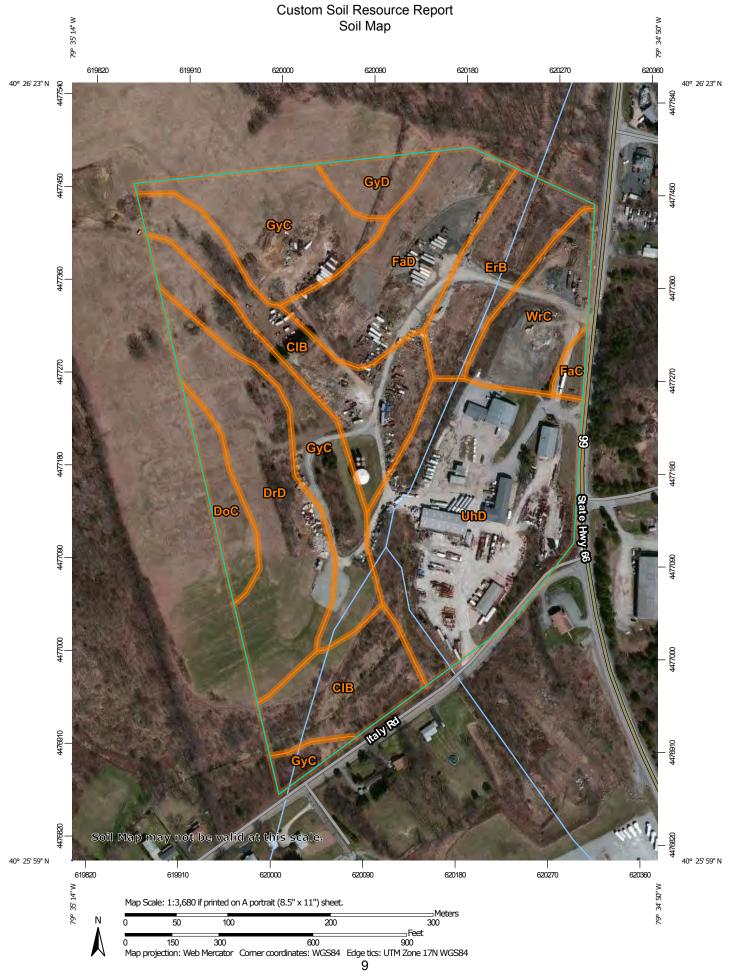
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



)	MAP INFORMATION			
Area of Interest (AOI)	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.			
Soils Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points Special Point Features	Stony Spot Very Stony Spot Wet Spot Other Special Line Features	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			
•	Water Features Streams and Canals	contrasting soils that could have been shown at a more detailed scale.			
Clay Spot	rtation Rails	Please rely on the bar scale on each map sheet for map measurements.			
Closed Depression Gravel Pit Gravelly Spot	Interstate Highways US Routes Major Roads	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)			
Landfill Lava Flow Backgro Marsh or swamp	Local Roads	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			
Mine or Quarry Miscellaneous Water Perennial Water		accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified da of the version date(s) listed below.			
Rock Outcrop Saline Spot		Soil Survey Area: Westmoreland County, Pennsylvania Survey Area Data: Version 10, Sep 19, 2016			
 Sandy Spot Severely Eroded Spot Sinkhole 		Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.			
 Sinkhole Slide or Slip Sodic Spot 		Date(s) aerial images were photographed: Data not available. The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background			

Map Unit Legend

Westmoreland County, Pennsylvania (PA129)						
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI			
CIB	Clarksburg silt loam, 3 to 8 percent slopes	7.8	16.4%			
DoC	Dormont silt loam, 8 to 15 percent slopes	1.4	2.9%			
DrD	Dormont-Culleoka complex, 15 to 25 percent slopes	6.3	13.3%			
ErB	Ernest silt loam, 3 to 8 percent slopes	3.2	6.7%			
FaC	Fairpoint very channery silt loam, 8 to 15 percent slopes	0.3	0.7%			
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	5.1	10.7%			
GyC	Guernsey silt loam, 8 to 15 percent slopes	8.6	18.2%			
GyD	Guernsey silt loam, 15 to 25 percent slopes	1.1	2.3%			
UhD	Urban land-Guernsey complex, 8 to 25 percent slopes	10.6	22.4%			
WrC	Wharton silt loam, 8 to 15 percent slopes	3.0	6.3%			
Totals for Area of Interest		47.4	100.0%			

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Custom Soil Resource Report

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Westmoreland County, Pennsylvania

CIB—Clarksburg silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t31k Elevation: 660 to 1,470 feet Mean annual precipitation: 37 to 49 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 168 to 201 days Farmland classification: All areas are prime farmland

Map Unit Composition

Clarksburg and similar soils: 88 percent *Minor components:* 12 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Clarksburg

Setting

Landform: Hillslopes Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave Across-slope shape: Linear Parent material: Fine-loamy colluvium derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam BE - 9 to 12 inches: silt loam Bt1 - 12 to 23 inches: silty clay loam Bt2 - 23 to 28 inches: silty clay loam Btx - 28 to 48 inches: silty clay loam BC - 48 to 65 inches: gravelly silty clay loam C - 65 to 110 inches: silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 24 to 37 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 16 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Dormont

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, footslope Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Melvin

Percent of map unit: 2 percent Landform: Flood plains Down-slope shape: Concave, linear Across-slope shape: Concave, linear Hydric soil rating: Yes

DoC—Dormont silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2s5gh Elevation: 800 to 1,540 feet Mean annual precipitation: 37 to 47 inches Mean annual air temperature: 48 to 52 degrees F Frost-free period: 173 to 197 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Dormont and similar soils: 70 percent Minor components: 30 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Linear Across-slope shape: Concave, linear *Parent material:* Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loamBt1 - 11 to 21 inches: silt loamBt2 - 21 to 31 inches: silty clay loamBt3 - 31 to 46 inches: channery silty clay loamBt4 - 46 to 62 inches: channery silty clay loamBC - 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: D Hydric soil rating: No

Minor Components

Culleoka

Percent of map unit: 15 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

Lowell

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Side slope, interfluve Down-slope shape: Convex Across-slope shape: Linear, convex Hydric soil rating: No

Guernsey

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope, head slope Down-slope shape: Concave, linear Across-slope shape: Linear, concave Hydric soil rating: No

DrD—Dormont-Culleoka complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2s5gy Elevation: 200 to 1,300 feet Mean annual precipitation: 32 to 48 inches Mean annual air temperature: 48 to 55 degrees F Frost-free period: 120 to 200 days Farmland classification: Not prime farmland

Map Unit Composition

Dormont and similar soils: 45 percent Culleoka and similar soils: 37 percent Minor components: 18 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dormont

Setting

Landform: Hills Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Nose slope, side slope, head slope Down-slope shape: Linear Across-slope shape: Linear, concave Parent material: Fine-loamy residuum weathered from limestone, sandstone, and shale

Typical profile

Ap - 0 to 11 inches: silt loam Bt1 - 11 to 21 inches: silt loam Bt2 - 21 to 31 inches: silty clay loam Bt3 - 31 to 46 inches: channery silty clay loam Bt4 - 46 to 62 inches: channery silty clay loam BC - 62 to 75 inches: channery silty clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.66 in/hr)
Depth to water table: About 24 to 44 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Hydric soil rating: No

Description of Culleoka

Setting

Landform: Hills Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Side slope, nose slope, head slope Down-slope shape: Convex Across-slope shape: Convex, linear Parent material: Fine-loamy residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 10 inches: channery silt loam Bt - 10 to 19 inches: channery silt loam BC - 19 to 26 inches: very channery silt loam C - 26 to 31 inches: very channery silt loam R - 31 to 41 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: B Hydric soil rating: No

Minor Components

Lowell

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope, head slope, nose slope Down-slope shape: Convex Across-slope shape: Linear, convex Hydric soil rating: No

Guernsey

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope, head slope Down-slope shape: Concave, linear Across-slope shape: Concave Hydric soil rating: No

Thorndale

Percent of map unit: 3 percent

Custom Soil Resource Report

Landform: Depressions, drainageways Landform position (two-dimensional): Footslope Landform position (three-dimensional): Head slope, base slope Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

ErB—Ernest silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t32b Elevation: 690 to 2,230 feet Mean annual precipitation: 37 to 55 inches Mean annual air temperature: 47 to 52 degrees F Frost-free period: 155 to 191 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Ernest and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Ernest

Setting

Landform: Hillslopes Landform position (two-dimensional): Footslope, toeslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave, linear Across-slope shape: Concave Parent material: Fine-loamy colluvium derived from sedimentary rock

Typical profile

Ap - 0 to 8 inches: silt loam Bt1 - 8 to 15 inches: silt loam Bt2 - 15 to 24 inches: silt loam Btx1 - 24 to 36 inches: channery silt loam Btx2 - 36 to 50 inches: channery silt loam C - 50 to 74 inches: channery silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 23 to 28 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 15 to 22 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Gilpin

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, footslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex, linear Hydric soil rating: No

Buchanan

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave, linear Across-slope shape: Concave Hydric soil rating: No

Brinkerton

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave Across-slope shape: Concave Other vegetative classification: Wetlands (W3) Hydric soil rating: Yes

FaC—Fairpoint very channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: lq11 Elevation: 800 to 2,800 feet Mean annual precipitation: 36 to 54 inches Mean annual air temperature: 37 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint, unstable fill, and similar soils: 90 percent *Minor components:* 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairpoint, Unstable Fill

Setting

Landform position (two-dimensional): Backslope Down-slope shape: Linear, concave Across-slope shape: Concave, linear Parent material: Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: very channery silt loam C - 9 to 75 inches: very channery clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4s Hydrologic Soil Group: C Hydric soil rating: No

Minor Components

Culleoka

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder, summit Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

Guernsey

Percent of map unit: 4 percent Landform: Hillslopes Landform position (two-dimensional): Summit, backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave Hydric soil rating: No

Aquents

Percent of map unit: 1 percent Landform: Depressions Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

FaD—Fairpoint very channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: lq10 Elevation: 800 to 2,800 feet Mean annual precipitation: 36 to 54 inches Mean annual air temperature: 37 to 62 degrees F Frost-free period: 130 to 160 days Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint, unstable fill, and similar soils: 90 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Fairpoint, Unstable Fill

Setting

Landform position (two-dimensional): Backslope Down-slope shape: Concave Across-slope shape: Concave, linear Parent material: Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: very channery silt loam *C - 9 to 75 inches:* very channery clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 6e Hydrologic Soil Group: C Hydric soil rating: No

Minor Components

Culleoka

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

Guernsey

Percent of map unit: 4 percent Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Concave, linear Across-slope shape: Concave Hydric soil rating: No

Aquents

Percent of map unit: 1 percent Landform: Depressions Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

GyC—Guernsey silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t32f Elevation: 600 to 1,880 feet Mean annual precipitation: 37 to 49 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 165 to 205 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Guernsey and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Guernsey

Setting

Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Interfluve, crest, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear *Parent material:* Colluvium derived from limestone and shale over residuum weathered from limestone and shale

Typical profile

Ap - 0 to 8 inches: silt loam BE - 8 to 15 inches: silt loam Bt1 - 15 to 22 inches: silty clay loam Bt2 - 22 to 37 inches: silty clay Btg - 37 to 54 inches: silty clay loam 2C - 54 to 60 inches: channery silt loam 2Cr - 60 to 70 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 59 to 62 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 16 to 23 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Coshocton

Percent of map unit: 5 percent Landform: Ridges Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Westmoreland

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Berks

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

GyD—Guernsey silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2t32g Elevation: 670 to 2,510 feet Mean annual precipitation: 37 to 52 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 165 to 205 days Farmland classification: Not prime farmland

Map Unit Composition

Guernsey and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Guernsey

Setting

Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Parent material: Colluvium derived from limestone and shale over residuum weathered from limestone and shale

Typical profile

Ap - 0 to 8 inches: silt loam BE - 8 to 15 inches: silt loam Bt1 - 15 to 22 inches: silty clay loam Bt2 - 22 to 37 inches: silty clay Btg - 37 to 54 inches: silty clay loam 2C - 54 to 60 inches: channery silt loam 2Cr - 60 to 70 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 59 to 62 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 16 to 23 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C/D

Hydric soil rating: No

Minor Components

Culleoka

Percent of map unit: 10 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Berks

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Westmoreland

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit, backslope, shoulder Landform position (three-dimensional): Crest, interfluve, side slope, head slope Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

UhD—Urban land-Guernsey complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: Iq3s Elevation: 800 to 1,200 feet Mean annual precipitation: 36 to 46 inches Mean annual air temperature: 41 to 62 degrees F Frost-free period: 130 to 170 days Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent *Guernsey and similar soils:* 40 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Urban Land

Setting

Down-slope shape: Linear *Across-slope shape:* Linear

Parent material: Pavement, buildings and other artifically covered areas human transported material

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8s Hydric soil rating: No

Description of Guernsey

Setting

Landform: Hillslopes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Clayey residuum weathered from limestone and shale

Typical profile

Ap - 0 to 7 inches: silt loam Bt - 7 to 27 inches: silty clay loam Btg - 27 to 47 inches: clay Cg - 47 to 56 inches: channery silty clay R - 56 to 63 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 50 to 59 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C/D Hydric soil rating: No

WrC—Wharton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t5mm Elevation: 620 to 2,160 feet Mean annual precipitation: 37 to 51 inches Mean annual air temperature: 47 to 53 degrees F Frost-free period: 161 to 205 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Wharton and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Wharton

Setting

Landform: Hills Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear Parent material: Fine-loamy residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 9 inches: silt loam Bt1 - 9 to 16 inches: silt loam Bt2 - 16 to 22 inches: silt loam Bt3 - 22 to 31 inches: silt loam BC - 31 to 46 inches: silty clay loam C - 46 to 69 inches: channery silty clay loam Cr - 69 to 79 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 71 inches to paralithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 16 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Gilpin

Percent of map unit: 10 percent Landform: Hillslopes Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex, linear Hydric soil rating: No

Ernest

Percent of map unit: 5 percent Landform: Hillslopes Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: No

Rarden

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

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						Table	C-1			
		Calasta d Dha		ch		Supply Hea		Vielain elas Dusis se d	Westweenland Country	
			-		Percent		-	athin the Project A	Area, Westmoreland County	
Map Unit Symbol	Map Unit Name	Component Name	Component Percent	Low	High	Surface Texture ^a	Drainage Class ^b	Permeability ^c	Taxonomic Classification	Parent Material
BkA	Brinkerton silt loam, 0 to 3 percent slopes	Brinkerton	100	0	3	SIL	Р	М	Fine-silty, mixed, superactive, mesic Typic Fragiaqualfs	acid fine-silty colluvium derived from shale and siltstone
ClB	Clarksburg silt loam, 3 to 8 percent slopes	Clarksburg	100	3	8	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs	fine-loamy colluvium derived from limestone, sandstone, and shale
CuC	Culleoka channery silt loam, 8 to 15 percent slopes	Culleoka	100	8	15	CN-SIL	W	MR	Fine-loamy, mixed, active, mesic Ultic Hapludalfs	fine-loamy residuum weathered from sandstone and shale
DoB	Dormont silt loam, 3 to 8 percent slopes	Dormont	100	3	8	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs	fine-loamy residuum weathered from limestone, sandstone, and shale
DoC	Dormont silt loam, 8 to 15 percent slopes	Dormont	100	8	15	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs	fine-loamy residuum weathered from limestone, sandstone, and shale
DoE	Dormont silt loam, 25 to 35 percent slopes	Dormont	100	25	35	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs	fine-loamy residuum weathered from limestone, sandstone, and shale
DrE	Dormont-Culleoka complex, 25 to 50 percent slopes	Culleoka	44	25	50	CN-SIL	W	М	Fine-loamy, mixed, active, mesic Ultic Hapludalfs	fine-loamy residuum weathered from sandstone and shale
		Dormont	56	25	50	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs	fine-loamy residuum weathered from limestone, sandstone, and shale
ErB	Ernest silt loam, 3 to 8 percent slopes	Ernest	100	3	8	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Aquic Fragiudults	acid fine-loamy colluvium derived from shale and siltstone
ErC	Ernest silt loam, 8 to 15 percent slopes	Ernest	100	8	15	SIL	MW	М	Fine-loamy, mixed, superactive, mesic Aquic Fragiudults	acid fine-loamy colluvium derived from shale and siltstone
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	Fairpoint	100	0	8	CNV- SIL	W	MS	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents	Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale
FaC	Fairpoint very channery silt loam, 8 to 15 percent slopes	Fairpoint	100	8	15	CNV- SIL	W	MS	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents	Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale

						Table	C-1			
		Colooted Dhy	reical and Interne	ativa Ch	omootonisti	Supply Hea	5	lithin the Duciest	was Westmonolond County	
					Percent			athin the Project A	Area, Westmoreland County	
Map Unit Symbol	Map Unit Name	Component Name	Component Percent	Low	High	Surface Texture ^a	Drainage Class ^b	Permeability ^c	Taxonomic Classification	Parent Material
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	Fairpoint	100	15	25	CNV- SIL	W	MS	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents	Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale
FaF	Fairpoint very channery silt loam, 25 to 75 percent slopes	Fairpoint	100	25	75	CNV- SIL	W	MS	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents	Moderately acid to neutral loamy coal extraction mine spoil derived from limestone, sandstone, and shale
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Gilpin	100	3	8	CN-SIL	W	М	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Gilpin	100	8	15	CN-SIL	W	М	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GcD	Gilpin channery silt loam, 15 to 25 percent slopes	Gilpin	100	15	25	CN-SIL	W	М	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GuB	Gilpin-Upshur complex, 3 to 8 percent slopes	Upshur	44	3	8	SICL	W	MS	Fine, mixed, superactive, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale
		Gilpin	56	3	8	CN-SIL	W	MS	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GuC	Gilpin-Upshur complex, 8 to 15 percent slopes	Upshur	44	8	15	CN-SIL	W	М	Fine, mixed, superactive, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale
		Gilpin	56	8	15	CN-SIL	W	MS	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GuD	Gilpin-Upshur complex, 15 to 25 percent slopes	Upshur	44	15	25	SICL	W	Μ	Fine, mixed, superactive, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale
		Gilpin	56	15	25	CN-SIL	W	Μ	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GuF	Gilpin-Upshur complex, 25 to 75 percent slopes	Upshur	44	25	75	MPM	W	R	Fine, mixed, superactive, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale

						Table				
		Selected Phy	sical and Interp	etive Ch	aracteristic	Supply Hea	•	Vithin the Project A	area, Westmoreland County	
Map Unit		Component	Component		Percent	Surface	Drainage			
Symbol	Map Unit Name	Name	Percent	Low	High	Texture ^a	Class ^b	Permeability ^c	Taxonomic Classification	Parent Material
		Gilpin	56	25	75	CN-SIL	W	R	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GwF	Gilpin-Weikert channery silt loams, 25 to 60 percent slopes	Weikert	29	25	65	SPM	W	R	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts	acid loamy residuum weathered from shale and siltstone
		Gilpin	71	25	60	SPM	W	R	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
GyB	Guernsey silt loam, 3 to 8 percent slopes	Guernsey	100	3	8	SIL	MW	М	Fine, mixed, superactive, mesic Aquic Hapludalfs	clayey residuum weathered from limestone and shale
GyC	Guernsey silt loam, 8 to 15 percent slopes	Guernsey	100	8	15	SIL	MW	М	Fine, mixed, superactive, mesic Aquic Hapludalfs	clayey residuum weathered from limestone and shale
GyD	Guernsey silt loam, 15 to 25 percent slopes	Guernsey	100	15	25	SIL	MW	М	Fine, mixed, superactive, mesic Aquic Hapludalfs	clayey residuum weathered from limestone and shale
LIB	Library silt loam, 0 to 8 percent slopes	Library	100	0	8	SIL	SP	М	Fine, mixed, active, mesic Aeric Endoaqualfs	clayey residuum weathered from limestone and shale
Lo	Lobdell silt loam, 0 to 2 percent slopes	Lobdell	100	0	2	SIL	MW	М	Fine-loamy, mixed, active, mesic Fluvaquentic Eutrudepts	recent loamy alluvium derived from sandstone and shale
LwB	Lowell silty clay loam, 3 to 8 percent slopes	Lowell	100	3	8	SICL	W	М	Fine, mixed, active, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale
LwC	Lowell silty clay loam, 8 to 15 percent slopes, eroded	Lowell	100	8	15	SICL	W	М	Fine, mixed, active, mesic Typic Hapludalfs	clayey residuum weathered from limestone and shale
ShF	Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes	Gilpin	44	25	75	SPM	W	R	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
		Shelocta	56	25	75	SPM	W	R	Fine-loamy, mixed, active, mesic Typic Hapludults	acid fine-loamy colluvium derived from sandstone and siltstone
UhD	Urban land-Guernsey complex, 8 to 25 percent slopes	Guernsey	40	8	25	SIL	MW	М	Fine, mixed, superactive, mesic Aquic Hapludalfs	clayey residuum weathered from limestone and shale

						Table	C-1			
						Supply Hea	5			
		Selected Phy	sical and Interpr			es of the Soil	Map Units W	ithin the Project A	rea, Westmoreland County	
Map Unit		Component	Component	Slope	Percent	Surface	Drainage			
Symbol	Map Unit Name	Name	Percent	Low	High	Texture ^a	Class ⁶	Permeability ^c	Taxonomic Classification	Parent Material
		Urban land	60	8	25	SIL	MW	М	N/A	pavement, buildings and other artifically covered areas human transported material
UwD	Urban land-Wharton complex, 8 to 25 percent slopes	Wharton	40	8	25	SIL	MW	N/A	Fine-loamy, mixed, active, mesic Aquic Hapludults	acid fine-loamy residuum weathered from shale and siltstone
		Urban land	60	8	25	SIL	MW	М	N/A	pavement, buildings and other artifically covered areas human transported material
WrB	Wharton silt loam, 3 to 8 percent slopes	Wharton	100	3	8	SIL	MW	М	Fine-loamy, mixed, active, mesic Aquic Hapludults	fine-loamy residuum weathered from shale and siltstone
WrC	Wharton silt loam, 8 to 15 percent slopes	Wharton	100	8	15	SIL	MW	М	Fine-loamy, mixed, active, mesic Aquic Hapludults	fine-loamy residuum weathered from shale and siltstone
a	Surface textures include: c	channery silty loa	am (CN-SIL), v	ery chan	nery silty l	oam (CNV-	SIL), silty cla	y loam (SICL), silt	loam (SIL), and slightly decomp	osed plant material (SPM).
b	Drainage classes include:	5 5	. ,.	•	5 5					1
с	Permeability rates include:	rapid (R), mod	erately rapid (M	R), mode	rate (M), a	and moderate	ely slow (MS)).		

DOMINION TRANSMISSION, INC. SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX C – WETLAND AND WATERCOURSE REPORT



Supply Header Project Wetland and Waterbody Survey Report 1

Prepared by:



November 2016

Supply Header Project Wetland and Waterbody Survey Report 1

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APPENDICES

Appendix A We	tland Datasheets	and Photo Pages
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Appendix B Waterbody Datasheets and Photo Pages

ACRONYMS

ACPAtlantic Coast ProjectCFRCode of Federal RegulationsCOEU.S. Army Corps of EngineersD&DDuncan & Duncan West, LLCDTIDominion Transmission, Inc.EPAEnvironmental Protection AgencyERMEnvironmental Resources ManagementFACFacultative PlantsFACUFacultative Upland PlantsFACWFacultative Wetland PlantsGPSGlobal Positioning SystemNHDNational Hydrography DatasetNRCSNatural Resource Conservation ServiceNWINational Wetland Plant ListOBLObligate Plants
COEU.S. Army Corps of EngineersD&DDuncan & Duncan West, LLCDTIDominion Transmission, Inc.EPAEnvironmental Protection AgencyERMEnvironmental Resources ManagementFACFacultative PlantsFACUFacultative Upland PlantsFACWFacultative Wetland PlantsGPSGlobal Positioning SystemNHDNational Hydrography DatasetNRCSNatural Resource Conservation ServiceNWINational Wetland InventoryNWPLNational Wetland Plant ListOBLObligate Plants
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NWPLNational Wetland Plant ListOBLObligate Plants
OBL Obligate Plants
6
OUWM Ordinary High Water Mark
OHWM Ordinary High Water Mark
PEM Palustrine System Emergent Wetland Class
PFO Palustrine System Forested Wetland Class
PSS Palustrine System Scrub-Shrub Wetland Class
SHP Supply Header Project
TOB top of bank
UPL Uplands Plants
USDA U.S. Department of Agriculture
USFWS U.S. Fish and Wildlife Service
USGS U.S. Geological Survey

1.0 INTRODUCTION

Environmental Resources Management (ERM), on behalf of Dominion Transmission, Inc. (DTI), conducted wetland and waterbody surveys for the proposed Supply Header Project (SHP). Surveys were completed by contracted staff from Duncan & Duncan WEST, LLC (D&D) and ERM staff. This report presents results of the wetland and waterbody field surveys that were completed in Pennsylvania for the SHP. The survey area consists of a 300-foot-wide corridor approximately 3.9 miles in Pennsylvania and associated aboveground facilities (Figure 1). The survey corridor includes areas within the U.S. Army Corps of Engineers (COE) Pittsburgh District. This report will only include information regarding delineated resources within Commonwealth of Pennsylvania.

Wetland and waterbody surveys were conducted along the proposed mainline TL-636, JB Tonkin Compressor Station, Crayne Compressor Station, and all associated access roads, contractor yards, and impoundment areas. Westmoreland County in Pennsylvania was surveyed for TL-636 and JB Tonkin Compressor Station. Greene County in Pennsylvania was surveyed for Crayne Compressor Station. The field surveys were conducted from October 2014 to July 2015 and in September 2015 along the proposed pipeline routes. This report will specifically include the wetlands and waterbodies delineated within Pennsylvania. This report serves as the wetland and waterbody report to be submitted to the Federal Energy Regulatory Commission.

This report provides an assessment of wetlands, rivers, streams, open waterbodies (e.g., ponds), and seep points documented within the survey corridor based on qualified wetland biologists' best professional judgment and interpretation of the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual (COE, 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (COE, 2010), the COE Regulatory Guidance Letter regarding Ordinary High Water Mark Identification (COE, 2005), and other applicable COE guidance documents and regulations. The report also documents observations made at "non-water points" where desktop data indicated a wetland or waterbody may be present but upon field inspection requisite wetland parameters or discernable evidence of waterbody morphological characteristics were not present. The wetland and waterbody delineation report identifies delineated resources regulated under the 1972 Clean Water Act as Waters of the United States and under PA Code Title 25 Environmental Protection - Chapter 105 Dam Safety and Water Management as Regulated Waters of this Commonwealth at the proposed SHP area. Please refer to figures within the Chapter 105 Water Obstruction and Encroachment Permit application for relevant location information for the wetlands and waterbodies documented in the report. Specifically, Section 7 includes alignment sheets with aerial photography maps each with illustrated wetlands and waterbodies delineated during field surveys.

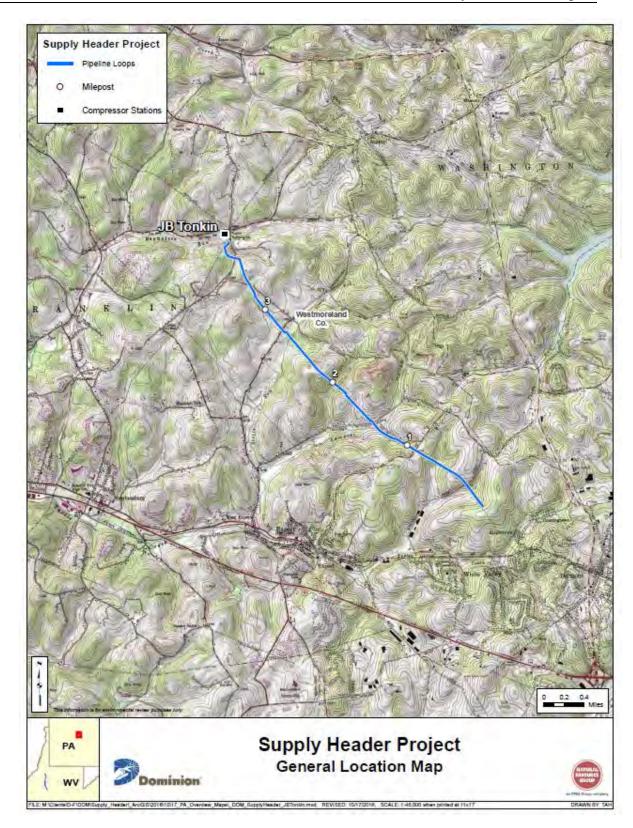


Figure 1 – Supply Header Project Map

2.0 METHODS

Prior to conducting field surveys, a review of high resolution aerial photographic resources and other desktop data (e.g., National Wetland Inventory, soils maps, USGS maps) was conducted prior to field surveys. These resources were used both prior to and during field surveys to identify potential wetland or waterbody areas that may be present within the survey corridor.

Field surveys for the proposed pipeline were conducted within a 300-foot-wide survey corridor and proposed access roads were conducted within a 50-foot-wide survey corridor. The survey area was evaluated to determine the presence of water features including wetlands, waterbodies (streams and open waterbodies), non-tidal ditches, and seep points. Data were also collected to document a lack of water features where desktop data indicated water features may be present; these are referred to as non-water points.

Accessible tracts within the survey corridor were evaluated to determine the presence or absence of water features, including wetlands, waterbodies (streams and open waterbodies), seep points, and non-water points. Specific naming conventions were followed during field surveys in order to catalog each feature type collected. Tables 2-1 and 2-2 describe the unique naming conventions for these features.

TABLE 2-1 Supply Header Project Wetland, Waterbody, Seep, and Non-Water Point Feature Naming Protocol								
Wetland	w (wetland)	county code	crew letter (e.g., a, b, c)	001, 002, 003,	f, e, s (PFO, PEM, PSS wetlands)			
Waterbody	s (stream) o (open waterbody)	county code	crew letter (e.g., a, b, c)	001, 002, 003,	p, i, e (change in stream morphology to perennial, intermittent, or ephemeral)			
Non-tidal Ditch	d (ditch)	county code	crew letter (e.g., a, b, c)	001, 002, 003,				
Seep	p (seep)	county code	crew letter (e.g., a, b, c)	001, 002, 003,				
Non-Water Point	no (non-water)	county code	crew letter (e.g., a, b, c)	001, 002, 003,				

2.1 DESKTOP REVIEW

Several sources of information were used to complete a "desktop" review of survey areas for potential wetlands and waterbodies prior to conducting field surveys. Biologists utilized high resolution aerial photography, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Department of Agriculture oil Survey Geographical Database, the USGS National Hydrography Dataset (NHD), and USGS Topographic Maps. The evaluation prior to field survey allowed crews to identify areas of high probability for wetlands or waterbodies in planning and preparation for field survey.

	Table 2-2	
	Supply Header Project Survey Corridor County Codes	
Facility Type/State	County	County Code
TL-636/JB Tonkin Compressor Station		
Pennsylvania	Westmoreland	wm

2.2 FIELD SURVEY

The field surveys for the SHP were conducted by D&D from October 2014 to July 2015 and by ERM in September 2015. Wetland boundaries, waterbody thalweg or banks, data collection points, open waterbody boundaries, seep points, and non-water points were surveyed using a Trimble® 6000 series GeoXH model global positioning system (GPS) unit. The field data collection settings within the GPS units used available satellites to capture location data. Note that while the GPS data collected during survey provides reasonably accurate spatial information regarding the wetlands, open waterbodies, seep points, and non-water points delineated, typically one-meter accuracy with sufficient satellite reception, it does not constitute the same accuracy as a professional land survey.

2.2.1 Wetlands

The delineation of wetlands was conducted using the method described in the 1987 Manual, along with either of the Regional Supplements. The wetland boundaries were delineated using the routine onsite determination method described in the Regional Supplements and utilizing *the National Wetland Plant List: 2014 (NWPL)* (Lichvar et al., 2012; Federal Register, 2012) for determination of plant indicator status, and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979) to classify wetlands. According to the COE 1987 Wetland Manual, three criteria or parameters are considered during a wetland delineation, and for a plant community to be considered a wetland it must have: a predominance of hydrophytic vegetation, indications of wetland hydrology, and the presence of hydric soils under normal circumstances (i.e., where naturally problematic conditions or disturbances are absent). Wetland data sheets were completed at sample points within each wetland community type (i.e., Cowardin classification) making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point.

2.2.1.1 Hydrophytic Vegetation

The 1987 Manual and NWPL defines the wetland indicator status of plants as follows:

- <u>Obligate Wetland Plants (OBL)</u>: almost always occur in wetlands (estimated probability >99 percent) in wetlands under natural conditions. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.
- <u>Facultative Wetland Plants (FACW)</u>: usually occur in wetlands (estimated probability >67 percent to 99 percent), but may occur in non-wetlands. These

plants predominantly occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.

- <u>Facultative Plants (FAC):</u> occur in wetlands and uplands (estimated probability 33 percent to 99 percent within wetlands). These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH and elevation. They have a wide tolerance of soil moisture conditions.
- <u>Facultative Upland Plants (FACU)</u>: usually occur in uplands, but many occur in wetlands (estimated probability 1 percent to <33 percent in wetlands). These plants predominantly occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
- <u>Upland Plants (UPL):</u> almost never occur in wetlands (estimated probability <1 percent). These plants occupy mesic to xeric upland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Dominant vegetation was assessed for each stratum present (tree, sapling/shrub, woody vine, and herbaceous) at a sample point location. In most cases, plant dominance was determined using the COE "50/20 Rule" in which species from each stratum that individually or collectively make up more than 50 percent of the total cover in each stratum, plus any other species that account for at least 20 percent of the total cover in the stratum are determined to be dominant species. The hydrophytic vegetation criterion is met when greater than 50 percent of the dominant plant species are classified as OBL, FACW, or FAC. Vegetation information was recorded on the appropriate COE data forms.

2.2.1.2 Wetland Hydrology

Hydrology is influenced by many variables, including: seasonal and long-term rainfall patterns, local geology, topography, soil type, local water table conditions, and drainage. According to the 1987 Manual and Regional Supplements, wetland hydrology is present if 14 or more consecutive days of inundation or water saturation within 12 inches of the soil surface occurs during the growing season at a minimum frequency of 5 years in 10.

Indicators of wetland hydrology provide evidence that a site has a persistent wetland hydrologic regime. The Regional Supplements both provide a list of hydrology indicators that include primary and secondary indicators, which are grouped as:

- Observation of Surface Water or Saturated Soils
- Evidence of Recent Inundation
- Evidence of Current and Recent Soil Saturation
- Evidence of Other Site Conditions or Data

One primary indicator or two secondary indicators are required to confirm that wetland hydrology is present or occurs at some time during the growing season. Field observations of hydrology were made at each vegetation community sample point. Examples of key indicators observed include presence of water above the ground surface, high water table within the hole dug for soil observations, saturated soil in the upper portion of the soil profile, water-stained leaves, drainage patterns as evidence of water presence, and the geomorphic position of the vegetation community and sample point location. Hydrology information was recorded on the appropriate COE data sheets.

2.2.1.3 Hydric Soils

The 1987 Manual defines hydric soils as soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

Hydric soils are characterized by specific morphological characteristics developed in the soil profile over time due to reduction of iron, manganese, and sulfur under saturated and anaerobic conditions (U.S. Department of Agriculture [USDA] Natural Resource Conservation Service [NRCS], 2010). The hydric soil indicators described in the Regional Supplements are a subset of hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 7.0 (2010).* The *Munsell Book of Soil Color Charts (2014)* was utilized to determine soil matrix and mottle colors (redoximorphic features) and record soil profile descriptions. The soils were observed and documented at representative sample point locations in both wetland communities and adjacent upland communities to help establish the wetland boundary. Soil profile descriptions were recorded on the appropriate COE data sheets.

2.2.1.4 Cowardin Classification

The Cowardin Classification was developed in 1979 to classify a variety of wetland habitats. The Cowardin Classification divides wetlands into five systems, including: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. These represent the five major landscape settings. The classification system further divides wetland communities into systems and classes. The 2014 and 2015 surveys were conducted in inland wetlands, and descriptions of the common Cowardin Classification community types are described in the bullets below.

- <u>Palustrine System Emergent Wetland Class (PEM)</u>: A PEM wetland is defined as a non-tidal wetland characterized by erect, rooted, hydrophytic herbaceous species. These wetland habitats are often dominated by perennial plants, where the vegetation is present for the majority of the growing season (Cowardin, 1979).
- <u>Palustrine Forested Wetland Class (PFO)</u>: A PFO wetland is defined as a nontidal wetland characterized by dominant woody vegetation that is greater than 20 feet tall, with an understory of small trees and shrubs, as well as an herbaceous layer (Cowardin, 1979).
- <u>Palustrine System Scrub-Shrub Wetland Class (PSS)</u>: A PSS wetland is defined as a non-tidal wetland consisting of woody vegetation that is less than 20 feet tall, including shrubs, young trees, and stunted trees or shrubs (Cowardin, 1979).

Each wetland delineated was assigned a Cowardin class. For wetland complexes, or wetlands that are comprised of more than one wetland plant community (i.e., Cowardin class) a sample point was established and observations recorded to document each community. Unique wetland IDs and separate polygons were established based on the wetland community present within the complex. The field crews in 2014 and 2015 collected wetland information for PEM, PFO, and PSS wetlands.

2.2.2 Waterbodies

Waterbodies documented during field survey were categorized as 1) linear or flowing waterbodies such as streams and rivers, and assigned a unique ID starting with an "s" or 2) non-flowing open waterbodies such as ponds and lakes which were assigned a unique ID starting with an "o". Linear or flowing waterbodies were identified as landscape features with a channel that include a bed and a bank in a concave landscape position where water flow has resulted in a feature that possesses an ordinary high water mark (OHWM). Based on evidence of flow regime at the time of survey linear waterbodies were attributed a flow regime, according to the definitions provided by the COE for the Nationwide Permit Program in Code of Federal Regulations (CFR) 33 Part 330 (Federal Register, 1993). Similarly non-flowing, open waterbody features were assigned a Cowardin hydrology regime based on observations recorded at the time of survey. Definitions of these flow regimes and hydrology regimes are included below.

2.2.2.1 Regime Classification

Water regime classification is defined by its flow duration. The following regime classifications are described below as defined by the CFR 33 Part 330 ruling:

- <u>Perennial Stream:</u> A perennial stream has flowing water year round during a typical year. The water table is located above the stream bed for most of the year, and groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
- <u>Intermittent Stream:</u> An intermittent stream has flowing water during most times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water, and runoff from rainfall is a supplemental source of water for stream flow.
- <u>Ephemeral Stream</u>: An ephemeral stream has flowing water only during and for a short duration after precipitation events. Ephemeral stream beds are located above the water table year round, therefore, groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Non-flowing or open waterbodies were documented based on the evidence of inundation/saturation at the time of surveys, utilizing one of four categories based on the USFWS's *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979) including the following:

- <u>Non-flowing:</u> Water covers the land surface throughout the year in all years.
- <u>Semi-Non-flowing:</u> Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface

- <u>Seasonally flooded</u>: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.
- <u>Temporarily flooded:</u> Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

2.2.3 Non-tidal Ditches

Field crews documented ditches that had an OHWM, bed and bank, and/or were connected to waters of the United States. Additionally, the ditches documented by the field review contained one or more of the following characteristics, in accordance with Draft Guidance provided by the Environmental Protection Agency (EPA, 2015):

- Standing or flowing water
- A link to two or more waters of the United States.
- Drain wetlands or waterbodies that can be linked to waters of the United States.
- Excavated within waters of the United States.
- A relocated, channelized, and/or straightened tributary

Ditches that exhibited wetland characteristics were classified as wetlands if they met the criteria specified in the Manual or applicable Regional Supplement.

2.2.4 Seep Points

Seep points are defined as small areas where groundwater saturates the soil surface on steep slopes or along sidehill cuts or banks. Seeps do not meet the definition of either a waterbody, due to lack of OHWM, top of bank (TOB), or a wetland, lacking the three wetland parameters (hydrology, vegetation, soils). One example of where a seep point would likely be found would be a road cut. Seep points were reviewed and documented on a case-by-case basis by wetland biologists. Where seep points were observed a GPS data point was taken along with corresponding photos of the area.

2.2.5 Non-Water Points

Non-water points were collected to document areas mapped as NWI polygons or NHD lines that did not meet the required criteria of wetlands or waterbodies (i.e., upland habitat). Observations were recorded, photographs were taken, and a GPS point was recorded at each nonwater point to document that wetland biologists visited the point and determined that a wetland or waterbody was not present. COE wetland delineation forms were used to record information for non-water points located within NWI wetlands polygons. Documentation of non-water points provides a record to demonstrate that areas mapped as NWI and NHD, or areas with an aerial photography signature indicative of wetland conditions, which from a desktop may be assumed to be aquatic, were visited by wetland biologists and determined to lack the requisite indicators of a wetland or waterbody.

3.0 RESULTS AND FINDINGS

The following sections present the results of water resources survey from October 2014 through July 2015 and in September 2015 on the SHP, including wetlands, waterbodies, seep points, and non-water points that were documented on accessible tracts within the SHP survey corridor. The workspace for Greene and Westmoreland Counties were surveyed to identify water resources; however, there were no water resources present in the Crayne Compressor Station workspace in Greene County, Pennsylvania. Therefore, the report only includes resources identified during the surveys in Westmoreland County, Pennsylvania. **Please note that only features, datasheets, and photos documenting water resources within the Commonwealth of Pennsylvania are included in this package.**

3.1 WETLANDS

A total of 12 wetlands have been documented within the survey corridor along the proposed pipeline route in Westmoreland County, Pennsylvania during the field season. A table listing the delineated wetlands is located in Table 3.1-1. Table 3.1-1 includes the state, county, unique project wetland ID, Cowardin classification, approximate milepost, latitude, and longitude. Datasheets and photo pages for each wetland and upland sample point are provided in Appendix A.

3.2 WATERBODIES

A total of 18 waterbodies have been documented within the survey corridor along the proposed pipeline route in Westmoreland County, Pennsylvania during the field season. A table listing delineated waterbodies is located in Table 3.2-1. Table 3.2-1 includes the state, county, unique project waterbody ID, USGS waterbody name, hydrologic regime, field estimated OHWM width (ft.), and field estimated bank-to-bank width (feet), approximate milepost, latitude, and longitude. Datasheets and photo pages for each waterbody sample point are provided in Appendix B.

3.3 NON-TIDAL DITCHES

No ditches were documented within the survey corridor along the proposed pipeline route.

3.4 SEEP POINTS

No seep points were documented within the survey corridor along the proposed pipeline route.

3.5 NON-WATER POINTS

No non-water points were documented within the survey corridor along the proposed pipeline route.

		TABLE 3.1-1		
		Supply Header Project Wetland Inventory		
Facility/State/County/ Approximate Milepost	Unique ID	Cowardin Classification	Latitude	Longitude
TL-636/JB Tonkin Compressor Station				
Pennsylvania				
Westmoreland				
N/A	wwmh005e	PEM	40.4623523262295	-79.6405387816610
N/A	wwmc001e	PEM	40.4248188478790	-79.5852955813219
0.2	wwmh012f	PFO	40.4253265676696	-79.5937998332657
0.6	wwmh001f	PFO	40.4294960198917	-79.6006394801935
0.7	wwmh001f	PFO	40.4296412578112	-79.6007430355412
1.2	wwmh002e	PEM	40.4330644395070	-79.6092591167805
1.3	wwmh002e	PEM	40.4341094348971	-79.6106072005217
1.9	wwmh007e	PEM	40.4408612173111	-79.6192503762113
2.6	wwmh003f	PFO	40.4478566206251	-79.6279818503258
2.9	wwmh008e	PEM	40.4504207257220	-79.6311135129026
2.9	wwmh009e	PEM	40.4510617698231	-79.6316585447007
3.2	wwmh010f	PFO	40.4532326030784	-79.6344216791762
3.6	wwmh011f	PFO	40.4594885736349	-79.6385750988932
3.8	wwmh006e	PEM	40.4609615939800	-79.6393562606762

			TABLE	3.2-1			
			Supply Head Waterbody				
Facility/State/ County/ Approximate Milepost	Unique ID	USGS Name	Hydrologic Regime	OHWM Width (feet)	Bank to Bank Width (feet)	Latitude	Longitude
TL-636/ JB Tonkin Compressor Station							
Pennsylvania							
Westmoreland							
0.2	swmh002	UNT to Turtle Creek	Perennial	5	7	40.4256194295263	-79.5938036878563
0.2	swmh001	UNT to Turtle Creek	Perennial	3	6	40.4246553849002	-79.5978463239672
0.5	swmh001	UNT to Turtle Creek	Perennial	3	6	40.4239428950187	-79.6016011497773
0.7	swmh003	UNT to Turtle Creek	Perennial	3	5	40.4296380136157	-79.6006253571047
1.2	swmh004	UNT to Kemerer Hollow	Perennial	4	8	40.4339717856692	-79.6105601276734
1.4	swmh005	Kemerer Hollow	Perennial	4	8	40.4346663145257	-79.6117141834835
1.7	swmh012	UNT to Kemerer Hollow	Perennial	1	10	40.4376884466757	-79.6162735163807
1.9	swmh013	UNT to Kemerer Hollow	Perennial	5	10	40.4408025125325	-79.6190444035428
2.5	swmh006	UNT to Steels Run	Perennial	4	8	40.4464247413319	-79.6262876179098
2.6	swmh007	Steels Run	Perennial	6	10	40.4480418510385	-79.6277784475133
2.6	owmh001	Unnamed pond	Perennial	na	na	40.4478735936819	-79.6276178052457
2.7	swmh008	UNT to Steels Run	Perennial	2	3	40.4488460016674	-79.6286836208999
2.9	swmh014	UNT to Steels Run	Perennial	4	8	40.4529233917312	-79.6339882048317
2.9	owmh002	Unnamed pond	Perennial	na	na	40.4510793541902	-79.6324995561128
3.3	swmh016	UNT to Steel's Run	Intermittent	2	4	40.4557676297418	-79.6350443216715
3.6	swmh015	UNT to Haymakers Run	Perennial	5	8	40.4593731937649	-79.6385927916215
3.8	swmh011	UNT to Haymakers Run	Perennial	3	8	40.4613229149341	-79.639525114389
N/A	swmh010	Haymakers Run	Perennial	9	15	40.4625279998542	-79.6393433785753
N/A	smwh009	UNT to Haymakers Run	Perennial	4	20	40.4625887449162	-79.639446227021

4.0 **REFERENCES**

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SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland and Waterbody Delineation Report

APPENDIX A

Wetland Datasheets and Photo Pages

TL-636

Westmoreland County

Pennsylvania

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region
Project/Site: DTJ Supply Heathe
Project/Site: <u>DTI Supply Heacher</u> City/County: <u>[]] Sampling Date: 11-14-14</u> Sampling Date: <u>11-14-14</u>
Applicant/Owner: Dom (him Investigator(s): DD (DEST
Landform (hillslope terrace etc.)
Subregion (LRP or MLPA): A Slope (%):
Investigator(s): <u>DDUEST</u> <u>Section</u> , Township, Range: <u>State: 144</u> Sampling Point: <u>DUMHCO</u> Landform (hillslope, terrace, etc.): <u>Depression</u> <u>Win</u> <u>Mescuplan</u> Subregion (LRR or MLRA): <u>N</u> <u>Lat: 40°27'44.43</u> Long: <u>79°38'25.92</u> <u>Datum: <u>W</u>65 84</u> Soil Map Unit Name: <u>Crnest</u>
Soil Map Unit Name: Crnest NWI classification: PEN
The simulate / Hydrologic conditions on the site typical for this time of year? Yes
Significantly disturbed?
Are vegetation, Soil, or Hydrology naturally problematic? (If needed and in the problematic res No
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.
Hydrophulia Venetric and a standard st
Hydrophytic Vegetation Present? Yes No Is the Sampled Area
Wetland Hydrology Drosputo
Remarks:
All the parameters present
v v v
۵.
HYDROLOGY
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required) Secondary Indicators (minimum of two required)
Surface Soil Cracks (B6)
High Water Table (A2)
X Saturati (as)
Water Marks (B1) Presence of Deduced km (A1)
Experiment Depusits (B2)
Thin Muck Surface (CT)
Inundation Visible on Aerial Imagery (B7)
Water-Stained Leaves (B9)
Aquatic Fauna (B13) Microtopographic Relief (D4) Field Observations: FAC-Neutral Test (D5)
Field Observations:
Surface Water Present? Yes No K Depth (inches)
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):
Saturation Present? Ves
(includes capillary fringe) Depth (inches): Sur hace Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
Augusta D
storogy preserve
Obvious de presenta la production pl Ordani
Hydrology present Obvious depressional area w/in floodplain

WWMH205e

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point:

Δ (Sampling Point:
Tree Stratum (Plot size: 30 ft)	Absolute		Indicator	Dominance Test worksheet:
1. Do ada and datis bacon	% Cover	Species?	<u>Status</u>	Number of Dominant Species /
2. Caragreedabo	· ····································			
3. Juchnes nigra	10	$\overline{}$	FACU	Total Number of Dominant
4			Licu	Species Across All Strata:
4 5	-			Porcent of Demine 1.2
5				Percent of Dominant Species That Are OBL, FACW, or FAC:
				(A/B
7				Prevalence Index worksheet:
	10			
500/ c	10 :	= Total Cove	er _	Total % Cover of: Multiply by:
50% of total cover: 5	20% of	total cover:	2	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 30)				FACW species
1. Liquestrum synense	in	/	F . 0. 1	FACW species x 2 =
2. Snlernign			FACI	
2	_10_		OBL	FACU species x 4 =
	,			UPL species x 5 =
5				Column Totals: (A) (B)
),	·			Prevalence Index = B/A =
5 7.				
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
),			·····	2 - Dominance Test is >50%
	20 -			3 - Prevalence Index is ≤3,0 ¹
ferb Stratum (Distance)	<u> </u>	Total Cove	^r / I	
lerb Stratum (Plot size: 0 dt	20% of t	otal cover:		4 - Morphological Adaptations' (Provide supporting
lerb Stratum (Plot size: 10 ft)				data in Remarks or on a separate sheet)
Typha lattolia	20		AR1	Problematic Hydrophytic Vegetation ¹ (Explain)
Mrex COMOSA	5		DBL	
	40	<u> </u>	and the second s	¹ Indiantara - Church to the
Miroschart	7	$\underline{\checkmark}$	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Microskycan Viminea	15	\sim	FAC	be present, unless disturbed or problematic.
Polygonum Sugiltutum	15	$\overline{}$	DBL	Definitions of Four Vegetation Strata:
			<u> </u>	Tree Woody planta availating to a to a
				Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
	10 10 10 10 10 10 10 10 10 10 10 10 10 1			height.
				Sapling/Shrub - Woody plants, excluding vines, less
D				and greater than or equal to 3.28 ft (1
1				m) tall.
	85			Horb All boshorson (
	<u>05</u> =	Total Cover		Herb - All herbaceous (non-woody) plants, regardless
50% of total cover: <u>42.5</u>	20% of tr	tal cover	17	of size, and woody plants less than 3.28 ft tall.
loody Vine Stratum (Plot size: 30 ft)			<u> </u>	Woody vine - All woody vines greater than 3.28 ft in
				height.
1 1				
- piùr c				
	-	•		
				Hydrophytic
		······		Vegetation (/
	=	Fotal Cover		P V
50% of total cover:	200/ of to			
emarks: (Include photo numbers here or on a second	ant)			
50% of total cover:	200/ of to	Fotal Cover tal cover:		

SOIL

WWMH005e_W Sampling Point:

Sami	olina	Point:	
Jann	oni ig	i oniù	

Profile Description: (Describe to the dep	oth needed to docu	ment the indicator	or confirm t	he absence of indi	cators)
Depth <u>Matrix</u> (inches) Color (moist) %	Red Color (moist)	ox Features			
<u>0-11 10412 4/2</u>	1 11 112 1 11	<u>% Type</u>		Texture	Remarks
1-16+ 10 YR 4/13	1.2	$\frac{210}{2}$	· · · · · · · · · · · · · · · · · · ·	LOMM	
	18 YR 4/6	<u>215 C</u>	_ <u>m_</u> _	<u>CLAY LC</u>	74712
		· ······			
		·			
					······
ype: C=Concentration, D=Depletion, RM	=Reduced Matrix M			2	
jarre een maloators,			airis.	Location: PL=Pore Indicators fo	Lining, M=Matrix. r Problematic Hydric Soils ³ :
_ Histosol (A1) _ Histic Epipedon (A2)	Dark Surfac			2 cm Mu	ck (A10) (MLRA 147)
Black Histic (A3)	Polyvalue B	elow Surface (S8) (MLRA 147, 1	48) Coast Pr	airie Redox (A16)
Hydrogen Sulfide (A4)	Loamv Glev	urface (S9) (MLRA ed Matrix (F2)	147, 148)	(MLRA	147, 148)
_ Stratified Layers (A5)	Depleted Ma	atrix (F3)		Pleamon	t Floodplain Soils (F19) A 136, 147)
_ 2 cm Muck (A10) (LRR N) _ Depleted Below Dark Surface (A11)	Redox Dark	Surface (F6)		Very Sha	llow Dark Surface (TF12)
 Thick Dark Surface (A12) 	Depleted Da Redox Depr	ark Surface (F7)			(plain in Remarks)
_ Sandy Mucky Mineral (S1) (LRR N,	Iron-Mangai	rese Masses (F12)			
MLRA 147, 148)	MLRA 1:	36)			
Sandy Gleyed Matrix (S4) Sandy Redox (S5)	Umbric Surf	ace (F13) (MLRA 1	36, 122)	³ Indicators	of hydrophytic vegetation and
_ Stripped Matrix (S6)	Piedmont Fl	oodplain Soils (F19) Material (F21) (MLF	(MLRA 148)	wetland hy	drology must be present,
estrictive Layer (if observed):			(A 127, 147)	unless dist	urbed or problematic.
Туре:					
Depth (inches):				Hydric Soil Presen	.t? Yes 🔨 No
emarks:		11			~
		Autore	soil	preser	X-
		5		p====	*

wwmh005e_w



Wetland data point wwmh005e_w facing east



Wetland data point wwmh005e_w facing south

WETLAND DETERMINATION DATA FORM	- Eastern Mountains and Piedmont Region
Project/Site: NT7 Supply Standard	- Lastern wountains and Pledmont Region
Applicant/Owner: Domencon	County: <u>Westmore/kind</u> Sampling Date: <u>11-14-14</u>
Investigator(a)	State: FAT Sampling Point: WWMH005
Secti	on, Township, Range:
Local rel	ief (concave, convex, none):
Subregion (LRR or MLRA): Lat: Lat:	1-44/11 Long: 79.0 38° 26.39 " Stope (%):
Are climatic / hydrologic conditions on the site typical for this time of year? Y	NWI classification; NUTLE
Significantly distur	
Are Vegetation, Soil, or Hydrology naturally problems	
SUMMARY OF FINDINGS	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophyde Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Not all Aree par	ameters present
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
Suitace Water (A1)	Surface Soil Cracks (B6)
Hydrogon Sulfitz Ode	- Operated Concave Surface (B8)
Water Marke (D1)Oxidized Rhizosphere	s on Living Roots (C3) Moss Trim Lines (B16)
Sediment Departs (Dp)	Iron (C4) Dry-Season Water Table (Ca)
Drift Deposite (P2)	In Filled Soils (C6) Cravfish Burrows (C8)
Algal Mat or Crust (D.t)	Outchation visible on Aerial Imagery (C9)
Iron Deposits (B5)	arks) Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Geomorphic Position (D2)
Water-Stained Leaves (B9)	Shallow Aquitard (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes No Dopth (inclusion)	
Water Table Bree 10	
Saturation Departure	
(includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, prev	ious inspections), if available:
Remarks:	
No hyd	balogy present
\cup	

e Stratum (Plot size: 304)	Absolute Dominan	it Indicator	Dominance Test worksheet:
Prunus seroting	<u>% Cover</u> Species	<u>? Status</u>	Number of Dominant Species
Acer rulnim	-15	_ FACU	That Are OBL, FACW, or FAC: (A)
nig range	15 🗸	<u>FAC</u>	Total Number of Dominant
			Species Across All Stress
			Percent of Dominant Species That Are OBL, FACW, or FAC:
			Prevalence Index worksheet:
	<u>30</u> = Total Co		Total % Cover of: Multiply by:
50% of total cover:	S 20% of total cove	r: 6	OPI species
ling/Shrub Stratum (Plot size: 30 ff			
Cosn multitlera	25 1	- FACU	
gastrum sinche	- 15- 7	- <u>FACU</u> FACU	
Rhus glaberg	- 15	- TACU VPI-	
Ū.		- VIC	Column Totals, 780 (1)
			Prevalence Index = $B/A = 3.97$
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
	50 = Total Cov		3 - Prevalence Index is ≤3.0 ¹
50% pf total cover: Z	20% of total cover	\mathbb{D}	4 - Morphological Adaptations ¹ (Provide supportin
<u>Stratum</u> (Plot size: $(\partial \delta f)$)			data in Remarks or on a separate sheet)
ubus buco lepins		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
What ago altissima	25 7	FACU	
Seeasara			¹ Indicators of hydric soil and wetland hydrology must
Verbesina ucidentalis	-25 $\overline{\checkmark}$	FACU	be present, unless disturbed or problematic.
Dasty lis glomera ta	35 7	FACU	Definitions of Four Vegetation Strata:
		· · · · · · · · · · · · · · · · · · ·	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
		·	more in diameter at breast height (DBH), regardless of
		·	height.
			Sapling/Shrub - Woody plants, excluding vines, less
			than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
	$\frac{95}{20\%}$ = Total Cov		Herb - All herbaceous (non-woody) plants, regardless
50% of totar cover: <u>42</u>	20% of total cover:		of size, and woody plants less than 3.28 ft tall.
Vine Stratum (Plot size: 30)			Woody vine - All woody vines greater than 3.28 ft in
201 houncessus quarquetolia	<u> </u>	FACUL	height.
U .:		·	
			Hydrophytic Vogetetier
	<u>5</u> = Total Cove		Vegetation Present? Yes No
50% of total cover: <u>2.5</u>	200/ afterst		
rks: (Include photo numbers here or on a separate			

SOIL

rofile Description: (Describe to the dep	th needed to docum	ent the ind	licator o	r confirm	the absence of indica	tors.)	$\omega \omega m$, pint:
	Redox	Features					
2 22	Color (moist)	%]	<u>Туре'</u>	Loc ²	Texture	Remarks	
1-5 104R 4//3					tom -		
-18+ 104R 4/4					LOAM		
				•••••••••••••••••••••••••••••••••••••••			
				<u> </u>			
					······	······	
				······································			
		·····					
De: C=Concentration, D=Depletion, RM=	Reduced Matrix, MS	Masked Sa	and Grai	ns.	² Location: PL=Pore Li	ning, M=Matrix	······································
Histosol (A1)					Indicators for I	Problematic H	ydric Soils ³ :
Histic Epipedon (A2)	Dark Surface (S7)	(00) (1		2 cm Muck	(A10) (MLRA	147)
Black Histic (A3)	Polyvalue Belo	W Surrace	(S8) (IVI	_RA 147, 1			
Hydrogen Sulfide (A4)	Loamy Gleyed	Matrix (F2)	/15.KA 14)	(7, 140)	(MLRA 1 Piedmont F		(510)
Stratified Layers (A5)	Depleted Matri	x (F3)			(MLRA 1	36, 147)	(F19)
2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11)	Redox Dark St	urface (F6)			Very Shallo	w Dark Surface	e (TF12)
Thick Dark Surface (A12)	Depleted Dark	Surface (F	7)		Other (Expl	ain in Remarks)
Sandy Mucky Mineral (S1) (LRR N,	Redox Depres	SIONS (F8)	(E12) (I				
MLRA 147, 148)	MLRA 136)		(F12) (L	KK N,			
Sandy Gleyed Matrix (S4)	Umbric Surface		_RA 136	. 122)	³ Indicators of	nydrophytic veg	tototion and
Sandy Redox (S5)	Piedmont Floor	dplain Soils	s (F19) (VILRA 148) wetland hydr	ology must be	present
Stripped Matrix (S6) strictive Layer (if observed):	Red Parent Ma	iterial (F21)) (MLRA	127, 147)		bed or problem	atic.
Type:							
Depth (inches):							\sim
narks:					Hydric Soil Present?	Yes	_ No <u>X</u>
iui ka.	1 1	Л		()	\bigcirc		
		Jane	$t \leq \epsilon$	rils.	present		
	NOM						
	Noh	2			V		
	Nom)			V		
	Non				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		
	100 M				V		

wwmh005_u



Upland data point wwmh005_u facing east



Upland data point wwmh005_u facing south

wwmh005 soils



Wetland/upland soils

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline	City/County: Westmoreland	Sampling Date: 9/30/2015
Applicant/Owner: Dominion	State	: <u>PA</u> Sampling Point: <u>wwmc001_w</u>
Investigator(s): GB, MC	Section, Township, Range:	
Landform (hillslope, terrace, etc.): draw	Local relief (concave, convex, none): <u>cor</u>	Slope (%): <u>4</u>
Subregion (LRR or MLRA): Lat:	Long:	Datum:
Soil Map Unit Name:	N\	VI classification:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes 🔽 No (If no, e	xplain in Remarks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Circum	stances" present? Yes 🔽 No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain a	any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showi	ing sampling point locations, tr	ansects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes _ Yes _ Yes _	ン ン ン	No No No	Is the Sampled Area within a Wetland?	Yes	No
Remarks:						
Wetland data point for a saturated PEM	wetland	located	d in a draw on an exi	sting pipeline ROW		

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14) High Water Table (A2) Hydrogen Sulfide Odor (C1) Saturation (A3) Oxidized Rhizospheres on Living I Water Marks (B1) Presence of Reduced Iron (C4) Sediment Deposits (B2) Recent Iron Reduction in Tilled Sc Drift Deposits (B3) Thin Muck Surface (C7) Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)	Dry-Season Water Table (C2)
Field Observations:	
Surface Water Present? Yes No 🔽 Depth (inches):	
Water Table Present? Yes No 🖌 Depth (inches):	
Water Table Present? Yes No _ Depth (inches): Saturation Present? Yes No _ Depth (inches): (includes capillary fringe) Yes No _ Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes No 🖌 Depth (inches):	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: www.c001_w

, , ,		• •	P 4	
Tree Stratum (Plot size:30)	Absolute % Cover	Dominant Ir Species?		Dominance Test worksheet:
	70 00001	opecies:	Status	Number of Dominant Species That Are OBL EACW or EAC: 3 (A)
1		·		That Are OBL, FACW, or FAC: 3 (A)
2		·		Total Number of Dominant
3				Species Across All Strata: 3 (B)
4		·		Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				
7				Prevalence Index worksheet:
1	0	·		Total % Cover of: Multiply by:
		= Total Cover		
50% of total cover: 0	20% of	total cover:	0	
Sapling/Shrub Stratum (Plot size:15)				FACW species $x^2 = \frac{120}{120}$
				FAC species 22 x 3 = 66
1				FACU species 7 x 4 = 28
2		·		
3				UPL species $x 5 = $
				Column Totals: 92 (A) 220 (B)
4				
5		·		Prevalence Index = $B/A = 2.39$
6		·		Hydrophytic Vegetation Indicators:
7				
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9		. <u> </u>		\checkmark 3 - Prevalence Index is ≤3.0 ¹
	0	= Total Cover		
50% of total cover:0		total cover:	0	4 - Morphological Adaptations ¹ (Provide supporting
	20 /0 01			data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Panicum hemitomon	20	Yes	FACW	
2. Solidago gigantea	20	Yes	FACW	
3. Dichanthelium clandestinum	15	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must
		·		be present, unless disturbed or problematic.
4. Vernonia noveboracensis	10	No	FACW	Definitions of Four Vegetation Strata:
_{5.} Eupatorium novae-angliae	10	No		
6. Carex conjuncta	7	No	FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7 Setaria verticillata	7	No	FAC	more in diameter at breast height (DBH), regardless of
· · ·		·		height.
8. Phleum pratense	7	No	FACU	Sanling/Shruh Weady plants evoluting vines loss
9. Persicaria pensylvanica	6	No	FACW	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
10		·		
11				Herb – All herbaceous (non-woody) plants, regardless
	102	= Total Cover	-	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 51		total cover:		
20		·····		Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30)				height.
1				
2				
3		·		
4		·		Hydrophytic
5				Vegetation
	-	= Total Cover		Present? Yes No No
50% of total cover: 0		total cover:		
Remarks: (Include photo numbers here or on a separate s	heet.)			
1				

Profile Desc	cription: (Describe to	o the de	pth needed to docun	nent the i	indicator of	or confirm	the absence of indicators.)	
Depth	Matrix			x Feature		2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture Remarks	
0-4	10YR 4/3	100					SCL	
4-9	10YR 4/2	95	10YR 4/6	5	С	PL/M	SCL	
9-18	10YR 4/1	85	7.5YR 4/6	15	С	PL/M	SCL	
							· · · · · · · · · · _ /	
	·						·· ··	
	·							
					·			
							· · · · · · · · · · _ /	
	·				·			
	oncentration, D=Deple	etion, RN	1=Reduced Matrix, MS	S=Masked	d Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil				(07)			Indicators for Problematic Hydr	
Histosol	()		Dark Surface Polyvalue Be				2 cm Muck (A10) (MLRA 147)
	pipedon (A2) istic (A3)		Thin Dark Su				148) Coast Prairie Redox (A16) (MLRA 147, 148)	
	en Sulfide (A4)		Loamy Gleye	•	, .	47, 140)	Piedmont Floodplain Soils (F	10)
	d Layers (A5)		✓ Depleted Mat		(12)		(MLRA 136, 147)	10)
	uck (A10) (LRR N)		Redox Dark S	• •	=6)		Very Shallow Dark Surface (ΓF12)
	d Below Dark Surface	(A11)	Depleted Dar	•	,		Other (Explain in Remarks)	,
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)			
Sandy N	/lucky Mineral (S1) (L	RR N,	Iron-Mangane	ese Mass	es (F12) (I	LRR N,		
	A 147, 148)		MLRA 13				<u>^</u>	
	Gleyed Matrix (S4)		Umbric Surfa	. ,	•		³ Indicators of hydrophytic veget	
-	Redox (S5)		Piedmont Flo	•	• •	•		
	l Matrix (S6)		Red Parent M	laterial (F	-21) (MLR	A 127, 147	 unless disturbed or problemati 	C.
Type: no	Layer (if observed):							
Depth (in	ches):						Hydric Soil Present? Yes	No
Remarks:								

wwmc001e_w



Wetland data point wwmc001e_w

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline	City/County: Westmoreland	Sampling Date: 9/30/2015				
Applicant/Owner: Dominion	State: <u>P</u>	A Sampling Point: <u>www.c001_u</u>				
Investigator(s): GB, MC	Section, Township, Range:					
Landform (hillslope, terrace, etc.): slope	Local relief (concave, convex, none): none	Slope (%): <u>9</u>				
Subregion (LRR or MLRA): Lat:	Long:	Datum:				
Soil Map Unit Name:	NWI 0	classification:				
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes 🔽 No (If no, expl	ain in Remarks.)				
Are Vegetation, Soil, or Hydrologys	significantly disturbed? Are "Normal Circumsta	ances" present? Yes 🔽 No				
Are Vegetation, Soil, or Hydrology n	naturally problematic? (If needed, explain any	answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						

Hydrophytic Vegetation Present?	Yes	No	~	Is the Sampled Area			
Hydric Soil Present?	Yes	No	v	within a Wetland?	Yes	No	v
Wetland Hydrology Present?	Yes	No	v				
Remarks:				·			
Upland data point taken above toe of slope for a saturated PEM wetland located in a draw on an existing pipeline ROW							

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living	Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Se	oils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No 🖌 Depth (inches):	
Water Table Present? Yes No 🖌 Depth (inches):	
water rable Present? res No <u>*</u> Depth (inches)	
Saturation Present? Yes No 🖌 Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes No V Depth (inches):	
Saturation Present? Yes No V Depth (inches):	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	
Saturation Present? Yes No V Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: <u>wwmc001_u</u>

, , ,	A Is a s Is sta	• Densis and h	P	Densinense Testeventetest
Tree Stratum (Plot size:30)		Dominant In Species?		Dominance Test worksheet:
	70 00001		Otatus	Number of Dominant Species That Are OBL EACW or EAC: 4 (A)
				That Are OBL, FACW, or FAC:4 (A)
2		·		Total Number of Dominant
3		<u> </u>		Species Across All Strata: 8 (B)
4				、
5				Percent of Dominant Species
		·		That Are OBL, FACW, or FAC: (A/B)
6		·		Prevalence Index worksheet:
7				
	0	= Total Cove		$\begin{array}{c c} \underline{\text{Total } \% \text{ Cover of:}} \\ \underline{\text{OBL encoded}} \\ 0 \\ \hline \end{array} \\ \begin{array}{c} & & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ $
50% of total cover:0	20% of	f total cover:	0	
Sapling/Shrub Stratum (Plot size: 15)				FACW species x 2 =74
1 Rosa multiflora	5	Yes	FACU	FAC species x 3 = 30
1		·		FACU species 58 x 4 = 232
2			<u> </u>	
3		·		UPL species $x = 110$ $x = 361$
4				Column Totals: (A) (B)
5				
				Prevalence Index = B/A =3.28
6		·		Hydrophytic Vegetation Indicators:
7		·		1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9.				
	5	= Total Cove		3 - Prevalence Index is $\leq 3.0^{1}$
50% of total cover: 2.5		f total cover:	1	4 - Morphological Adaptations ¹ (Provide supporting
	20 /0 01	101a1 00vcr.		data in Remarks or on a separate sheet)
	15	¥ .		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Symphyotrichum ericoides	15	Yes	FACU	
2. Solidago gigantea	15	Yes	FACW	
3. Panicum hemitomon	12	Yes	FACW	¹ Indicators of hydric soil and wetland hydrology must
4 Dichanthelium clandestinum	10	Yes	FAC	be present, unless disturbed or problematic.
5. Symphyotrichum novae-angliae	10	Yes	FACW	Definitions of Four Vegetation Strata:
		·		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. Phleum pratense	10	Yes	FACU	more in diameter at breast height (DBH), regardless of
7. Solidago curtisii	10	Yes	FACU	height.
_{8.} Penstemon laevigatus	8	No	FACU	
9 Avena sativa	5	No	UPL	Sapling/Shrub – Woody plants, excluding vines, less
10. Ambrosia artemisiifolia	5	No	FACU	than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
	5			III) tali.
11. Trifolium repens	5	No	FACU	Herb – All herbaceous (non-woody) plants, regardless
		= Total Cove	-	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 52.5	20% of	f total cover:	21	We as the size of the second sector there are a first the second sector the second sec
Woody Vine Stratum (Plot size: 30)				Woody vine – All woody vines greater than 3.28 ft in height.
· · · · · · · · · · · · · · · · · · ·				
1				
2				
3		<u></u>		
4				Liverentratio
5				Hydrophytic Vegetation
	-	= Total Cove		Present? Yes No V
50% of total cover: 0		f total cover:	•	
		total cover.		
Remarks: (Include photo numbers here or on a separate s	heet.)			

Profile Desc	cription: (Describe t	o the dep	th needed to docu	nent the i	ndicator o	or confirm	the absence o	f indicators.)	
Depth	Matrix			x Features	3				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remai	ks
0-8	10YR 4/3	100					SCL		
8-18	10YR 4/4	65	10YR 4/6	35	С	М	SCL		
1							2		
	oncentration, D=Deple	etion, RM	=Reduced Matrix, M	S=Masked	Sand Gra	ains.		Pore Lining, M=Ma	
Hydric Soil Histosol			Dark Surface	e (S7)				ors for Problemation m Muck (A10) (MLR	•
	pipedon (A2)		Polyvalue Be	. ,	ce (S8) (M	LRA 147.		ast Prairie Redox (A	•
	istic (A3)		Thin Dark Su				•	MLRA 147, 148)	- /
	en Sulfide (A4)		Loamy Gleye				•	dmont Floodplain S	oils (F19)
	d Layers (A5)		Depleted Ma		,			MLRA 136, 147)	
	uck (A10) (LRR N)		Redox Dark	• •	6)			y Shallow Dark Sur	face (TF12)
	d Below Dark Surface	(A11)	Depleted Da	rk Surface	, (F7)			ner (Explain in Rema	, ,
·	ark Surface (A12)	· /	Redox Depre		. ,			、 ·	,
	Aucky Mineral (S1) (L	RR N.	Iron-Mangan	•	,	RR N.			
-	A 147, 148)		MLRA 13		· / ·				
Sandy G	Gleyed Matrix (S4)		Umbric Surfa	, ace (F13) (MLRA 13	6, 122)	³ Indic	ators of hydrophytic	vegetation and
	Redox (S5)		Piedmont Flo	. , .			8) wetla	and hydrology must	be present.
	Matrix (S6)		Red Parent I	•	, ,	•	•	ss disturbed or prob	•
	Layer (if observed):			(/ (,	, <u> </u>		
Type: no									
Depth (in	ches):						Hydric Soil P	resent? Yes	No 🖌
Remarks:									

wwmc001e_u



Wetland data point wwmc001e_u

WETLAND DETERMINATION DATA FORM – Eastern Mountain	
Project/Site:	Sampling Date: 5-14-15
Applicant/Owner: Dominion	State: PA Sampling Point: WWMH012
nvestigator(s):DD(STSection, Township, Range:	
andform (hillslope, terrace, etc.):flore Oplain Local relief (concave, convex, no	
Subregion (LRR or MLRA): Lat: <u>40,4252</u> Long:	9.5941 Datum: Wes 84
	NWI classification:FC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No	
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Norma	
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, e	explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point location	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes X No Within a Wetland? Remarks: All three parameters present Present Present Present	Yes No
HYDROLOGY Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
Surface Water (A1) True Aquatic Plants (B14) High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
X Saturation (A3) Oxidized Rhizospheres on Living Roots (C3)	
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
 Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) 	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	K FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No 🔀 Depth (inches):	
Water Table Present? Yes No X_ Depth (inches): Z C	\checkmark
Saturation Present? Yes No Depth (inches): _10" Wetland	Hydrology Present? Yes <u>No</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if av	vailable:
Remarks:	
Hydrology present	
·	

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いいかけの12 fy Sampling Point:____

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VEGETATION (Four Strata) – Use scientific names of plants,

20	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u>)	<u>% Cover Species? Status</u>	Number of Dominant Species
1. Fraxinus pensylvanicum	_ 50 V FACU	That Are OBL, FACW, or FAC:
		-
		- Total Number of Dominant
3		_ Species Across All Strata: (B)
4		
		Percent of Dominant Species
5		- That Are OBL, FACW, or FAC: (A/B)
6		_
7		Prevalence Index worksheet:
		Total % Cover of: Multiply by:
1	50 = Total Cover	OBL species x 1 =
	5 20% of total cover: 10	
Sapling/Shrub Stratum (Plot size: 30)	1	FACW species x 2 =
1. Fraxines Donsylvanicum	20 V, FACM	/ FAC species x 3 =
2. Rish mile flora		
	•	
3		UPL species X 5 =
4		Column Totals: (A) (B)
5		
		Prevalence Index = B/A =
6,		- Hydrophytic Vegetation Indicators:
7		,1 - Rapid Test for Hydrophytic Vegetation
8		
9		- X2 - Dominance Test is >50%
·····		— 3 - Prevalence Index is ≤3.0 ¹
1	25 = Total Cover Q	4 - Morphological Adaptations ¹ (Provide supporting
	2.5 20% of total cover: 7	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: ()	20 /	Droblemetic Llydrophytic Vegetation ¹ (Evaluin)
1. Rochmena certinonzia	20 V FACH	
2. Impetiens corpensis	15 FACI	
3. Caline tinctonum		Indicators of hydric soli and welland hydrology must
4 Streed Symplocarpus fortidas	_ 20 V OBL	
5 Punicum provulum	20 FAX	-iu
/		Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
		 more in diameter at breast height (DBH), regardless of
7		height.
8		- Sapling/Shrub - Woody plants, excluding vines, less
9		than 3 in. DBH and greater than or equal to 3.28 ft (1
		m) tall.
10		
11,		Herb – All herbaceous (non-woody) plants, regardless
	$= -\frac{90}{10} = \text{Total Cover}$	of size, and woody plants less than 3.28 ft tall.
50% of total cover:	= 15 = Total Cover 18	
Woody Vine Stratum (Plot size: 30)		Woody vine – All woody vines greater than 3.28 ft in
(i for size,)		height.
1		
2		
3	-	
A		
4		- Hydrophytic
5		Vegetation X
	= Total Cover	Present? Yes // No
50% of total cover: _	20% of total cover:	
Remarks: (Include photo numbers here or on a sepa	rate sheet)	

•

Sampling Point: _____

Profile Description: (Describe to the dep	th needed to document the indicator or confirm t	he absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-10 104R 4/1	104R 414 710 C M.	LOTEM
10-16+ 101R4/2	104R 4/4 710 C M	LOWN
· · · · · · · · · · · · · · · · · · ·		
	I=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Hydric Soil Indicators:		-
Histosol (A1) Histic Epipedon (A2)	Dark Surface (S7) Polyvalue Below Surface (S8) (MLRA 147, 7)	2 cm Muck (A10) (MLRA 147) 148) Coast Prairie Redox (A16)
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Lepleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Depleted Dark Surface (F7) Redox Depressions (F8)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	
Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 14	
Stripped Matrix (S6) Restrictive Layer (if observed):	Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic.
Type:		Hydric Soil Present? Yes 📈 No
Depth (inches):	·	
Remarks:	Hydric soil F	<u> </u>
	Mr. And Soul I	reserve
	Ryan 20 - F	
	\mathcal{O}	

wwmh012f_w



wwmh012f_w facing north



wwmho12f_w facing east

	;
WETLAND DETERMINATION DATA FORM - Eastern	Mountains and Piedmont Region
Project/Site: DTL Supply Levelor City/County: Luiz	STMUTELAND Sampling Date: 5-14-15
Applicant/Owner: Dominion	State: <u>PA</u> Sampling Point:
Investigator(s):	, Range:
Landform (hillslope, terrace, etc.):	convex, none): <u>Convex</u> Slope (%): <u>15</u>
Subregion (LRR or MLRA):Lat: <u>40.4252</u>	Long: 79.5940 Datum: WZ584
Soil Map Unit Name:	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	No (If no, explain in Remarks.)
	Are "Normal Circumstances" present? Yes 🔀 No
-	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling po	
Hydrophytic Vegetation Present? Yes No is the San	apled Area /etland? Yes Z No X
Remarks: NOT ALL THREE PARAMETERS PRES	SENT
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
High Water Table (A2) Hydrogen Sulfide Odor (C1) Saturation (A3) Oxidized Rhizospheres on Living	
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled S	
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Shallow Aquitard (D3) Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No K Depth (inches):	
Water Table Present? Yes No K Depth (inches):	
Saturation Present? Yes No Depth (inches);	Wetland Hydrology Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspi	ections), if available:
Remarks: No hydrology present	7

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WWMHO12

VEGETATION (Four Strata) – Use scientific r	names of plants.	Sampling Po	int:
21	Absolute Dominant Indicator	Dominance Test worksheet:	<u></u>
Tree Stratum (Plot size:)	<u>% Cover Species? Status</u>	Number of Dominant Species	l í
1. Loncolon pulip lens	20 FACU	That Are OBL, FACW, or FAC:	(A)
	20 V PACU	Total Number of Dominant	V
3. Francis ponneyfromeour	- 20 - EACW	Species Across All Strata:	<u> </u>
4. Prunus servina	15 V EACU	Develop of Deminort Crossing	\sim
5		Percent of Dominant Species That Are OBL, FACW, or FAC:	12.5% (A/B)
6			
7		Prevalence Index worksheet:	
	$\overline{75}$ = Total Cover	Total % Cover of:	Multiply by:
50% o <u>f t</u> otal cover: <u>3</u> 7	.S 20% of total cover: 15	OBL species	(1=
Sapling/Shrub Stratum (RJot size:		FACW species >	< 2 =
1. Comus toonda	-15 FACU	FAC species >	(3 =
2. Crataeques crusigali	10 EIACU	FACU species >	x 4 =
3. ROSA multiplora	30 V FALU		x 5 =
4. InObra Benzoim	25 1	Column Totals: (A) (B)
5			
6,		Prevalence index = B/A =	
7		Hydrophytic Vegetation Indic	
8		1 - Rapid Test for Hydroph	
9		2 - Dominance Test is >50	
	80 = Total Cover	3 - Prevalence Index is ≤3.	
50% of total cover:	10 20% of total cover:6	4 - Morphological Adaptati	
Herb Stratum (Plot size:		data in Remarks or on a	-
1. Duchilis alonerata	-40 V FACI	Problematic Hydrophytic V	regetation" (Explain)
2. Plantago rugelli	ID FACU	1	
3. Krigia appreciation	10300 FAC		etland hydrology must
4. Compan Auena sativa	30 V UPL	 Definitions of Four Vegetation 	
5. Trifolium repens	10 FACU		
6		 Tree – Woody plants, excludin more in diameter at breast height 	ig vines, 3 in. (7.6 cm) o obt (DBH) regardless of
7		height.	gin (DDil), regaratose e
8		Sanling/Shrub Moody plan	e oveluding vinos loss
9		 Sapling/Shrub – Woody plant than 3 in. DBH and greater that 	an or equal to 3.28 ft (1
10		m) tall.	
11		- Herb - All herbaceous (non-w	oody) plants, repardless
	Total Cover	of size, and woody plants less	than 3.28 ft tall.
50% of total cover:	0 20% of total cover: 20		
Woody Vine Stratum (Plot size: 30)		 Woody vine – All woody vines height. 	s greater than 3.28 it in
1.			
2			
3.			
4			
5		 Hydrophytic Vegetation 	\vee
	= Total Cover	Present? Yes	No
50% of total cover:	20% of total cover:	_	
Remarks: (Include photo numbers here or on a separat	te sheet.)	<u></u>	

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Depth Matrix		Redox	Features			the absence		
(inches) Color (moist)	<u>%</u> <u>C</u>	olor (moist)		Type ¹	Loc ²	Texture	R	emarks
<u>)-5 loyr3/2</u>	<u> </u>					Lown	<u> </u>	
-12 104R4/3	3					lonen		
2-18+ 104R 4/L	./							
	1				······	_ TOWN	<i>۱</i>	· · · · · · · · · · · · · · · · · · ·
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				<u> </u>		·····		·····
								
1						2		
¹ Type: C=Concentration, D=De Hydric Soil Indicators:	pletion, RM=Red	uced Matrix, MS	S=Masked	Sand Gr	ains.		L=Pore Lining, N	n=Matrix. Matic Hydric Soils
-		Dork Surface						-
Histosol (A1) Histic Epipedon (A2)		_ Dark Surface _ Polyvalue Be		re (S8) (1	AI RA 147		2 cm Muck (A10) Coast Prairie Rec	
Black Histic (A3)		_ Thin Dark Su				(140)	(MLRA 147, 14	
Hydrogen Sulfide (A4)	_	_ Loamy Gleye	ed Matrix (I	Piedmont Floodp	lain Soils (F19)
Stratified Layers (A5)	_	_ Depleted Ma					(MLRA 136, 14	
2 cm Muck (A10) (LRR N) Depleted Below Dark Surfa		Redox Dark : Deploted Dark :					Very Shallow Dai Other (Explain in	rk Surface (TF12)
Thick Dark Surface (A12)		Depleted Date Redox Depresentation				\		Remarks)
Sandy Mucky Mineral (S1)	(LRR N,	Iron-Mangan			(LRR N,			
MLRA 147, 148)		MLRA 13	6)					
Sandy Gleyed Matrix (S4)	-	_ Umbric Surfa						phytic vegetation an
 Sandy Redox (S5) Stripped Matrix (S6) 	-	Piedmont Florent Red Parent I					etland hydrology nless disturbed c	must be present,
Restrictive Layer (if observed	i):				A 127, 14	u		
Туре:								
Depth (inches):						Hydric So	il Present? Y	es No 🗡
Remarks:								~~~~~
		17-	1	0		0	preser	d)
		100	N	ye	nc :	30-1	preser	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
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wwmh012_u



wwmh012f_u facing south



wwmho12f_u facing west

wwmh012



wwmh012 soil

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region City/County: Westmare/unc Sampling Date: Project/Site: Applicant/Owner: State: Sampling Point: MINIM Investigator(s): DDUK 5T Section, Township, Range Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Loncore Slope (%) "46.19" Lona: 79° 40°25 36' 03.21" Subregion (LRR or MLRA): Datum Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks.) No Are Vegetation _____, Soil _____, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes , Soil , or Hydrology naturally problematic? Are Vegetation (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Vas No No ___ within a Wetland? Wetland Hydrology Present? Yes No Remarks: parrameters preserve three HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Surface Water (A1) True Aquatic Plants (B14) High Water Table (A2) Drainage Patterns (B10) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) X Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) ___ Dry-Season Water Table (C2) Water Marks (B1) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) ____ Crayfish Burrows (C8) Sediment Deposits (B2) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ____ Algal Mat or Crust (B4) Stunted or Stressed Plants (D1) Other (Explain in Remarks) Geomorphic Position (D2) Iron Deposits (B5) ____ Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) ____ Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) 'X FAC-Neutral Test (D5) **Field Observations:** Surface Water Present? Depth (inches) Water Table Present? Depth (inches) Wetland Hydrology Present? Ye Saturation Present? Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Hydrology present

Sampling Point:_______

VEGETATION (Four Strata) - Use scientific names of plants.

2001	Absolute	Dominant li		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 3044)	<u>% Cover</u>	Species?	Status	Number of Dominant Species 7
1. Hag sulvem	39	·	FAC	That Are OBL, FACW, or FAC: (A)
2. Betulai hight	<u></u>		FACW	Total Number of Dominant
3. Fraxinus pernsycomición	30		EKW!	Species Across All Strata: (B)
4				Descent of Dominant Spacing
5				Percent of Dominant Species 78 (A/B)
6				
7	• ••••			Prevalence Index worksheet:
	RA	= Total Cove		Total % Cover of: Multiply by:
50% of total cover: <u>-//</u>	20% 0	f total cover:	16	OBL species x1 =
Sapling/Shrub Stratum (Plot size: 30 H)	20/00			FACW species x 2 =
1. Linustrum schease	IK	. /	FIACU	FAC species x 3 =
2. ROSA multiflora			FACU	FACU species x 4 =
			TACU	UPL species x 5 =
3				Column Totals: (A) (B)
4			********	
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8	-			2 - Dominance Test is >50%
9	17-			3 - Prevalence Index is ≤3.0 ¹
.	70	= Total Cov	^{er} 🛇	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:	<u>U</u> 20%	of total cover	_0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 10 1)	2.9	× /	-	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Polygonum sagar totum	- <u></u>		OBL	
2. Gover intume soons	20	+	FACY	I 'Indicators of hydric soil and wetland hydrology must
3. 5/1dago gignitea	20		<u>FAC</u>	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5			,	Tree Mondu plants evaluating vinos 2 in (7.6 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9			-	than 3 in. DBH and greater than or equal to 3.28 ft (1
10			_	m) tall.
11				- Herb - All herbaceous (non-woody) plants, regardless
	70) = Total Co	ver	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 3		of total cove	r: 14	
Woody Vine Stratum (Plot size: 30, 12.)			~	 Woody vine – All woody vines greater than 3.28 ft in height.
1. Smilox retunde folia	10	\checkmark	FAC	noight
2.				•
3				-
A				-
5				- Hydrophytic
		TO		_ Vegetation Present? Yes No
50% of total cover:	20%	= Total Co of total cove		
Remarks: (Include photo numbers here or on a separat				an
	e sneet.)			

wwmHODIF	<u>۱</u>
Sampling Point:	.)

Depth (inches) Matrix Redox Features 0-3 Color (moist) % Type1 Loc2 Texture Remarks 0-3 IOYR 3/2 IOYR 4/16 7.0 M, PL LOTAM 3-11 IOYR 4/16 720 M PL IOTAM 11-18+ IOYR 4/16 720 M IOTAM	
0-3 104R3/2 104R4/16 710 C M.PL LOTAM 3-11 104R3/1 104R4/16 >20 C M.PL	
3-11 104R3/1 104R4/16 >20 C M PK	
$\frac{71-78^{+}}{04R} \frac{972}{12} = \frac{104R}{16} \frac{720}{720} \frac{c}{m} = \frac{1}{104} \frac{104R}{16} \frac{116}{720} \frac{c}{m} = \frac{1}{104} \frac{1}{$	
Trues C. Consentation D. Dealerting DM Deduced Matrix 100 Martine Court Court Court Court	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soil	- ³ .
Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)	
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16)	
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148)	
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19)	
Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147) Z cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12)	
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks)	
Thick Dark Surface (A12) Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148) MLRA 136)	
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) ³ Indicators of hydrophytic vegetation a Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present,	nd
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present, unless disturbed or problematic. Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic.	
Restrictive Layer (if observed):	
Туре:	
Depth (inches): No	
Remarks:	
$\lambda = \lambda = \lambda$	
laydrie seil present	
I get a seed preserver	

wwmh001f_w



Wetland data point wwmh001f_w facing south



Wetland data point wwmh001f_w facing west

WETLAND DETERMIN					
Project/Site: DT Supply Her	aler city/co	ounty: Ups.	favore land	Samplir	ng Date: $\frac{(1-13-)L}{4}$
Applicant/Owner: Dominion		•	State:	A Sami	pling Point: WMHOC
nvestigator(s): DD LOEST	Sectio				- (
		of (concovo, cor			Stope (%): 10 -25
Subregion (LRR or MLRA):	100 Lot 40°25' 4/6	33"	na 79° 36' (3.67"	Slope (%): <u>10 -2</u> 5 Datum: <u>(658</u> 4
Soil Map Unit Name:	······································				NOUE
Are climatic / hydrologic conditions on the site $t {y}$	pical for this time of year? Y	'es 🔽 No	(If no, expla	iin in Remarks.) /
Are Vegetation, Soil, or Hydrolog	y significantly distur	bed? Are	"Normal Circumsta	nces" present?	Yes No
Are Vegetation, Soil, or Hydrolog	y naturally problema	atic? (If r	needed, explain any	answers in Re	marks.)
SUMMARY OF FINDINGS – Attach s	ite map showing sam	npling point	locations, tran	sects, impo	ortant features, etc.
Hydric Soil Present? Yes		Is the Sample within a Weth	ed Area and? Yes	No	<u>×</u>
Bomarks: 1 / 2011	e peranet	ers p	resent	A	
HYDROLOGY					
Wetland Hydrology Indicators:	۵٬۰۰۰ و ۱۹۹۰ و ۱۹۹۰ و ۱۹۹۹		Secondar	y Indicators (m	inimum of two required)
Primary Indicators (minimum of one is required	d; check all that apply)	·····		ice Soil Cracks	
Surface Water (A1)	True Aquatic Plants	(B14)			Concave Surface (B8)
— High Water Table (A2)	— Hydrogen Sulfide Od			nage Patterns (
Saturation (A3)	Oxidized Rhizosphe	-		s Trim Lines (B	1
Water Marks (B1)	Presence of Reduce		+	Season Water	
Sediment Deposits (B2)	Recent Iron Reducti			fish Burrows (C	1
Drift Deposits (B3)	Thin Muck Surface (n Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Re	emarks)		ted or Stressed	
Iron Deposits (B5)				morphic Positic	
Inundation Visible on Aerial Imagery (B7)				low Aquitard (E	
Water-Stained Leaves (B9)				otopographic R	1
Aquatic Fauna (B13)			FAC	-Neutral Test (D5)
Field Observations:					
Surface Water Present? Yes N					
Water Table Present? Yes N	1. 1			D	~~ X
Saturation Present? Yes N (includes capillary fringe) Describe Recorded Data (stream gauge, mor			Wetland Hydrolog	y Present? Y	/es No
Remarks:		4 4	A		
	ydoologie	1 pre	say		

WWMHOOI Sampling Point:

 (Δ)

(B)

(A/B)

(B)

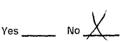
1

VEGETATION (Four Strata) - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: % Cover Species? Status Number of Dominant Species no That Are OBL, FACW, or FAC: lorun 1 1. Total Number of Dominant Incin FA Species Across All Strata: etius FIX Λ Percent of Dominant Species 5 That Are OBL, FACW, or FAC: 6 Prevalence Index worksheet: Total % Cover of: Multiply by: = Total Cover **OBL** species 50% of total cover: S 20% of total cover FACW species Sapling/Shrub Stratum (Plot size: FAC species x 4 FACU species 2 11 x 5 **UPL** species 17 3 IMIN 800 Column Totals: Δ 5 Prevalence Index = B/A = 6. Hydrophytic Vegetation Indicators: 7 ____1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% 9 3 - Prevalence Index is $≤3.0^{1}$ 60 = Total Cover ____ 4 - Morphological Adaptations¹ (Provide supporting 20% of total cover: 50% of total cover: data in Remarks or on a separate sheet) Herb Stratum (Plot size: Problematic Hydrophytic Vegetation¹ (Explain) maritandicaj ·FI/ 2 Sama 2 ¹Indicators of hydric soil and wetland hydrology must bearin inn be present, unless disturbed or problematic. INC 4 **Definitions of Four Vegetation Strata:** 5 Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or 6 more in diameter at breast height (DBH), regardless of height. 7 8 Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 9. m) tall. 10. 11 Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. = Total Cover . 7. 50% of total/gover: 20% of total cover Woody vine - All woody vines greater than 3.28 ft in ~ Woody Vine Stratum (Plot size: height. 51 FAC

Hydrophytic Vegetation Present?

= Total Cover-

20% of total cover:



Remarks: (Include photo numbers here or on a separate sheet.)

50% of total cover:

3

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Som	nina	Point:	
Janik	JIII U	r On th	

	pth needed to docume		confirm the al	osence of indicato	DFS.)
Depth <u>Matrix</u> (inches) Color (moist) %	Color (moist)	Features % Type ¹		(ture	Remarks
<u>9 2,54413</u>			Lo	mm	
-12-2.545/3			4	ran	
1-18+2.545/BL			LO	AM	
	· · · · · · · · · · · · · · · · · · ·				
	, <u> </u>				
	,				
			·····		
Type: C=Concentration, D=Depletion, R	M=Reduced Matrix, MS	=Masked Sand Gra	ins. ² Loc	ation: PL=Pore Lir	
Hydric Soil Indicators:		(07)			Problematic Hydric Solls ³ :
Histosol (A1) Histic Epipedon (A2)	Dark Surface	(S7) Iow Surface (S8) (M	LRA 147. 148)	2 cm Wuck	(A10) (MLRA 147) ie Redox (A16)
Black Histic (A3)	Thin Dark Su	rface (S9) (MLRA 1		(MLRA 1	47, 148)
Hydrogen Sulfide (A4)	Loamy Gleye				loodplain Soils (F19)
Stratified Layers (A5) 2 cm Muck (A10) (LRR N)	Depleted Mat Redox Dark S			(MLRA 1 Verv Shallo	w Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dar				ain in Remarks)
Thick Dark Surface (A12)	Redox Depre				
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	Iron-Mangan MLRA 13	ese Masses (F12) (6)	LRR N,		
Sandy Gleyed Matrix (S4)		o; ice (F13) (MLRA 13	6, 122)	³ Indicators of	hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Flo	odplain Soils (F19)	(MLRA 148)		rology must be present,
Stripped Matrix (S6) Restrictive Layer (if observed):	Red Parent N	Material (F21) (MLR	A 127, 147)	unless distu	rbed or problematic.
Type:					17
Depth (inches):	entre and a second s		Н	dric Soil Present	? Yes No 🚬
Remarks:				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	No hy.	dric so	ils A	esent	
			- P		

wwmh001_u



Upland data point wwmh001_u facing east



Upland data point wwmh001_u facing north

wwmh001_w soils



Wetland/upland soils

METLAND DETEDRAINATION DATA FORM FOR d Diadmant Dagion n a . . !

	JN DATA FORIVI - Eastern IVIO		÷ ,	
Project/Site: DTT Supply Hender	City/County: UBS 77	NORE LAND	Sampling Date: / 1-) :	5-14
Applicant/Owner: Dominion		State: <u></u>	_ Sampling Point	<u>n 14</u> 00
nvestigator(s): <u>DDiJEST</u>	Section, Township, Ra	nge:	anna a' Philippi I Mha a bhliachta ann an Anna	i/
andform (hillslope, terrace, etc.):	nO Local relief (concave, con	vex, none): <u>Conc</u>	AUR_ Slope (%):	·····
Subregion (LRR or MLRA): Lat	t: 40° 26' 01.90" Lor	ng: 79° 36' 36.	<u>71"</u> Datum: <u></u>	,5 84
Soil Map Unit Name: Frnest		NWI classific	ation: <u>PEM</u>	
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes 📈 No			
Are Vegetation, Soil, or Hydrology			present? Yes No _	
Are Vegetation, Soil, or Hydrology		eeded, explain any answei	×	
SUMMARY OF FINDINGS – Attach site	nap showing sampling point	ocations, transects	, important features,	etc.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No Is the Sample No No within a Wetla	d Area ind? Yes	No	
Remarks: in an the	And	10.00 th		
Fill M	e promaneters p	reservy		
HYDROLOGY	۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two requ	ired)
Primary Indicators (minimum of one is required; che	eck all that apply)	Surface Soil	l Cracks (B6)	
Surface Water (A1)	_ True Aquatic Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		atterns (B10)	
X Saturation (A3)	\leq Oxidized Rhizospheres on Living Ro			
Water Marks (B1)	Presence of Reduced Iron (C4)		Water Table (C2)	
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils			
Drift Deposits (B3)	Thin Muck Surface (C7)		Visible on Aerial Imagery (C	.9)
Algal Mat or Crust (B4)	_ Other (Explain in Remarks)		Stressed Plants (D1)	
Iron Deposits (B5)		P	c Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aq		
Water-Stained Leaves (B9)			raphic Relief (D4)	
Aquatic Fauna (B13)		FAC-Neutra	al Test (D5)	· .
Field Observations:	/			
Surface Water Present? Yes <u>No</u>	1		<u>,</u>	
Water Table Present? Yes No			X	
Saturation Present? Yes <u></u> No	Depth (inches):	Wetland Hydrology Prese	ent? Yes <u> </u>	
Describe Recorded Data (stream gauge, monitorir	ig well, aerial photos, previous inspection	ons), if available:		
Democratic			Q14	
Remarks:	11.01	<u> </u>		
	Hydro Logy	present		
		V		
				l

ر -

	Absolute	Dominant		Dominance Test worksheet:		
<u>Stratum</u> (Plot size: <u>30H</u>)		<u>Species</u> ?	<u>Status</u> FAC	Number of Dominant Species	, L	(A)
•				That Are OBL, FACW, or FAC	·	(A)
				Total Number of Dominant	4	
				Species Across All Strata:	~	(B)
				Percent of Dominant Species That Are OBL, FACW, or FAC	501 ::	_ (A/B)
Style="list a bit of processing and a start of the				Prevalence Index workshee	<u>۴</u> ۰	
				Total % Cover of:		
and the second		= Total Cov		OBL species		
50% of total cover: 7-5	20% o	f total cover		FACW species		
ling/Shrub_Stratum (Plot size:)	15-	. /	NI	FAC species		
Malus pumila				FACU species		
-				UPL species		
				Column Totals:		
				Prevalence Index = B/		
				Hydrophytic Vegetation Inc		
				1 - Rapid Test for Hydro		
	·····			2 - Dominance Test is >		
		= Total Co		- 3 - Prevalence Index is s		
<u>50%</u> of total cover: <u>7</u> .	5 20%	_ = rotar cc	ar: 3	4 - Morphological Adapta		
b Stratum (Plot size: 1017		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		data in Remarks or o		
Typhy latitolia	25	$\underline{}$	<u> 081</u>	Problematic Hydrophytic	; vegetation (Exp	nain)
Beleada Dipsacus fullom	<u>m 15</u>		2 <u>FAC</u>		wetland hydrolog	vmust
Cypeons strigosus	_20_	$ \checkmark$	_ FACV	¹ Indicators of hydric soil and be present, unless disturbed	or problematic.	ymusi
Leptichlon ponicea	<u>jD</u>		- FACU	Definitions of Four Vegeta		
Harmonics parvillora		<u> </u>	- FACI	AT		
COULTACHORE	_ 600			Tree – Woody plants, exclude more in diameter at breast h	ieiaht (DBH), reaa	rdless of
Pholoris arundonacea	_ 25	<u> </u>	_ FAC	W height.	- 3 - 1 3	
				- Sapling/Shrub - Woody pla	ants, excludina vir	nes, less
				than 3 in. DBH and greater i	han or equal to 3	.28 ft (1
**************************************				_ m) tall.		
				- Herb - All herbaceous (non	-woody) plants, re	gardless
	n 100	_ = Total C		of size, and woody plants le	ss than 3.28 ft tall	
50% of total cover: 50% of	20%	of total cov	er: <u>20</u>	- Woody vine – All woody vi	nes greater than 3	8.28 ft in
				height.		
STATE /						
Nong				-		
				Hydrophytic	[
		= Total C	Cover	Present? Yes	<u>No</u>	
50% of total cover:	20%			×*		

WWM:	HOO	2
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Sampling Point: $\underline{e}_{-\mathcal{W}}$

Profile Description: (Describe to the de	pth needed to document the indicator or confirm t	he absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	$\frac{\text{Color (moist)}}{\text{Color (moist)}} \frac{\%}{7} \frac{\text{Type}^1}{100} \frac{\text{Loc}^2}{100}$	Texture Remarks
0-3 104R3/2	IDYR 4/14 710 C M, PL	LOAM
3-12 104R 4111	1048 41.146715 C M,PL.	LOXAM
12-16 10YR 4/2	104R 4/11+4/0715 C M.PL.	LOAM

······································		
	M=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix,
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Histic Epipedon (A2)	 Dark Surface (S7) Polyvalue Below Surface (S8) (MLRA 147, 	2 cm Muck (A10) (MLRA 147) 148) Coast Prairie Redox (A16)
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11)	 Redox Dark Surface (F6) Depleted Dark Surface (F7) 	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	31. discuss of budgeshuits vessetion and
Sandy Gleyed Matrix (S4) Sandy Redox (S5)	Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 14)	 ³Indicators of hydrophytic vegetation and wetland hydrology must be present,
Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127, 14)	
Restrictive Layer (if observed):	an a	
Туре:		\vee
Depth (inches):		Hydric Soil Present? Yes <u>No</u> No
Remarks:	Hydric seilpr	
	Hydric Ser pr	esent
· · · · · · · · · · · · · · · · · · ·		
		t and the first state of the fir
		5.

wwmh002e_w



Wetland data point wwmh002e_w facing south



Wetland data point wwmh002e_w facing west

WETLAND DETERMINATION DAT	A FORM – Eastern Mou	untains and Piedmont Region	2-121
roject/Site: DTLSupply Hendler	City/County:	more And Sampling Date:	
pplicant/Owner:		State: PA Sampling Point	MAKIC
nvestigator(s): DDidEST	Section, Township, Rar		i
		•	11-25
tradium (imisiope, tendec, etc.).	21.102 01.04	rex, none):Slope (%): g: <u>79° 36° 36. 62″</u> Datum:_WG	504
			,
oil Map Unit Name: <u>Lobdell</u>		NWI classification:	
re climatic / hydrologic conditions on the site typical for this tim			
re Vegetation, Soil, or Hydrology signil	icantly disturbed? Are '	Normal Circumstances" present? Yes 🔀 N	o
re Vegetation, Soil, or Hydrology natu		eded, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map sho	owing sampling point I	ocations, transects, important feature	s, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Samplec within a Wetlan	X	
Remarks: Not all three pe	waneters pr	esent	
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two re	<u>quired)</u>
Primary Indicators (minimum of one is required; check all that	apply)	Surface Soil Cracks (B6)	
	quatic Plants (B14)	Sparsely Vegetated Concave Surface	e (B8)
	en Sulfide Odor (C1)	Drainage Patterns (B10)	
	ed Rhizospheres on Living Roc		
	ice of Reduced Iron (C4)	Dry-Season Water Table (C2) Crayfish Burrows (C8)	
	t Iron Reduction in Tilled Soils	Saturation Visible on Aerial Imagery	(CQ)
•	luck Surface (C7) (Explain in Remarks)	Stunted or Stressed Plants (D1)	(00)
Iron Deposits (B5)	(Explain in Remarks)	Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)	
Water-Stained Leaves (B9)		Microtopographic Relief (D4)	
Aquatic Fauna (B13)		FAC-Neutral Test (D5)	
Field Observations:			
	n (inches):		
	n (inches):		n i
		Vetland Hydrology Present? Yes No	'X -
(includes capillary fringe)	r (incries):v	vetanu Hydrology Present: 103 105	
Describe Recorded Data (stream gauge, monitoring well, ae	rial photos, previous inspectio	ns), if available:	
Remarks:		\frown	
No hydre	logg pre	sent	
	° \		

INWMHOOZ

EGETATION (Four Strata) – Use scienti	fic names of plants.	Sampling Point:
2 2 11	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size; <u>30 AF</u>) 1. (erg a clabra	<u>% Cover Species? Status</u>	Number of Dominant Species (A)
Malus pumila		17
,		Total Number of Dominant(B)
•		Species Across Air Strata.
5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
),		
**************************************	na na ana ana ana ana ana ana ana ana a	Prevalence Index worksheet:
· · · · · · · · · · · · · · · · · · ·	<u> 30</u> = Total Cover	Total % Cover of: Multiply by:
50% of total cover:	15 20% of total cover: (6	OBL species X 1 =
Sapling/Shrub Stratum, (Plot, size: 30 1		FACW species $2 = 0$ x 2 = 0
1. Rassa multi floors	5 V FACI	
. Liquestrum sinense	5 J EAC	
3. 7		UPL species $10 \times 5 = 50$
4		Column Totals: (A) (A) (A) (B)
5		Prevalence Index = $B/A = 4.32$
6,		- Hydrophytic Vegetation Indicators:
7		- 1 - Rapid Test for Hydrophytic Vegetation
8		2 - Dominance Test is >50%
9	12	3 - Prevalence Index is $≤3.0^1$
50% pf total cover	$\frac{10}{20\%}$ = Total Cover : <u>5</u> 20% of total cover: <u>2</u>	4 - Morphological Adaptations ¹ (Provide supportin
Herb Stratum (Plot size: 10 total cover		data in Remarks or on a separate sheet)
Phypolnica Americana	<u>10</u> EAC	U Problematic Hydrophytic Vegetation ¹ (Explain)
2. Rubus Jauco dormis	TO UPL	
3. Vernonianicomea	FA	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Solicaço altissima	ZD FAC	
5. Putylis glomeratas	25 $$ Erc	The state of the s
6. <u>Clechoma hoderacca</u>	15 V FAC	\Box more in diameter at breast height (DBH), regardless c
7		_ height.
8		 Sapling/Shrub – Woody plants, excluding vines, less
9		than 3 in. DBH and greater than or equal to 3.28 ft (1
10		m) tall.
11	90	 Herb – Ali herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.
50% of total cove	$r: 45 \frac{90}{20\%}$ = Total Cover B	
Woody Vine Stratum (Plot size:		 Woody vine – All woody vines greater than 3.28 ft in height.
1	an / 	
\checkmark /		
4		- Hydrophytic
5		Veretation
	= Total Cover	Present? Yes No
	er: 20% of total cover:	
Remarks: (Include photo numbers here or on a s	eparate sheet.)	

ofile Description: (Describe to the dept	n needed to document the indicator or confirm t	he absence of indicators.)
epth <u>Matrix</u> nches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc ²	Texture Remarks
drift bull itel	Color (molist) % Type Loc	CAM
-Le- beft	адарана каран такан т	
		· · · · · · · · · · · · · · · · · · ·
ype: C=Concentration, D=Depletion, RM	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil Indicators:		Indicators for Problematic Hydric Soi
Histosol (A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2) Black Histic (A3)	Polyvalue Below Surface (S8) (MLRA 147, Thin Dark Surface (S9) (MLRA 147, 148)	148) Coast Prairie Redox (A16) (MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3)	(MLRA 136, 147)
_ 2 cm Muck (A10) (LRR N) _ Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
_ Depleted Below Dark Surface (ATT) _ Thick Dark Surface (A12)	Depleted Dark Surface (F7) Redox Depressions (F8)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	3
Sandy Gleyed Matrix (S4) Sandy Redox (S5)	Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 14	 ³Indicators of hydrophytic vegetation a wetland hydrology must be present,
Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127, 147	
Restrictive Layer (if observed):		
Туре:	and the second	\ \
Depth (inches):		Hydric Soil Present? Yes No
Remarks:		0
No	hydric soil prese	the state of the s
γ υ	regence se q press	

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wwmh002_u



Upland data point wwmh002_u facing east



Upland data point wwmh002_u facing north

wwmh002_w soils



Wetland/upland soils

WETLAND DETERN	INATION DATA FORM	- Eastern Mountains	and Piedmont Region
,			5 Sampling Date: 1-14-14
pplicant/Owner: Dominion		(ang) <u></u>	State: P/A Sampling Point M/1700
$\frac{DDUEST}{}$		on, Township, Range:	
andform (hillslope, terrace, etc.): <u>Bo</u>		ief (concave, convex, none)	
2	Lat: <u>40°26' 26.</u>	89 Long: 79	37' 19 84'' Stope (%):
ubregion (LRR or MLRA): //	Lal: <u>10 x b x b :</u>	Ut Long: <u>11</u>	
oil Map Unit Name: <u>Crnest</u>		·····	NWI classification; <u>PEIM</u>
re climatic / hydrologic conditions on the site			
re Vegetation, Soil, or Hydro			ircumstances" present? Yes No
re Vegetation, Soil, or Hydro	ology naturally problem	atic? (If needed, exp	plain any answers in Remarks.)
SUMMARY OF FINDINGS – Attac	h site map showing sar	npling point location	is, transects, important features, etc.
Hydric Soil Present? Y	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes No
		<u>/</u>	
Acel Ti	the parame	ters presca	
κ.	,	i	
بر بر			
HYDROLOGY			
Wetland Hydrology Indicators:		(Secondary Indicators (minimum of two required)
Primary Inclicators (minimum of one is requ			Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide O	dor (C1) eres on Living Roots (C3)	Drainage Patterns (B10) Moss Trim Lines (B16)
Water Marks (B1)	Presence of Reduce		Dry-Season Water Table (C2)
Sediment Deposits (B2)			Crayfish Burrows (C8)
X Drift Deposits (B3)	Thin Muck Surface		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in R	emarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)			Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (Water-Stained Leaves (B9)	.87)	,	Shallow Aquitard (D3)
Aquatic Fauna (B13)			Microtopographic Relief (D4)
Field Observations:	N /	·····	
Surface Water Present? Yes	No Depth (inches):		
Water Table Present? Yes 🗡	No Depth (inches):	urFree	
Saturation Present? Yes	No Depth (inches):		lydrology Present? Yes <u> </u>
(includes capillary fringe)			• ••
Describe Recorded Data (stream gauge,	ntonitoring weir, aeriai protos, p	revious inspections), ir ava	
Remarks:	1 1 2 1	Ω	
	Hydrologie	present	
	J ()		
	"noort" "Antonio antonio"		

WWMHOD7e

50% of total cover: 20% of total cover: 0BL species x1 = apling/Shrub Stratum (Plot size: 30 + 5 0BL Sn/Lx nraph 5 0BL FAC species x3 = FAC species x3 = FAC species x3 = FAC species x4 = UPL species x4 = UPL species x5 = Column Totals: (A) UPL species x6 = UPL species x6 = UPL species x6 = UPL species x7 = UPL species x6 = UPL species x6 = UPL species	
Total Number of Commant Species Across All Strate: Percent of Dominant Species Across All Strate: Solve of total cover: 50% of total cover: 20 = Total Cover Solve of total cover: 20 = Total Cover Solve of total cover: CBL Solve of total cover: CDL Solve of total cover: CDL <	\leq
Species Species Solver of Species Species Species	(A)
Percent of the OBL, FACK, OF FAC: 20 = Total Cover 50% of total cover: 20% of total cover: 50% of total cover: 20% of total cover: 50% of total cover: 5 Safux nrand 5 Safut 5 Safut 5 Safut 5 Safut 5 Safut 1 Safut <td>/ (В)</td>	/ (В)
S0% of total cover: 20 = Total Cover Multi pling(Shrub Stratum (Plot size: 30 + 5 CBL Sara multification 5 CBL FAC species x =	<u>3</u> (A/B)
Image: Solve of total cover:	
50% of total cover: 20% of total cover: OBL species x1 = Spling/Strub Stratum (Plot size: 30 + S OBL Spling/Strub Stratum (Plot size: 30 + S OBL Spling/Strub Stratum (Plot size: 30 + S OBL Spling/Strub Stratum (Plot size: 1 S Column Totals: (A) = Prevalence index = B/A = UPL species x4 = UPL species x4 = UPL species x5 = Column Totals: (A) = Prevalence index = B/A = UPL species x5 = Solver (Plot size: 10 + 200 = Total Cover 1 Raid Test for Hydrophylic Vegetations (P Solver(Sr column Classics 20 = Total Cover 1 A morphological Adaptations (P Spling/Strub = Voody plants, sectual with the folica 20 + FefC Tree - Woody plants, sectual with the present, unless disturbed or proble height. Spling/Strub = Voody plants, sectual with the spling. 5 FefC Sell spling/Strub = Definitions of Four Vegetation Strat Tree = Woody plants, sectual with the spling. 5 FefC Sell spling/Strub = Noody plants, sectual woody plants, sectual woody plants, sectual wo	iply by:
pling/Shrub Stratum (Plot size: 30 ft S CBL FAC species x 3 =	
Safix night S CBL FAC species X3 = Roca multifier S FAC species X4 = Provide the species X5 = Column Totals: (A) Prevalence index = B/A = Problematic hydrophytic Vegetation indicators: 1 - A stratum (Plot size: 1 - A stratum (Plot size: 1 - A stratum (Plot size: 2 - A stratum (Plot size: 2 - A stratum (Plot size: 2 - A stratum (Plot size: 3 - A	
A GAA A GAA <td< td=""><td></td></td<>	
UPL species x5 = Column Totals: (A) Prevalence Index = B/A = Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 1 Rapid Test for Hydrophytic Vegetation Indicators: 20 = Total Cover 21 So% of total cover: 20 = Total Cover 21 Sominance Test is >50% 220 = Total Cover 21 Prevalence Index is \$3.0° 3 Prevalence Index is \$3.0° 4 Morphological Adaptations? (P data in Remarks or on a separ Problematic Hydrophytic Vegetati Problematic Hydrophytic Vegetati Problematic Hydrophytic Vegetation Strat 1 Concex D 1 Total Cover FAC 1 Total Cover FAC 1 Total Cover Soffinitions of Four Vegetation Strat 1 Total Cover Soffinitions of nore woody plants, excluding vines 1 Total Cover Soffinitions of nore woody plants, excluding vines 1 Total Cover Soffinitions of nore woody plants less than 3 1 Total Cover <	
Column Totals:	
Hydrophytic Vegetation Indicators: 1 Rapid Test for Hydrophytic Vegetation Indicators: 20 = Total Cover 20% of total cover: 20% 20% of total cover:	(B)
1. Rapid Test for Hydrophytic Veg 20 = Total Cover 20 = Total Cover 20% of total cover: 10 20% of total cover: 20% of total cover: 20% of total cover: 20% of total cover: <td></td>	
20 = Total Cover 2 Dominance Test is >50% 20 = Total Cover 4 Morphological Adaptations' (P 20 = Total Cover 5 FAC 20 = Total Cover 5 FAC 20 = Total Cover 0 5 20 = Total Cover 50% of total cover: 20% of total cover: 20% of total cover: 20% of total cover: 10 10 20 = Total Cover 10 10 10 20% of total cover: 20% of total cover: <td></td>	
3 - Prevalence Index is ≤3.01 50% of total cover: 20% of total cover:	getation
20 = Total Cover 3 - Prevalence intervence 50% of total cover: 0 - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: 20% of total cover: - 20% of total cover: <td></td>	
50% of total cover:	
erb Stratum (Plot size:	rovide supportin
Durceus efficiency Problematic Hydrophytic Vegetation Phot/Arris cirunal inceeca 25 Indicators of hydric soil and wetland her present, unless disturbed or problematic hydrophytic Vegetation Strate Carex comas a 25 FACM Leors a 15 FACM Asker prices 5 FAC Microssague 10 BBL Microssague 10 FAC 11 10 FAC 12 10 FAC 13 10 FAC 14 FAC FAC 15 10 FAC 16 10 FAC 17 FAC	ate sheet)
Phalmus around increase 25 Indicators of hydric soil and wetland her problemation of point vegetation strates disturbed or problemation or problematic distribution of point vegetation strates distribution distributinget distrates distributing distribution distributing d	on ¹ (Explain)
Carrex. Comos a 2.5 Indicators of hydric soil and wetland if the present, unless disturbed or proble present, unless disturbed or present, unless dis	
Loors in Urgunen 15 FACh Tupha latifolia 10 OBL Asker pulosus 5 FAC Micro skeyum Urmunea 10 FAC Micro skeyum Urmunea 10 FAC Sapling/Shrub – Woody plants, excluding vines more in diameter at breast height (DB height. Sapling/Shrub – Woody plants, excluting vines more in diameter than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than or equivalent than 3 in. DBH and greater than 3 in. Advised that a start the s	nydrology must
Tupha latifolia 70 0BL Askr prosus 5 FAC Microsslacyum Urinturea 70 FAC Microsslacyum Urinturea 70 FAC Image: Solution of total cover: 50% of total cover: 50% of total cover: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2	
A:skr p./osus 5 FAC Microsslagum unmunea 40 FAC Microsslagum unmunea 40 FAC Sapling/Shrub - Woody plants, excluding vines more in diameter at breast height (DB height. Sapling/Shrub - Woody plants, exclut than 3 in. DBH and greater than or equin it than 3 in. DBH and greater	ta:
Micro skeyun vinunea 40 FAC Inde in diameter di breact reign (be Image: Solo of total cover: 50% of total cover: Solo of total cover: 50% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover: Image: Solo of total cover: 20% of total cover:	s, 3 in. (7.6 cm) o
Sapling/Shrub – Woody plants, exclution 0	H), regardless c
0. m) tall. 1. Image: Solution of total cover: Solu	uding vines, less
1. Image: Solution of total cover: Image: Solution of tota	juai to 3.20 it (1
Image: Solution of total cover: Solution	-leute verendlug
50% of total cover: 50% of total cover: 20% of total cover: 20% Woody Vine Stratum (Plot size: 30 by) Hight. Hydrophytic	
Woody Vine Stratum (Plot size: 30 ft)	
1.	er than 3.28 ft in
3. 3. 4. <	
3. 0.000	
5 = Total Cover 50% of total cover: 20% of total cover: Hydrophytic Vegetation Present? Yes N	
5 = Total Cover Vegetation Present? Yes N 50% of total cover: 20% of total cover:	
= Total Cover Present? Yes // N 50% of total cover: 20% of total cover:	
	lo
Remarks: (Include photo numbers here or on a separate sheet.)	

WWM	HOD	7e
Sampling Point	1	K/

th	iption: (Describe to Matrix		Redox	Features				
hes)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
-11	104R311		104R 4/14	22	<u> </u>	ma	k	
-18	104R 4/2		104R 4/2	172		m		
	,					*******	***************************************	
							······	
				, <u>.</u>				
		<u></u>						
ومحاديد وارزوا والمعا					•			
							·····	
						· ·····		
	oncentration, D=Dep	etion, RM=	Reduced Matrix, M	S=Masked	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
	ndicators:							ators for Problematic Hydric Soils ³ :
Histosol Histic Er	(A1) bipedon (A2)		Dark Surface		(58)	11 00 117		: cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Black Hi			Thin Dark Si				, 140) ((MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix			F	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surfac	ο (Δ11)	Redox Dark					/ery Shallow Dark Surface (TF12) Dther (Explain in Remarks)
	ark Surface (A12)		Redox Depr				·······	
Sandy N	/lucky Mineral (S1) (I	.RR N,	Iron-Mangai			(LRR N,		
	A 147, 148)		MLRA 1				3,	the second s
	Gleyed Matrix (S4) Redox (S5)		Umbric Surf					dicators of hydrophytic vegetation and etland hydrology must be present,
	d Matrix (S6)		Red Parent					nless disturbed or problematic.
strictive	Layer (if observed)	;						
								\checkmark
	iches):						Hydric So	il Present? Yes X No
marks:					11	\cap	· · · ·	
					42	serra	soil	present
					4			1

wwmh007e_w



Wetland data point wwmh007e_w facing east



Wetland data point wwmh007e_w facing south

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region City/County: Westmorelut Sampling Date: Project/Site: State: Sampling Poin Applicant/Owner: Dominior DANIS Investigator(s): Section, Township, Range: Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%): Lona: 790 37 Lat: 40°26'26.70" 10.31 Subregion (LRR or MLRA): Datum: Soil Map Unit Name: 177) NWI classification; Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? No Yes within a Wetland? Wetland Hydrology Present? Yes No Remarks: parameters are present ttoo **HYDROLOGY** Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) ____ Sparsely Vegetated Concave Surface (B8) Surface Water (A1) ____ True Aquatic Plants (B14) ____ Drainage Patterns (B10) ____ High Water Table (A2) ____ Hydrogen Sulfide Odor (C1) ___ Oxidized Rhizospheres on Living Roots (C3) ____ Moss Trim Lines (B16) Saturation (A3) _ Water Marks (B1) ____ Dry-Season Water Table (C2) Presence of Reduced Iron (C4) ____ Crayfish Burrows (C8) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) ____ Saturation Visible on Aerial Imagery (C9) ____ Drift Deposits (B3) Thin Muck Surface (C7) ____ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) ____ Microtopographic Relief (D4) FAC-Neutral Test (D5) Aquatic Fauna (B13) Field Observations: Surface Water Present? Mo Depth (inches): Water Table Present? No Depth (inches):____ Wetland Hydrology Present? Yes _____ Saturation Present? No Depth (inches): Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology present

いいmHの7 Sampling Point:_____

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute	Dominant li	ndicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: $3\partial Sf_{}$)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC:
2				
3,				Total Number of Dominant Species Across All Strata:
4			1	
5				Percent of Dominant Species
				That Are OBL, FACW, or FAC: (A/B)
6	··· ····			Prevalence Index worksheet:
/				Total % Cover of: Multiply by:
		= Total Cove		OBL species x1 =
50% of total cover:	20% c	of total cover:		FACW species $2 = 2$
Sapling/Shrup Stratum (Plot size: 30 +)				
1. Colla	-			$rac species res x_3 = \frac{1}{100}$
2. Rubinia pseudoacia	-10		FACY	
3. ROSA Multiflorm	15	/	FACU	UPL species $_$ \bigcirc x 5 = \bigcirc Column Totals: 115 (A) -150 (B)
4				
5				Prevalence Index = $B/A = 3.91$
6				Hydrophytic Vegetation Indicators:
7			·	1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	25	_ = Total Cov	er –	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: <u>[Z</u>	.5 20%	of total cover:	2	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 10 St)	60			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Pagtylis glomerata	_ o Ç		EACL	
2. Trytokin protense	-10		FACU	¹ Indicators of hydric soil and wetland hydrology must
3. Rumex crispus	_ <u>_10</u>		FAC	be present, unless disturbed or problematic.
4. TARAXACUM Officinale			FACI	Definitions of Four Vegetation Strata:
5			· ·····	
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11			-	- - Herb – All herbaceous (non-woody) plants, regardless
	90	= Total Co	ver	of size, and woody plants less than 3.28 ft tall.
50% of total cover:	5 20%	of total cove	r: /8	
Woody Vine Stratum (Plot size: 30 H)				 Woody vine – All woody vines greater than 3.28 ft in height.
1				
2				-
3				~ {
4				-
5				 ─ Hydrophytic ↓ Vegetation
		= Total Co		Present? Yes No
50% of total cover:	20%	= rotarcc	ar:	
Remarks: (Include photo numbers here or on a separat			· ••••••••••••••••••••••••••••••••••••	

ω	WMB	40070
ん Sampling	Point:	ÂØ.

Profile Description: (Describe to the depth needed to document the indicator or confirm	the absence of	indicators.)
Depth Matrix Redox Features (inches) Color (moist) % Color (moist)	Taxburg	Domotivo
$\frac{\text{(inches)}}{\mathcal{O}-3} = \frac{\text{Color (moist)}}{\mathcal{O}-3} \frac{\%}{\mathcal{O}-3} \frac{\text{Color (moist)}}{\mathcal{O}-3} \frac{\%}{\mathcal{O}-3} \frac{1}{\mathcal{O}-3} \frac{\%}{\mathcal{O}-3} \frac{1}{\mathcal{O}-3} \frac{\%}{\mathcal{O}-3} $	Texture	Remarks
	Lorgm	
3-8 10 4R 5/2/	-Lonn	
8.16+ 104R21/21	_ Clay li	P47M
	J	
	- <u></u>	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL-	Pore Lining, M≕Matrix.
Hydric Soil Indicators:		ors for Problematic Hydric Soils ³ :
Histosol (A1) Dark Surface (S7)		m Muck (A10) (MLRA 147)
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147,		ast Prairie Redox (A16)
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)		MLRA 147, 148)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3)		dmont Floodplain Soils (F19)
Stratified Layers (A5) Depleted Matrix (F3) 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)		(MLRA 136, 147) ry Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)		ner (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8)	March and a	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,		
MLRA 147, 148) MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)	31	store of hydrophytic version and
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 146, 122)		ators of hydrophytic vegetation and and and and and and and and and an
reduition foodplain Solis (149) (MLRA 12 Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 14		ess disturbed or problematic.
Restrictive Layer (if observed):		
Туре:		. /
Depth (inches):	Hydric Soil I	Present? Yes No 🔀
Remarks:		
No hydric Soil present		
No Rydove Dow present	\mathcal{L}	

wwmh007_u



Upland data point wwmh007_u facing east



Upland data point wwmh007_u facing south

wwmh007 soils



Wetland/upland soils

WETLAND DETERMINATION DATA F	ORM – Eastern Mountains and Piedmont Region
Project/Site: DTI Symply bender	_ City/County: Westmore Lignal sampling Date: 11-13-14
Applicant/Owner:	State: PA Sampling Point: WWMH023
Investigator(s): DD (LEST (a	
	_ Section, Township, Range:
	Elicarreller (concave, convex, none): / 17/21/20/ Slope (%):
Subregion (LRR or MLRA):	52.52" Long: 79°37 40.98" Datum: WGS 84
Soil Map Unit Name: DDdel	NWI classification: $P - Q$
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significar	ntly disturbed? Are "Normal Circumstances" present? Yes 📈 No
Are Vegetation, Soil, or Hydrology naturally	
· · · ·	· · ·
SUMIMARY OF FINDINGS - Attach site map show	ng sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: All three parar	neters present
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that app	
	ic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	Sulfide Odor (C1) Drainage Patterns (B10)
	hizospheres on Living Roots (C3) Moss Trim Lines (B16)
	Dry-Season Water Table (C2)
	n Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Surface (C7) Saturation Visible on Aerial Imagery (C9)
	Surface (C7) Saturation Visible on Aerial Imagery (C9) Iain in Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	\underline{X} FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No / Depth (in	
Water Table Present? Yes No X Depth (in	
Saturation Present? Yes Xo Depth (in (includes capillary fringe)	ches): Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial	photos, previous inspections), if available:
Demedia	
Remarks:	0 from the
1 Mag	loo loga present
2	

	Absolute	Dominant		Dominance Test worksheet:
estratum (Plot size: 30 fl)	<u>% Cover</u>	Species?		Number of Dominant Species
Splix aign Arer rulrum	$-\frac{70}{10}$		OBL	That Are OBL, FACW, or FAC:(A)
			FAC	Total Number of Dominant
		· ····		Species Across All Strata: (B)
			(Percent of Dominant Species
			1	That Are OBL, FACW, or FAC: (A/B)
NI (King Ning Ching)				Prevalence Index worksheet:
			• •••••••••••••••••••••••	Total % Cover of:Multiply by:
		= Total Cov		OBL species x1 =
50% of total cover:	<u>25</u> 20% of	f total cover	10	
apling/Shrub Stratum (Plot size: 30)	10			FACW species x 2 =
Acer mlinim	$-\frac{10}{10}$		J-AC	FAC species x 3 =
SALIX II GAR	_ 30		OBL	FACU species X 4 =
/				UPL species $x 5 = $
				Column Totals: (A) (B)
				Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
-				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
50% of total cover:	$\frac{10}{20\%}$	= Total Co	over	4 - Morphological Adaptations ¹ (Provide supporting
lerb Stratum (Plot size: $(0, 4)$	20/00			data in Remarks or on a separate sheet)
Rullus arvensis	15	J	EAX	Problematic Hydrophytic Vegetation ¹ (Explain)
Panvena clandestinun	$-\frac{10}{25}$		FAC	
· Polygonum sightsteen	17)	- Ť	FACIN	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Phakeris avundinceas	15		FACIN	De present, unless distance of problemation
				Deminions of Four vegetation Stata.
· · · · · · · · · · · · · · · · · · ·				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
· · · · · · · · · · · · · · · · · · ·				height.
3,				
),				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
0				m) tall.
1				- Herb - All herbaceous (non-woody) plants, regardless
***	<u> </u>	= Total C	over 🦔	of size, and woody plants less than 3.28 ft tall.
50% of total cover:	20%	of total cov	er:9	Woody vine – All woody vines greater than 3.28 ft in
Noody Vine Stratum (Plot size:)				height.
1				-
2				-
3K DN7				-
4				- Hydrophytic
5				_ Vegetation
		= Total C		Present? Yes No
C 50% of total cover: _		of total cov	/er:	
Remarks: (Include photo numbers here or on a separ	ate sheet.)			

WWMHO03	f.
Sampling Point:	$\tilde{\mathbb{W}}$

TOHIS DESCRIPTION, THESCHIPTO HE OFFICIATE DEPART IS DEPART TO DEPART THE INDUSTRY TO TOTAL	the abcongo of indicators)
Profile Description: (Describe to the depth needed to document the indicator or confirm	the absence of indicators.)
Depth <u>Matrix Redox Features</u> (inches) Color (moist) % Color (moist) % Type ¹ Loc ²	Texture Remarks
1-4 10YR 4/2 10YR 4/4 75	LOAM
and a second and a second a second a second a second a second a second	LDAM
-12 104R 412 104R 444446710	
2-16-104R4/1 104R4/4 710	LONAM
	ىلەر بىلەر يەلىرىكە بىرىكى بىلەر بىلەر بىلەر بىلەر بىل
արտանությունը հրատես հարարական հարարական հարարարարությունը հրատեստանությունը։ հերուս հարարական հարարական հարարա	
	21
Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ydric Soil Indicators:	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histoso (AT) Dark Surface (S7) Histoso (AT) Polyvalue Below Surface (S8) (MLRA 147,	
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4)Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5) Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148) MLRA 136)	
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 1	
Stripped Matrix (S6)Red Parent Material (F21) (MLRA 127, 14	17) unless disturbed or problematic.
Restrictive Layer (If observed):	
Type: Depth (inches):	Hydric Soil Present? Yes No
Remarks:	
itemente:	
remarks.	ħ
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(Hydre Seil pres	sat
	sect-
	sect-
	set
	sat
	sat
	sect
	sect
	sect
	set
	sat
	sat
	set
	set
	sat
	sat

wwmh003f_w



Wetland data point wwmh003f_w facing south



Wetland data point wwmh003f_w facing west

WETLAND DETERMINATION DATA FORM -	Eastern Mountains and Piedmont Region				
~	bunty: Westmore And Sampling Date:				
Applicant/Owner: Danuaron	State: PA Sampling Point:U				
Investigator(s): DD WS 557 Section					
	n, Township, Range:				
	of (concave, convex, none): Slope (%): 10				
Subregion (LRR or MLRA): Lat:	.63" Long: 79° 37' 41.13" Datum: Was 84				
Soil Map Unit Name:	NWI classification: YUDYUE				
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	es No (If no, explain in Remarks.)				
Are Vegetation, Soil, or Hydrology significantly disturb	ped? Are "Normal Circumstances" present? Yes X No				
Are Vegetation, Soil, or Hydrology naturally problema					
SUMMARY OF FINDINGS – Attach site map showing sam					
Solument of Findbinds - Attach site map showing sam	pling point locations, transects, important reatures, etc.				
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No				
Remarks: Not all three parame	ters present				
HYDROLOGY					
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)				
	Surface Soil Cracks (B6) (B14) Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2) High Water Table (A2)					
	es on Living Roots (C3) Moss Trim Lines (B16)				
Water Marks (B1) Presence of Reduced	-				
	on in Tilled Soils (C6) Crayfish Burrows (C8)				
Drift Deposits (B3) Thin Muck Surface (
Algal Mat or Crust (B4)Other (Explain in Rei					
Iron Deposits (B5)	Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Microtopographic Relief (D4)					
Aquatic Fauna (B13)	FAC-Neutral Test (D5)				
Field Observations:					
Surface Water Present? Yes No X Depth (inches):					
Water Table Present? Yes No X Depth (inches):					
Saturation Present? Yes No 🔀 Depth (inches):					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pr					
Remarks:	\bigwedge				
No hydrology					
() () () () () () () () () ()	preservy				
\sim \sim					

VEGETATION (Four Strata) – Use scientific names of plants.	VEGETATION (Four Strata) – Use	scientific	names of	plants.
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Sampling Point:

N	Absolute Dominant	ndicator	Dominance Test worksheet:
Tree Stratum (Plot size:30 ++)	<u>% Cover Species?</u>		Number of Dominant Species
1. Prunus serostina	30 1	FACU	That Are OBL, FACW, or FAC: (A)
-		21-20	
2.,,,,,,,,,,,,	· ····································		Total Number of Dominant
3			Species Across All Strata:(B)
4			
-			Percent of Dominant Species
5,			That Are OBL, FACW, or FAC: (A/B)
6			
7.			Prevalence Index worksheet:
	30 = Total Cov		Total % Cover of: Multiply by:
			OBL species x 1 =
50% of total cover: <u>15</u>	20% of total cover:	<u> </u>	
Sapling(Shrub Stratum (Plot size: 30 ff-)	/		FACW species x 2 =
1. Robinia pseuloacacia	20 V	FACU	FAC species X 3 =
		4-1-0	FACU species 140 x 4 = 560
2			UPL species $(0 \times 5 = 50)$
3			
4			Column Totals: (50) (A) (610) (B)
5			$4 \Lambda 7$
			Prevalence index = $B/A = 4.07$
6			Hydrophytic Vegetation Indicators:
7,			1 - Rapid Test for Hydrophytic Vegetation
8			2 - Dominance Test is >50%
9			
·	20 Total Car		3 - Prevalence Index is ≤3.0 ¹
50% of total cover: <u>LC</u>	$\frac{20}{200}$ = Total Co		4 - Morphological Adaptations ¹ (Provide supporting
		·	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 10 55)	20 /		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Glechoma hederakea	<u>- 30 V</u>	EACL	4
2. Solutions altosima	15 V	FACL	
3. Rubus al Cahonicuss		EACL	I 'Indicators of hydric soil and wetland hydrology must
		PACI	
4. Thy to lacca come or gener	- +		Deminions of Four vegetation State.
5. Senuce la concercación		FACI	
6. Kulus Telleo domis	1D	12191	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
			more in diameter at breast height (DBH), regardless of
7			, height.
8,			Sapling/Shrub - Woody plants, excluding vines, less
9			than 3 in. DBH and greater than or equal to 3.28 ft (1
10.			m) tall.
11	- 90 - Total Co		Herb – All herbaceous (non-woody) plants, regardless
	$\frac{90}{10}$ = Total Co	over 10	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 4	<u>5</u> 20% of total cove	er: <u>()</u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 3047)		/	height.
1. Partheneciscon anin motoli	a 10	EACL	1 Norgina
1-101 prostile (19506) chun que tor		- Tree	2
2			-
3			-
4.			
κ			- Hydrophytic
5			_ Vegetation Present? Yes No
	Total C	,	
50% of total cover:	5 20% of total cov	er:	
Remarks: (Include photo numbers here or on a separat	te sheet.)		

SOIL

WWMHOO	3	
ampling Point	Ú	r

Sampling	Point:	
Carripining		

Profile Description: (Describe to the de	oth needed to document the ir	ndicator or confirm t	he absence of	indicators.)	
Depth Matrix	Redox Features	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Demonstra	
(inches) Color (moist) %	Color (moist) %	Type ¹ Loc ²	Texture	Remarks	<u></u>
1 WAR 112			1400.00	<u></u>	
6-11 MR 4/3			10Am		
11-18+ 104R'4/4			LOAM		
		e			
	,	· · · · · · · · · · · · · · · · · · ·			
				<u></u>	
¹ Type: C=Concentration, D=Depletion, RI	M=Reduced Matrix, MS=Masked	Sand Grains.	² Location: PL=	=Pore Lining, M=Matrix.	
Hydric Soil Indicators:	***************************************			ors for Problematic Hyd	dric Soils ³ :
Histosol (A1)	Dark Surface (S7)			m Muck (A10) (MLRA 14	17)
Histic Epipedon (A2)	Polyvalue Below Surfa			ast Prairie Redox (A16)	
Black Histic (A3) Hydrogen Sulfide (A4)	Thin Dark Surface (S9 Loamy Gleyed Matrix			(MLRA 147, 148) edmont Floodplain Soils ((210)
Stratified Layers (A5)	Depleted Matrix (F3)	(F2)		(MLRA 136, 147)	F 19)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)		ry Shallow Dark Surface	(TF12)
Depleted Below Dark Surface (A11)	Depleted Dark Surface		Oth	her (Explain in Remarks)	
Thick Dark Surface (A12)	Redox Depressions (F				
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	Iron-Manganese Mass MLRA 136)	Ses (F12) (LRR N,			
Sandy Gleyed Matrix (S4)	Umbric Surface (F13)	(MLRA 136, 122)	³ Indic	cators of hydrophytic veg	etation and
Sandy Redox (S5)	Piedmont Floodplain		8) wet	land hydrology must be p	present,
Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127, 14	7) unle	ess disturbed or problema	atic.
Restrictive Layer (if observed):					c
Type:					. X
Depth (inches):	****		Hydric Soil	Present? Yes	<u>No </u>
Remarks:	a		-0	\cap	
	$\wedge \wedge \wedge$	lydric s	iert p	reseast	
		2-		•	

ort-yelle

. An

wwmh003_u



Upland data point wwmh003_u facing east



Upland data point wwmh003_u facing north

wwmh003_w soils



Wetland/upland soils

WETLAND DETERMINATION DATA FORM -	- Eastern Mountains and Piedmont Region
Project/Site: DTI Supply Hencer City/C	ounty: Destmoreland Sampling Date:
Applicant/Owner: Domicicion	ounty: <u>Dest Morel And</u> Sampling Date: <u>20</u> State: <u>20</u> State: <u>20</u> Sampling Point: <u>20</u> State: <u>20</u> Sampling Point: <u>20</u> Sampling Poin
nvestigator(s): DDWEST Section	on, Township, Range:
Landform (hillslope, terrace, etc.):	
Subregion (LRR or MLRA): Lat:	.36" Long: 79° 37' 57.85 Datum: W65 84
Soil Map Unit Name:	NWI classification: PEIM
Are climatic / hydrologic conditions on the site typical for this time of year? Y	
Are Vegetation, Soil, or Hydrology significantly distur	7
Are Vegetation, Soil, or Hydrology naturally problema	
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area No
Remarks: Small Sepressional well.	and (hespeans) within
	and area and a company
fasture	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (
High Water Table (A2) Hydrogen Sulfide Od	
X Saturation (A3) X Oxidized Rhizospher Water Marks (B1) Presence of Reduced	es on Living Roots (C3) Moss Trim Lines (B16) d Iron (C4) Dry-Season Water Table (C2)
	on in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (· · ·
Algal Mat or Crust (B4) Other (Explain in Rel	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Aquatic Fauna (B13)	Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes X No Depth (inches):	,5
Water Table Present? Yes X No Depth (inches): 50	
Saturation Present? Yes 🔨 No Depth (inches): 52	where Wetland Hydrology Present? Yes <u>No</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pro-	evious inspections), if available:
Remarks:	
Figaronog g pro	ssion within pasture
Observan derne.	ssim within pasture
Corress aufra	

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point:
		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 (f</u>) 1		Species?		Number of Dominant Species (A)
2				
3. <u>and</u>				Total Number of Dominant Z (B)
4			[
5			1	Percent of Dominant Species That Are OBL, FACW, or FAC:
6			1	
7				Prevalence Index worksheet:
		= Total Cov	/er	Total % Cover of: Multiply by:
50% of total cover:	20% 0	f total cover	·	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 30 (7)				FACW species x 2 =
1		<u></u>		FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5 6				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
9				2 - Dominance Test is >50%
************************************		= Total Co	ver	3 - Prevalence Index is ≤3.0 ¹
50% of total cover:	20% (-		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 10 (4))	~			data in Remarks or on a separate sheet)
a lite device a set of	25		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Leptachlon, panicea	405		FACEN	
3. Tuncus ettilsus	5		FACW	be present, unless disturbed or problematic.
4. Carex compsit			FACE	Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub - Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	100	_ = Total Co	ver.	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>50</u>	20%	of total cove	r:	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30 (+))				height.
1		<u> </u>		
2				
3				
4				Hydrophytic
5				Vegetation Present? Yes No
50% of total cover:	20%	_ = Total Co of total cove		
Remarks: (Include photo numbers here or on a separate			·····	
	0.1000.7			

WWM1-1008e

Sampling Point: _

Profile Description: (Describe to the depth need	led to document the indicator or confirm t	he absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
	$\frac{\text{or (moist)}}{2} = \frac{\%}{2} = \frac{\%}{2} = \frac{\%}{2}$	Texture Remarks
0-9 IDYR3/1 07		
		CLAY LOAMA
13-18t 104R 4/1 104	<u>e 4/4 75 C M</u>	6104m
		2
¹ Type: C=Concentration, D=Depletion, RM=Reduc Hydric Soil Indicators:	ed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
-	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	Dark Surface (S7) Polyvalue Below Surface (S8) (MLRA 147, 1	
	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3) Redox Dark Surface (F6)	(MLRA 136, 147) Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)	
	Iron-Manganese Masses (F12) (LRR N,	<i>'</i>
MLRA 147, 148)	MLRA 136) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Gleyed Matrix (34)	Piedmont Floodplain Soils (F19) (MLRA 148	
Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127, 147)	
Restrictive Layer (if observed):		
Туре:		
Depth (inches):		Hydric Soil Present? Yes <u>No</u>
Remarks:	Hydric son essional wetland	I present
	i a lland	i within pastiere
SMAU depi	essioned we mind	· _ / / / / / /
st upland	lauton but h	ns still retained racteristics.
b oprime (Inglosh (, or)	
all wetter	nd & hydric chan	racteristics,

wwmh008e_w



Wetland data point wwmh008e_w facing east



Wetland data point wwmh008e_w facing south

	11-15-14
	i i i i i i i i i i
Project/Site:	Dia
	State: Sampling Point:
Investigator(s): DDDDEST	inge:
Landform (hillslope, terrace, etc.): hills he Local relief (concave, con	vex, none): <u> </u>
Subregion (LRR or MLRA): Lat: 40° 27' 01. 19" Lor	ng: 79° 37' 52.04 Datum: 1.06584
Soil Map Unit Name:	NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No	(If no. explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are	
	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Undrig Soil Drosont2 Vos No	V 1
Wetland Hydrology Present? Yes No Xes	
	A
Remarks: Not all three parameters	preserv
,	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Age of the control of the cont	
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Vider Marks (51) Recent Iron Reduction in Tilled Soils	-
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Water Table Present? Yes No Depth (inches):	\sim
Saturation Present? Yes No Depth (inches): W	Vetland Hydrology Present? Yes No_
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection	ns), if available:
Denne las	A
Remarks: No hydrolozy water	
NO ANTOLOZIU DOBLECO	s present
	T

Sampling Point:

VEGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Poil	nt:	
		Dominant In		Dominance Test worksheet:	,	
<u>Tree Stratum</u> (Plot size: <u>30</u> ₩) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:		(A)
2				Total Number of Dominant Species Across All Strata:	((B)
				Species Across Air Strata.		(6)
45				Percent of Dominant Species That Are OBL, FACW, or FAC:	\underline{O}	(A/B)
6				Prevalence Index worksheet:		
		= Total Cover		Total % Cover of:	Multiply by:	
50% of total cover:				OBL species x	1 =	
Sapling/Shrub Stratum (Plot size: 30 54			_	FACW species x	2 =	
1				FAC species x	3 =	
8			i	FACU species x	4 =	
				UPL species x	5 =	
				Column Totals: (A		
4 5						
5				Prevalence Index = B/A =	·	
6/				Hydrophytic Vegetation Indica	tors:	
7				1 - Rapid Test for Hydrophy	tic Vegetation	
8				2 - Dominance Test is >50%		
9				3 - Prevalence Index is ≤3.0		
		= Total Cove		4 - Morphological Adaptation		pporting
50% of total cover:	20% c	of total cover:_		data in Remarks or on a	separate sheet)
Herb Stratum (Plot size: (0 64))	0		-	Problematic Hydrophytic Ve	detation ¹ (Expl	ain)
1. Ductuelis colomo rata	- H U_		FAC			,
2. Glernom hederacea	5_		FACU	¹ Indicators of hydric soil and wet	land hydrology	must
3. Tritolinemprotense	_ 10		FACV	be present, unless disturbed or i		must
4. Rumex crispus			FAC	Definitions of Four Vegetation		
5	·····			-		
6				Tree – Woody plants, excluding more in diameter at breast heigh	vines, 3 in. (7.6	5 cm) or
7				height.	it (DBH), regain	
8						
9				Sapling/Shrub – Woody plants, than 3 in. DBH and greater than	excluding vine	es, less
10				m) tall.	or equal to 3.2	.0 // (1
10						
· ·	180	= Total Cove	 r م	Herb – All herbaceous (non-woo of size, and woody plants less th	ody) plants, reg han 3.28 ft tall.	ardless
50% of total cover: 50	20%	of total cover:	10	Woody vine - All woody vines	greater than 3.2	28 ft in
Woody Vine Stratum (Plot size: 3037)				height.		
1						
2						
3						
4				Hydrophytic		
5				Vegetation	\sim	
		= Total Cove	er	Present? Yes	No <u>/</u>	-
50% of total cover:	20%	of total cover:				
Remarks: (Include photo numbers here or on a separate		·				
Pasture						
1 mg will						
5						

WWMHOOS

Profile Descr	iption: (Describe to	o the depth r	needed to docur	nent the i	ndicator	or confirm	the absence of i	ndicators.)
Depth	Matrix	•		x Features	5			
(inches)	Color (moist)	%	~	%	Type ¹	Loc ²	<u> </u>	Remarks
0-14	104R 4/3						LOAM	
14-18+	INYR YICI		·····				LORAN	
1	11,1-11 11 1			·····		•••••••	_ <u>MO in M_</u>	\
								· · · · · · · · · · · · · · · · · · ·
	<u> </u>					·····		

		·····		*****				
	ncentration, D=Deple	ation PM-Pe	duced Matrix M	S-Maskad		aine	² Location: PL-P	Pore Lining, M=Matrix.
Hydric Soil I			duced matrix, m	S-INDSKED	1 Janu On			rs for Problematic Hydric Soils ³ :
Histosol			Dark Surface	e (S7)				Muck (A10) (MLRA 147)
1	ipedon (A2)	•	Polyvalue Be		ce (S8) (N	ILRA 147,		st Prairie Redox (A16)
Black His	•		Thin Dark Si					ILRA 147, 148)
	n Sulfide (A4)		Loamy Gley		F2)			mont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma					1LRA 136, 147)
	ck (A10) (LRR N)		Redox Dark					Shallow Dark Surface (TF12)
1	l Below Dark Surface Irk Surface (A12)	(ATT)	Depleted Da Redox Depr					er (Explain in Remarks)
	lucky Mineral (S1) (L	RR N.	Iron-Mangar			LRR N.		
	147, 148)		MLRA 13					
	leyed Matrix (S4)		Umbric Surf	•	(MLRA 13	6, 122)	³ Indica	tors of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont FI	oodplain S	ioils (F19)	(MLRA 14		nd hydrology must be present,
Stripped			Red Parent	Material (F	21) (MLR	A 127, 147	') unles	s disturbed or problematic.
Restrictive L	.ayer (if observed):							
Туре:								\checkmark
	:hes):						Hydric Soil Pr	esent? Yes <u>No X</u>
Remarks:			A 20	6	0	~	- 0	sresul
			ρ_0	Ry	de	2	SOU	Sresur
				0				

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wwmh008_u



Upland data point wwmh008_u facing east



Upland data point wwmh008_u facing south

wwmh008 soils



Wetland/upland soils

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region ISuppy Hender City/County: Wastmore Innel Sampling Date 15-Project/Site: 101 State: PA Sampling Point: Applicant/Owner: Domlinion Investigator(s): DD いとうて Section, Township, Range: Landform (hillslope, terrace, etc.): bottom/And depression ocal relief (concave, convex, none): <u>Concisive</u> Slope (%): Lat: 40° 27 03.91 Long: 79° 37' 54.26" Datum: Subregion (LRR or MLRA): Soil Map Unit Name: 1 Dhear for ____ NWI classification: $\mathbb{P}\mathcal{E}\mathcal{M}$ Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ___ Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area Yes _____ No _____ Hydric Soil Present? Yes No____ within a Wetland? Wetland Hydrology Present? Yes No Remarks: Throw depressional wetland within fload lain of small Perennus streigen **HYDROLOGY** Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) ____ Surface Soil Cracks (B6) ____ Sparsely Vegetated Concave Surface (B8) Surface Water (A1) ____ True Aquatic Plants (B14) ____ Hydrogen Sulfide Odor (C1) ____ Drainage Patterns (B10) High Water Table (A2) \overline{X} Saturation (A3) ____ Moss Trim Lines (B16) \times Oxidized Rhizospheres on Living Roots (C3) ____ Dry-Season Water Table (C2) Presence of Reduced Iron (C4) ____ Water Marks (B1) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) ____ Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) _ Thin Muck Surface (C7) ____ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) Stunted or Stressed Plants (D1) ____ Iron Deposits (B5) \sum Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) ____ Shallow Aquitard (D3) \times Water-Stained Leaves (B9) Microtopographic Relief (D4) 🖞 FAC-Neutral Test (D5) Aquatic Fauna (B13) Field Observations: No ____ Depth (inches): <u>__</u> Surface Water Present? No ____ Depth (inches): 5 JT FACE Water Table Present? Yes No ____ Depth (inches); SUCTACC Wetland Hydrology Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Hydrology present

WWMHOOG Point Samplir

	names of	plants.		Sampling Point:
ee Stratum (Plot size: 30 ff)		Dominant	1	Dominance Test worksheet:
SAIX_NIGRA		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
			1	Total Number of Dominant 5 (B)
		<u></u>		Percent of Dominant Species
				That Are OBL, FACW, or FAC: (A/B)
				Prevalence Index worksheet:
···	10_	= Total Cov	er	Total % Cover of:Multiply by:
50% of total cover: <u>5</u>	20% of	total cover:	2	OBL species X 1 =
pling/Shrub Stratum (Plot size: <u>30 (</u>)	i creame	. (FACW species X 2 =
Acer rubrum			FAC	FAC species X 3 =
				FACU species x 4 = UPL species x 5 =
				,
			······	Column Totals: (A) (B)
				Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
	15	= Total Cov	/er	3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 7.5	20% 0	f total cover:	3	4 - Morphological Adaptations ¹ (Provide supporting
erb Stratum (Plot size:		/		data in Remarks or on a separate sheet)
Tupha Intidolica	30		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
Phalanis arundinacoa	30		FACW	
Polycomum space them	- <u>-</u> - 2 K		OBL	¹ Indicators of hydric soil and wetland hydrology must
Vernonia giganta	- ~~		FAC	be present, unless disturbed or problematic.
Juncus & Fusus	$-\frac{3}{\sqrt{0}}$	<u> </u>	EACW	Definitions of Four Vegetation Strata:
			FALLO	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
			· ······	more in diameter at breast height (DBH), regardless of
				height.
				Sapling/Shrub - Woody plants, excluding vines, less
				than 3 in. DBH and greater than or equal to 3.28 ft (1
)				m) tall.
1	100	= Total Cov		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover.) 20% c	f total cover	: 20	Woody vine – All woody vines greater than 3.28 ft in
/oody Vine Stratum (Plot size: <u>30</u> H)				height.
·				Hydrophytic
				Vegetation
•		= Total Co	ver	Present? Yes No
*	······································	1000100		1

SOIL

WWMHOD	9c
impling Point:	$-\infty$

Sampling Point:

pth <u>Matrix</u>	Redox Features		
ches) Color (moist) %	Color (moist) % Type ¹	_Loc ² _Textu	
5 10YR 3/1	104R 4/6 720 C	MPL LOT	4m
-15 104R 4/1	104R416720 C	m Lo	Am
- 18 / DYR 4/1	104R 4H 75 C	mano	tm
		· · · · · · · · · · · · · · · · · · ·	
dric Soil Indicators:	A=Reduced Matrix, MS=Masked Sand Gr	ains. ² Locatio	on: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11)	 Dark Surface (S7) Polyvalue Below Surface (S8) (f Thin Dark Surface (S9) (MLRA Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) 		 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4)	 Redox Depressions (F8) Iron-Manganese Masses (F12) MLRA 136) Umbric Surface (F13) (MLRA 13) 		³ Indicators of hydrophytic vegetation and
Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed):	Piedmont Floodplain Soils (F19) Red Parent Material (F21) (MLF	(MLRA 148)	wetland hydrology must be present, unless disturbed or problematic.
Type: Depth (inches):		Hydri	c Soil Present? Yes 🔀 No
marks:	Hydrie s		······································
	Ŭ	8	

wwmh009e_w



Wetland data point wwmh009e_w facing east



Wetland data point wwmh009e_w facing south

WETLAND DETERMINATION DATA FORM	- Eastern Mountains and Piedmont Region
Project/Site: DTI Supply Hemobr City/C	County: Westmore Hand Sampling Date:
Applicant/Owner: Dominium	State: PA Sampling Point:
Investigator(s): DDUEST Secti	ion, Township, Range:
Landform (hillslope, terrace, etc.):Hillslope Local rel	lief (concave, convex, none):
Subregion (LRR or MLRA): Lat:Lat:	3.64" Long: 79° 37' 54-54" Datum W6584
Soil Map Unit Name: <u>Gilon</u>	NWI classification: NOUS
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distu	
Are Vegetation, Soil, or Hydrology naturally problem	
SUMMARY OF FINDINGS – Attach site map showing sar	npling point locations, transects, important features, etc.
N /	
Hydrophytic Vegetation Present? Yes <u>No X</u>	Is the Sampled Area
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	within a Wetland? Yes No
Remarks: Not all the parameter	25 present
•	1
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants	
High Water Table (A2) Hydrogen Sulfide Or	
Saturation (A3) Oxidized Rhizosphe Water Marks (B1) Presence of Reduce	eres on Living Roots (C3) Moss Trim Lines (B16) ed Iron (C4) Dry-Season Water Table (C2)
	ion in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (-
Algal Mat or Crust (B4) Other (Explain in Re	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes No Depth (inches):	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes <u>No Depth (inches)</u>	
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, p	revious inspections), if available:
Remarks:	<u> </u>
No hydrology pre	sont
	v (

1. 1.

Sampling Point:

VEGETATION (Four Strata) – Use scientific n	ames of plants.	Sampling Point:
22 N	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ff</u>) 1	% Cover Species? Status	Number of Dominant Species (A)
3JE		
4		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		Prevalence Index worksheet:
7		Total % Cover of: Multiply by:
50% of total cover:	= Total Cover 20% of total cover:	
Sapling/Shrub Stratum (Plot size: 30 ff-		FACW species $2 = 0$
1		FAC species $5 \times 3 = 15$
		FACU species $95 \times 4 = 380$
		UPL species x 5 =
4//		Column Totals: 00 (A) 395 (B)
5		Prevalence Index = $B/A = 3.95$
6		Hydrophytic Vegetation Indicators:
8		1 - Rapid Test for Hydrophytic Vegetation
89		2 - Dominance Test is >50%
	= Total Cover	- 3 - Prevalence Index is ≤3.0 ¹
50% of total cover:		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: (0, f)	\sim /	data in Remarks or on a separate sheet)
1-fortulisglomerata	<u>80 / FACI</u>	
2. Initotuum protense	<u>10</u> <u>FAC</u>	I Indiactors of hydrig coil and watland hydrology must
3. Kumex crispus	<u>5</u> <u>FAC</u>	
4. Glechoma heleracoce	<u> </u>	U Definitions of Four Vegetation Strata:
5	· ····································	Tree Woody plants evoluting vines 2 in (7.6 cm) or
6 7		
8	•	Sapling/Shrub – Woody plants, excluding vines, less
9		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
11,	100 = Total Cover	 Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover. <u>50</u> Woody Vine Stratum (Plot size: <u>50</u> 44)	20% of total cover:2	Woody vine - All woody vines greater than 3.28 ft in
1		height.
2		-
3. NDPC		
4.		
5.		── Hydrophytic Vegetation
	= Total Cover	Present? Yes No
50% of total cover:		
Remarks: (Include photo numbers here or on a separate	sheet.)	

WWMAOO	7
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Sampling Point:

Profile Description: (Describe to the dep	th needed to document the indicator	or confirm th	e absence of ind	cators.)
Depth <u>Matrix</u>	Redox Features			
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ²	Texture	Remarks
0-11 104R 413			Lagm	
<u>[]- [87] DYR 4[4]</u>			WAM	
				······································
¹ Type: C=Concentration, D=Depletion, RM	=Reduced Matrix, MS=Masked Sand G	rains. ²		e Lining, M=Matrix.
Hydric Soil Indicators:				or Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface (S7)			uck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Below Surface (S8)			rairie Redox (A16)
Black Histic (A3) Hydrogen Sulfide (A4)	Thin Dark Surface (S9) (MLRA Loamy Gleyed Matrix (F2)	147, 148)	-	≀A 147, 148) nt Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3)			RA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)			allow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)			Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)			
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12)	(LRR N,		
MLRA 147, 148) Sandy Gleyed Matrix (S4)	MLRA 136) Umbric Surface (F13) (MLRA 1	126 122)	³ Indicators	s of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Floodplain Soils (F19			hydrology must be present,
Stripped Matrix (S6)	Red Parent Material (F21) (ML			isturbed or problematic.
Restrictive Layer (if observed):				
Туре:	yy y y y y y y y y y y y y y y y y y y			\sim
Depth (inches):			Hydric Soil Prese	ent? Yes No
Remarks:		L		
	No hydric so	: ()	0 -	
	100 Nyanc So	~ pre	sent	

wwmh009_u



Upland data point wwmh009_u facing east



Upland data point wwmh009_u facing south

wwmh009 soils



Wetland/upland soils

WETLAND DETERMINATION DATA FORM	- Eastern Mountains and Piedmont Region	
Project/Site: DTI Supply Hender City/C	County: <u>Westmore hand</u> Sampling Date: <u>1 - 15 - 1</u> State: <u>PA</u> Sampling Point: wwmh0	4
Applicant/Owner: Dominion	State PA Sampling Date	
Investigator(s): DDWEST Section	ion, Township, Range:	
Landform (hillslope, terrace, etc.): Battom Land Local rel	in, rownship, Range:	
Subregion (LRR or MLRA): N Lat. 40°27' 13.		-
Soil Map Unit Name:		24
Are climatic / hydrologic conditions on the site typical for this time of year? Y	NWI classification:	_
Are Vegetation, Soil, or Hydrology significantly distur		
Are Vegetation, Soil, or Hydrology naturally problema		-
SUMMARY OF FINDINGS – Attach site map showing sam	atic? (If needed, explain any answers in Remarks.)	
	iping point locations, transects, important features, etc.	
Hydrophytic Vegetation Present? Yes No]
Hydric Soil Present? Yes No	Is the Sampled Area within a Wetland? Yes No	:
Wetland Hydrology Present? Yes No Remarks: A A I	· · · · · · · · · · · · · · · · · · ·	
All thee parameters presen	NT	
	•	
HYDROLOGY		
Wetland Hydrology Indicators:	Consident to the destate	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
Surface Water (A1) True Aquatic Plants (F	Surface Soil Cracks (B6)	
High Water Table (A2) Hydrogen Sulfide Odo		
	or (C1) <u>X</u> Drainage Patterns (B10) es on Living Roots (C3) <u>Moss Trim Lines (B16)</u>	
Presence of Reduced	Iron (C4) Dry-Season Water Table (C2)	
Sediment Deposits (B2) Recent Iron Reduction		
Thin Muck Surface (C)	7) Saturation Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4) Other (Explain in Rem		
Iron Deposits (B5)	\mathbf{X} Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)	
Water-Stained Leaves (B9)	Microtopographic Relief (D4)	
Aquatic Fauna (B13) Field Observations:	FAC-Neutral Test (D5)	
Depth (inclues)		
Depart (incres)		
(includes capillary fringe)	Wetland Hydrology Present? Yes χ No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previ	ious inspections), if available:	
Remarks:		
Hereford Dering		
Hydrology pr	esen	

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VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wwmh010f_w

Trac Strature (DL) Zaff	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20 ft)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1. Fogues grondibolia	70_	$\underline{\checkmark}$	FACU	That Are OBL, FACW, or FAC:
2				
3				Total Number of Dominant
4			**************************************	Species Across All Strata: (B)
5				Percent of Dominant Species $\bigcirc \bigcirc$
5				That Are OBL, FACW, or FAC:
6				(v ·· =)
7				Prevalence Index worksheet:
	40	= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 27	> 20% of	total cover:	8	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 30 ft)				
				FACW species x 2 =
1				FAC species x 3 =
2	<u> </u>			FACU species x 4 =
3				UPL species x 5 =
4 m				Column Totals: (A) (B)
5				
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
9.				Z 2 - Dominance Test is >50%
J.				2^{-3} - Prevalence Index is $\leq 3.0^{1}$
		Total Cove	r	
50% of total cover:	20% of	total cover:		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size)	,	_		data in Remarks or on a separate sheet)
1. Albyn'um telix timina	11		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. MICRO Skycim Viminea	75			
3. Departure	dim set		FAL	¹ Indicators of hydric soil and wetland hydrology must
4. Agrimonia por va floris				be present, unless disturbed or problematic.
- Harmonder Jos Carlotte	10		FACW	Definitions of Four Vegetation Strata:
5. Phalmoi's anundarycoa	<u>10</u>	<u> </u>	FACW	
6. Dnoclen sensibilis	10		FALW	, Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
7			ĭ	more in diameter at breast height (DBH), regardless of
8				height.
9,		·····		Sapling/Shrub - Woody plants, excluding vines, less
9	<u> </u>			than 3 in. DBH and greater than or equal to 3.28 ft (1
10	·····			m) tall.
11				Herb - All herbaceous (non-woody) plants, regardless
2	65 =	Total Cover	r. a	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>32.5</u>	20% of t	otal cover:	13	
Woody Vine Stratum (Plot size:)				Woody vine - All woody vines greater than 3.28 ft in
1			-	height.
2. 5004		**************************************		
3 000				
л. <u>, с</u> .				
4				Hydrophytic
5				Vegetation
	=	Total Cover	.	Present? Yes No
50% of total cover:	20% of to	otal cover:		
Remarks: (Include photo numbers here or on a separate sh	eet.)			
,	,			

WWMHONG f	
Sampling Point	/

Depth <u>Matrix</u>		ment the indic.	ator or confirm	the absence	of indicators.)
(inchoc) Color (maint) 0(Redo	ox Features			-
	Color (moist)		pe ¹ Loc ²	Texture	Remarks
D-3_104R2/1	104R 414	72 0	MPL	LOAM	
3-14 10 YR 3/1	104R 4/4	72 0	c m	Lonn	
14-18+104R3/1		·			In estille
free to an and the second s	····			THUXEN	form + cabble
		· · · · · · · · · · · · · · · · · · ·			
				•••••••••••••••••	
¹ Type: C=Concentration, D=Depletion, RN	=Reduced Matrix, M	S=Masked San	d Grains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil Indicators:				Indica	ators for Problematic Hydric Soils ³ :
Listosol (A1) Listic Epipedon (A2)	Dark Surface				cm Muck (A10) (MLRA 147)
Black Histic (A3)		elow Surface (S		148) C	oast Prairie Redox (A16)
Hydrogen Sulfide (A4)		urface (S9) (ML ed Matrix (F2)	RA 147, 148)	0	(MLRA 147, 148)
Stratified Layers (A5)	Depleted Ma			F	iedmont Floodplain Soils (F19) (MLRA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark			V	ery Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)		irk Surface (F7)			ther (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depr				
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)		nese Masses (F	12) (LRR N,		
Sandy Gleyed Matrix (S4)	MLRA 13	36) ace (F13) (MLR	A 126 122)	31	
Sandy Redox (S5)		oodplain Soils (icators of hydrophytic vegetation and tland hydrology must be present,
Stripped Matrix (S6)	Red Parent	Material (F21) (MLRA 127, 147		less disturbed or problematic.
Restrictive Layer (if observed):				1	
Туре:					
Depth (inches):				Hydric Soil	Present? Yes X No
					······································
Remarks:					

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wwmh010f_w



Wetland data point wwmh010f_w facing east



Wetland data point wwmh010f_w facing south

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region
State: <u>VI</u> Sampling Point: WWMh010_U
section, rownship, Range:
Landform (hillslope, terrace, etc.): $1/2/1/2/026$ Local relief (concave, convex, none): Converse Slope (%)5 - 15 Subregion (LRR or MLRA): N Lat: $10^{\circ}27'13\cdot 22''$ Long: $79^{\circ}38'06.09''$ Datum: N
NWI classification: 95 VV(N)>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No No Is the Sampled Area within a Wetland? No No Hydric Soil Present? Yes No No No No No No Wetland Hydrology Present? Yes No No No No No No No Remarks: Nof all three parameters present Present Present No No
HYDROLOGY
Wetland Hydrology Indicators:
Primary Indicators (minimum of one is required; check all that apply) Surface Water (41)
Surface Water (A1) True Aquatic Plants (R14)
High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)
Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16)
Sediment Deposits (B2) Deposite Reduced information (C4) Dry-Season Water Table (C2)
Drift Deposits (B3)
Algal Mat or Crust (B4) Other (Explain in Remarks)
Iron Deposits (B5)
Includation visible of Aerial Imagery (B7)
Water-Stained Leaves (B9) Microtopographic Relief (D4) Microtopographic Relief (D4)
Field Observations: FAC-Neutral Test (D5)
V V
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):
Saturation Present? Yes No X Depth (inches):
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
No hydrology present

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wwmh010_u

Tree Stratum (Plot size: 30 ft)	Absolute Dominant Indicator	Dominance Test worksheet:
	<u>% Cover Species? Status</u>	Number of Dominant Species
1. Quercus culra	20 _ FACU	That Are OBL, FACW, or FAC:(A)
2. Querius veliatina	20 V UPL	Total Number of Dominant
3. frumus seriting	ZO FACU	Species Across All Strata:
4. FAGus grand, folice	25 V FACU	
5		Percent of Dominant Species / / (A/B)
6		
7	• ••••••••••••••••••••••••••••••••••••	Prevalence Index worksheet:
	85 = Total Cover	Total % Cover of: Multiply by:
50% of total cover: 12.2	S 20% of total cover: 17	OBL species \bigcirc x 1 = \bigcirc
Sapling/Shrub Stratum (Plot/size) 30ff		FACW species x 2 = 🖒
1. ROSA multiflora	25 V FACU	FAC species $5 \times 3 = 45$
2. FACRES GMAUCHOLIC	15 J FACU	FACU species 150 x 4 = 600
3. Primes seroting	10 FACIL	UPL species 20 x 5 = 50
4. Queraus ruelra	10 FAU	Column Totals: 185 (A) 145 (B)
5		
6	· ·····	Prevalence index = B/A = 4.03
7	· · · · · · · · · · · · · · · · · · ·	Hydrophytic Vegetation Indicators:
8	· ••••••••••••••••••••••••••••••••••••	1 - Rapid Test for Hydrophytic Vegetation
9	· · · · · · · · · · · · · · · · · · ·	2 - Dominance Test is >50%
	$\overline{70} = \text{Total Cover}$	3 - Prevalence Index is ≤3.0 ¹
50% af total cover: 35	20% of total cover:	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size:)		data in Remarks or on a separate sheet)
1. Keleckeckeckeck	Υ. /	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Alystichum acrostoride	SIST FACU	
3. Micros Legin Vimenen	15 FAC	¹ Indicators of hydric soil and wetland hydrology must
4		be present, unless disturbed or problematic.
5		Definitions of Four Vegetation Strata:
6		Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
7		more in diameter at breast height (DBH), regardless of
8		height.
9	······································	Sapling/Shrub - Woody plants, excluding vines, less
10		than 3 in. DBH and greater than or equal to 3.28 ft (1
11		m) tall.
	30	Herb - All herbaceous (non-woody) plants, regardless
50% of total cover:	20% of total cover:	of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30 Value)		Woody vine - All woody vines greater than 3.28 ft in
1. Parthenocissus grungestola	10 FACV	height.
2		
3		
4		
5		Hydrophytic
		Vegetation Present? Yes No
50% of total cover:	-40 = Total Cover 20% of total cover: 2	
Remarks: (Include photo numbers here or on a separate sh		
	leet.)	

Sampling Point: wwmh010_u

Profile Description: (D	escribe to the dep	th needed to docur	nent the i	ndicator o	or confirm	the absence of	of indicators.)
	Matrix	Redo	x Feature					
(inches) Color (r		Color (moist)	%	_Type ¹	Loc ²	Texture		Remarks
0-3 104R						_lomm		
3-6 104R.	42					SANCE	lozin_	
6-18+ 10YR.	5/1/					- $ -$	lonna	
	. ,					Jung		
					••••••			······································
			. <u></u>	······································				
					·	······································		
		······						
	D-Depletion DM	Daduaad Matrix MA			· .	2		
¹ Type: C=Concentration Hydric Soil Indicators:	i, D=Depletion, RM	=Reduced Matrix, M	S=IVIasked	i Sand Gra	ains.	² Location: PL		M=Matrix. lematic Hydric Soils ³ :
Histosol (A1)		Dark Surface	(\$7)) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Be		ce (S8) (N	LRA 147.	148) Co	bast Prairie Re	
Black Histic (A3)		Thin Dark Su	urface (S9)) (MLRA 1	47, 148)		(MLRA 147, 1	
Hydrogen Sulfide (A		Loamy Gleye						plain Soils (F19)
Stratified Layers (As		Depleted Ma					(MLRA 136, 1	
2 cm Muck (A10) (L Depleted Below Dar		Redox Dark						ark Surface (TF12)
Thick Dark Surface		Depleted Da Redox Depression				Ot	her (Explain ir	n Remarks)
Sandy Mucky Miner		Iron-Mangan						
MLRA 147, 148)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	MLRA 13		05 (1 12) (1				
Sandy Gleyed Matri	x (S4)	Umbric Surfa	ice (F13)	(MLRA 13	6, 122)	³ India	cators of hydro	ophytic vegetation and
Sandy Redox (S5)		Piedmont Flo				8) wet		y must be present,
Stripped Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 147) unle	ess disturbed	or problematic.
Restrictive Layer (if ob								
Type: Depth (inches):								\sim
Remarks:						Hydric Soil	Present? Y	/es No <u>}</u>
Remarks:								
	- 1			50		$\hat{\mathbf{D}}$		
	Ala	hydric	· Se	vi	DA0	LOAN		
	,00	inger a			100			
		\bigcirc						
L								

wwmh010_u



Upland data point wwmh010_u facing east



Upland data point wwmh010_u facing south

wwmh010 soils



Wetland/upland soils

wwmh011f_w

WETLAND DETERMINATION DATA FORM -	Eastern Mountains and Piedmont Region
Project/Site: DTI Supply Hender City/Co	ounty: Destmareland Sampling Date:
Applicant/Owner: Jong Inton	State: PASampling Point: WM HOINF
Investigator(s): DUEST Section	n, Township, Range:
Landform (hillslope, terrace, etc.): <u>Bothcom Irond</u> Local relie	
Landrorm (nillslope, terrace, etc.): <u>Costrom Irong</u> Local relie	
-	
Soil Map Unit Name: <u>What fon</u>	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	es No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturb	bed? Are "Normal Circumstances" present? Yes
Are Vegetation, Soil, or Hydrology naturally problema	
SUMMARY OF FINDINGS – Attach site map showing sam	
SolumAct of Thebives - Acach site map showing sain	iping point locations, transects, important reactives, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: 10 A 1 - th	AR ADAST
Remarks: All-three pairameters for Small wethind associated	Stesser 4
Small inothing associated	with Derennie Stream
o medex votes invector	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6) (B14) Sparsely Vegetated Concave Surface (B8)
	res on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduce	
	on in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (
Algal Mat or Crust (B4) Other (Explain in Re	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes No Depth (inches):	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes X No Depth (inches):	
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pr	
Remarks: Aydrologi Same	
Audrologi	1 present
Same	

1 DWMHO 1 Sampling Point: VEGETATION (Four Strata) - Use scientific names of plants. Dominance Test worksheet: Absolute Dominant Indicator Tree Stratum (Plot size:) % Cover Species? Status Number of Dominant Species 55 1 Acer rulerum FAC That Are OBL, FACW, or FAC: (A) 35 2. Ulmus AmongAna FACU ١ Total Number of Dominant Species Across All Strata: (B) Λ Percent of Dominant Species 00 5 That Are OBL, FACW, or FAC: (A/B) 6 Prevalence Index worksheet: 7 Total % Cover of: Multiply by: 60 = Total Cover 50% of total cover: 30 OBL species _____ X1 = ___ ___ 20% of total cover:__ Saplind/Shrub Stratum (Plot size: 304 FACW species _____ x 2 = _____ ____ X 3 = ___ FAC species 1 COLOGIO Acer rulnum FACU species x 4 = 2. FAC UPL species _____x5 ≖ _____ 3 Column Totals: ___ (A) _____ ___ (B) 4 Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 8. \mathbf{X}_2 - Dominance Test is >50% 9 3 - Prevalence Index is ≤3.01 (\mathcal{D}) = Total Cover _ 4 - Morphological Adaptations¹ (Provide supporting 2 50% of total cover: 20% of total cover: data in Remarks or on a separate sheet) Herb Stratum (Plot size: Problematic Hydrophytic Vegetation¹ (Explain) ť MB 1 OBL 2 ¹Indicators of hydric soil and wetland hydrology must 20 rosticii FAC 3 be present, unless disturbed or problematic. ß W. HOTA **Definitions of Four Vegetation Strata:** FACY Athurium CB ? imian Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or FACIN 10 somethi more in diameter at breast height (DBH), regardless of 7. height. 8. Sapling/Shrub - Woody plants, excluding vines, less 9. than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. 10 11. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 75 = Total Cover 50% of total gover: 37-20% of total cover: Woody vine - All woody vines greater than 3.28 ft in 30H) Woody Vine Stratum (Plot size: height. 1 2 3 Hydrophytic 5 Vegetation No Present? = Total Cover 50% of total cover: _____ 20% of total cover:___ Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point:	. /
Sampling Point:	\sim

Profile Description: (Describe to the dep	th needed to document the ind	licator or confirm t	he absence o	of indicators.)
Depth <u>Matrix</u>	Redox Features			
(inches) Color (moist) %	Color (moist) %	Type ¹ Loc ²		Remarks
0-12 104R311			10mm	
12-18+104R4/1	104R414 75	<u>c</u> m	10mm	
	·····			
		······································		
	·····			
-				
¹ Type: C=Concentration, D=Depletion, RN	1=Reduced Matrix, MS=Masked	Sand Grains.	² Location: Pl	_=Pore Lining, M=Matrix.
Hydric Soil Indicators:				tors for Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface (S7) Polyvalue Below Surfac			cm Muck (A10) (MLRA 147) oast Prairie Redox (A16)
 Histic Epipedon (A2) Black Histic (A3) 	Polyvalue Below Surfac Thin Dark Surface (S9)		148) <u> </u>	OAST Prairie Redox (A16) (MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F		Р	iedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3)	-,	P.112.000	(MLRA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6			ery Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dark Surface		C	ther (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8			
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	Iron-Manganese Masse MLRA 136)	s (F12) (LRR N,		
Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (I	M RA 136 122)	³ Ind	licators of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Floodplain Sc			etland hydrology must be present,
Stripped Matrix (S6)	Red Parent Material (F2			less disturbed or problematic.
Restrictive Layer (if observed):			Ţ	
Туре:				\times
Depth (inches):			Hydric Soi	Present? Yes No
Remarks:				
	60	soil P		
	Aumo	Soil F	Meser	
	\bigcirc	·		
				······································

wwmh011f_w



Wetland data point wwmh011f_w facing east



Wetland data point wwmh011f_w facing south

	I – Eastern Mountains and Piedmont Region
Project/Site: DT1 SUMU HEADER City	//County: Westmore And Sampling Date: 11-15-14 State: PA Sampling Point WWMH011
Applicant/Owner: Dominican	State: PA Sampling Point WWMHOIL
	ction, Township, Range:
Landform (hillstope terrace etc.): Hills Inne	relief (concerve, convex, cone): (4) Slope (%): $(1) - 20$
Subsection (LDD of MLDA): $N = \frac{1}{2} \frac{1}{2$	relief (concave, convex, none): Slope (%): 12 - 20 34,13 ¹¹ Long: 79° 38′ 19.08 Datum: U-CS 84
	,
Soil Map Unit Name: 🦉 Gilpen	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation, Soil, or Hydrology significantly dis	turbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally proble	matic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
	A
Not all thee parame	2lars present
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plant	ts (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide	Odor (C1) Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizosph	neres on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Redu	ced Iron (C4) Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduc	ction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	e (C7) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in F	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No 🔨 Depth (inches):	
Water Table Present? Yes No 🖄 Depth (inches):	
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos,	previous inspections), if available:
Remarks:	\wedge
No Ly Drolog	MI DIODOUT
	19 present

SOIL

L	JWM1+0	1	l
nt:		Ĺ	J

SOIL			Sampling Point:
Profile Desc	ription: (Describe to the dep	h needed to document the indicator or confirm	n the absence of indicators.)
Depth	Matrix	Redox Features	
(inches)	<u>Color (moist)</u> %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-3			SANDY LOAM
3-8	10YR 5/4		Loxin
8-18+	10 YR 5/6		CLAY LOAM
			· · · · · · · · · · · · · · · · · · ·
¹ Type: C=Co	Discontration, D=Depletion, RM	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I			Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
1	pipedon (A2)	Polyvalue Below Surface (S8) (MLRA 147)	
Black Hi		Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
	n Sulfide (A4) 1 Layers (A5)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	uck (A10) (LRR N)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surface (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12)	Redox Depressions (F8)	
	Aucky Mineral (S1) (LRR N, A 147, 148)	Iron-Manganese Masses (F12) (LRR N,	
	Gleyed Matrix (S4)	MLRA 136) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy C		Piedmont Floodplain Soils (F19) (MLRA 1	
Stripped		Red Parent Material (F21) (MLRA 127, 14	
Restrictive I	Layer (if observed):		
			\checkmark
Depth (inc	ches):		Hydric Soil Present? Yes No
Remarks:		1 4 1 -	
		NO AUDON	soils present
		, yeer he	acts brack

₩₩₩HƏ\\ Sampling Point:_____

VEGETATION (Four Strata) - Use scientific names of plants.

<u> </u>	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 1		Species?		
	20	<u>-species</u>	100000	Number of Dominant Species
1. Quercues rubra			FAU	That Are OBL, FACW, or FAC: (A)
2. Quorcus velutina	20		UPL	
3. Prunus serotina	20		FACU	Total Number of Dominant
				Species Across All Strata: (B)
4. Corya glabra	15	\sim	FALV	
				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6		- <u></u>		
7				Prevalence Index worksheet:
	75	= Total Cov	~ ~	Total % Cover of: Multiply by:
50% of total cover: 37.5	<u> </u>		"15	OBL species x 1 =
	20% of	total cover:	<u></u>	
Sapling/Shrub Stratum (Plot size: 30 4		/		FACW species $x_2 = 0$
1. Quercus rubra	10	\checkmark	FACU	FAC species $x_3 = $
	- <u> </u>	· · · · · · · · · · · · · · · · · · ·	TPL	FACU species $35 \times 4 = 340$
2. Querais velutina	<u> </u>	·		
3. Frunus seroting	10		FACU	
4. Cpryaghapra	10	$\overline{\nabla}$	FACU	Column Totals: (60) (A) (605) (B)
		· <u> </u>		
5. ROSA MULTiflora	20		FALV	Prevalence Index = $B/A = -\frac{4.16}{2}$
6				
				Hydrophytic Vegetation Indicators:
7			•	1 - Rapid Test for Hydrophytic Vegetation
8				
9				2 - Dominance Test is >50%
	КC	·		$3 - Prevalence Index is \leq 3.0^{1}$
	20-	= Total Cov	er / I	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 27	<u>S</u> 20% of	f total cover:		
Herb Stratum (Plot size:) D (+)			/	data in Remarks or on a separate sheet)
1 Patricki laure acostalas	20	. /	FACIL	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Palystichum acostordes		·	The	
2		<u>.</u>		
3				¹ Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
4		• •		Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
				more in diameter at breast height (DBH), regardless of
7				height.
8				
				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Horb All horbogoous (non woodu) plants regardless
	20	Tatal Cau		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
10		= Total Cov		of size, and woody plants less than 3.20 it tall.
50% of total cover: <u>LC</u>	20% 0	f total cover		Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30 ft))				height.
1				<u> </u>
2				
3. NOT				
				Hydrophytic /
5				Vegetation
		= Total Cov	rer	Present? Yes No
50% of total cover:	20% 0			
				<u></u>
Remarks: (Include photo numbers here or on a separate	sneet.)			

wwmh011_u



Upland data point wwmh011_u facing east



Upland data point wwmh011_u facing south

wwmh011 soils



Wetland/upland soils

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: <u>DTL Supply Hender</u> City/County: <u>Westmore/And</u> Sampling Date: <u>11-14-14</u> Applicant/Owner: <u>Pomunum</u> State: <u>FA</u> Sampling Point: <u>WMHOUG</u> e

Applicant/Owner: <u>Pomtnum</u> only/county.	State:Sampling Point:
nvestigator(s): 1213 (222) Section, Township, Range:	
andform (hillslope, terrace, etc.): <u>Balton lun (</u> Ploof relief (concave, convex, no Subregion (LRR or MLRA): <u>U</u> Lat: <u>40°27'40.05</u> " Long: <u>7</u>	one): <u>CONCA-UR</u> Slope (%):
Soil Map Unit Name: <u></u>	NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No	
-	al Circumstances" present? Yes 📈 No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed,	explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point locat	ions, transects, important features, etc
Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Hydric Soil Present? Yes No No Is the Sampled Area within a Wetland? Wetland Hydrology Present? Yes No No Is the Sampled Area within a Wetland? Remarks: All Huel present No No Is the Sampled Area within a Wetland?	Yes No
HYDROLOGY Wetland Hydrology Indicators:	Secondary indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Sparsely Vegetated Concave Surface (B8)
Field Observations:	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): 0"	
Saturation Present? Yes No Depth (inches): Such tee Wetlan	nd Hydrology Present? Yes 🚬 No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if	
besonde Recorded bate (shearn gauge, monikoling weil, aenai photos, previous inspections), il	avanabic.
Remarks:	
for Depression running along sid	e small perennet
	,
3 tream	

WWMHOD6e_W

VEGETATION	(Four	· Strata) ·	- Use	scientific	names	of plants.
------------	-------	-------------	-------	------------	-------	------------

20 01	Absolute	Dominant	- 1	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 f4</u>)		<u>Species?</u>		Number of Dominant Species 5
1. <u>ffcer rubrum</u>		\sim	FAC	That Are OBL, FACW, or FAC: (A)
2	<u></u>			Total Number of Dominant 7
3		· ·····		Species Across All Strata: (B)
4				Demont of Dominant Engains
5				Percent of Dominant Species 7 (A/B)
6				
7				Prevalence Index worksheet:
	- 10	= Total Co		Total % Cover of: Multiply by:
50% of total cover:	$5 - \frac{10}{20\%}$	f total cover	~ >	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 30 G				FACW species x 2 =
1. Six In Martin	10	. /	OBL	FAC species x 3 =
			FACU	FACU species x 4 =
2. Ligustium sinance 3. Rosn mild Hora	$-\overline{\Lambda}$		FACU	UPL species x 5 =
			<u>Env</u>	Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				\sum 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	17 25	_ = Total Co	over \prec	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: $\underline{3}$	<u>12.3</u> 20%	of total cove	er:	data in Remarks or on a separate sheet)
Herb Stratum (Plot size:)	20			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Phalaris oundingaeou			- EACN	
2. Druclan sensibilis	-10		_ EACH	I Undicatore of hydric soil and wetland hydrology must
3. Microstaine Vinina	$-\frac{40}{20}$	_ \	- FAC	be present, unless disturbed or problematic.
4. tolygongun sag, Antum			<u>OBL</u>	Definitions of Four Vegetation Strata:
5. Actor Conterna				The structure evolution visco 2 in (7.6 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				_ height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				 Herb – All herbaceous (non-woody) plants, regardless
	90	= Total C		of size, and woody plants less than 3.28 ft tall.
50% of total cover:	15 20%	= rotarc	er: 16	
Woody Vine Stratum (Plot size: 30 #)				Woody vine – All woody vines greater than 3.28 ft in
1				height.
				m
2				-
3				
4				- Hydrophytic
5			,	_ Vegetation No
		= Total C		
50% of total cover:		01 IOIAI CO	ver:	
Remarks: (Include photo numbers here or on a separa	ate sheet.)			
L				

SOIL

	- P	D - 1	
sami	าแทส	Point:	
Juin	JUNIC		

$\begin{array}{ccc} \text{pth} & \underline{\text{Matrix}} \\ \text{ches}) & \underline{\text{Color}(\text{moist})} & \underline{\%} \\ \hline $	Deday Festures	
	Redox Features Color (moist) % Type ¹ Loc ²	Texture Remarks
		Texture
and the second		
-20° 10 YR 3/2		
		
	-	
pe: C=Concentration, D=Depletion, R	M=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
dric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Below Surface (S8) (MLRA 147, 1	
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4) Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
2 cm Muck (A10) (LRR N)	Depleted Matrix (F3) Redox Dark Surface (F6)	(MLRA 136, 147) Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	
Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 148	
_ Stripped Matrix (S6) estrictive Layer (if observed):	Red Parent Material (F21) (MLRA 127, 147)	unless disturbed or problematic.
Type:		
Depth (inches):		Hydric Soil Present? Yes 📐 No

emarks:	1	
	Aughre soil p	<u>_</u>
	Mycane sort p	resory
	N_X	

wwmh006e_w



Wetland data point wwmh006e_w facing east



Wetland data point wwmh006e_w facing south

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region Sampling Date: Enclor City/County: _ Jestmoretan Project/Site: PT Sampling Poir State: Applicant/Owner: minion ろいいそくて Investigator(s): Section, Township, Range: Landform (hillslope, terrace, etc.): ope Local relief (concave, convex, none): Long: 790 40027' 40.17" Datum: Subregion (LRR or MLRA): Lat: 1 BA Soil Map Unit Name: _ NWI classification; Are climatic / hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks.) No Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No is the Sampled Area Hydric Soil Present? Yes No within a Wetland? Wetland Hydrology Present? Yes No Remarks: the parameters preser HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) ____ Surface Soil Cracks (B6) ____ Sparsely Vegetated Concave Surface (B8) Surface Water (A1) ____ True Aquatic Plants (B14) ____ High Water Table (A2) ____ Hydrogen Sulfide Odor (C1) ___ Drainage Patterns (B10) ___ Oxidized Rhizospheres on Living Roots (C3) ____ Moss Trim Lines (B16) Saturation (A3) ____ Water Marks (B1) Presence of Reduced Iron (C4) ____ Dry-Season Water Table (C2) ____ Sediment Deposits (B2) ____ Crayfish Burrows (C8) ____ Recent Iron Reduction in Tilled Soils (C6) ____ Drift Deposits (B3) ____ Saturation Visible on Aerial Imagery (C9) Thin Muck Surface (C7) ____ Algal Mat or Crust (B4) ____ Stunted or Stressed Plants (D1) ____ Other (Explain in Remarks) Iron Deposits (B5) ____ Geomorphic Position (D2) ____ Inundation Visible on Aerial Imagery (B7) ____ Shallow Aquitard (D3) ____ Microtopographic Relief (D4) Water-Stained Leaves (B9) ___ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Surface Water Present? No Depth (inches): Water Table Present? No Depth (inches): Wetland Hydrology Present? Yes _____ Saturation Present? No No Yes ____ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology presen

VEGETATION (Four	Strata) – Use	scientific names	of plants.
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Sampling Point: Absolute Dominant Indicator Dominance Test worksheet:

Tree Stratum (Plot size:)	% Cover Species? S	Status	Number of Dominant Species
1		\	That Are OBL, FACW, or FAC:(A)
2			Total Number of Dominant
			Species Across All Strata:(B)
-			Percent of Dominant Species
		1	That Are OBL, FACW, or FAC: (A/B)
6		}	Prevalence Index worksheet:
7			Total % Cover of: Multiply by:
	= Total Cover		OBL species x1 =
	20% of total cover:		FACW species $2 \times 2 = 2$
Sapling/Shrub Stratum (Plot size:)	75 /	EALU	FAC species $30 \times 3 = 90$
1. Rosh multiplorA	$-\frac{2}{2}$	FALV	FACU species 110 x 4 = 120
2. Ligisstrum Sinknse		FACV	UPL species $x = 0$
3,			Column Totals: 140 (A) 530 (B)
4			
5			Prevalence Index = B/A = <u>3.79</u>
7			Hydrophytic Vegetation Indicators:
8			1 - Rapid Test for Hydrophytic Vegetation
9			2 - Dominance Test is >50%
	$\frac{45}{5}$ = Total Cove	er	3 - Prevalence Index is ≤3.0 ¹
. 50% of total cover: 2-2	2-5 20% of total cover:_	" G	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size:)			data in Remarks or on a separate sheet)
1. Solidago altesima	15	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Dipsacus fullonum		FACU	1. It is a still state still and watered budgelogy must
3. Amprosia curtemis, ità lia		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Festuca arundinacoa	-30	FACU	Definitions of Four Vegetation Strata:
5. Microstegin viminea		FAC	-
6			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7			height.
8			Sapling/Shrub - Woody plants, excluding vines, less
9			than 3 in. DBH and greater than or equal to 3.28 ft (1
10			m) tall.
11			Herb - All herbaceous (non-woody) plants, regardless
	= Total Cov	er 10	of size, and woody plants less than 3.28 ft tall.
	2-5 20% of total cover:	17	Woody vine - All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:)			height.
1		· ·····	
$2 - \sqrt{2}$			
3	****	·	-
4			Hydrophytic
5			Vegetation Present? Yes No
50% of total cover	= Total Cov 20% of total cover		
Remarks: (Include photo numbers here or on a separa		*	-
1			

SOIL

10 - Carl

Profile Desc	ription: (Describe to	the depth	n needed to docum	ent the ir	dicator o	or confirm	the absence o	f indicators.)
Depth	Matrix			Features				
(inches)	$\frac{\text{Color (moist)}}{(204.0)}$		Color (moist)		<u>Type¹</u>	Loc ²	 LOAN	Remarks
2-7	10YR 4/3		10100 0441					
<u>9-18+</u>	104K 4/4		12VR 5/4	2	<u> </u>	M	LOAN	И
			*****		······································			
						·		
		·*			·······		·····	
	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	S=Masked	I Sand Gr	ains.		=Pore Lining, M=Matrix.
-	Indicators:			(2-)				tors for Problematic Hydric Solls ³ :
Histoso Histic F	pipedon (A2)		Dark Surface Polyvalue Be			/I RA 147		cm Muck (A10) (MLRA 147) oast Prairie Redox (A16)
	listic (A3)		Thin Dark Su				, 140,	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye	ed Matrix I			Pi	iedmont Floodplain Soils (F19)
	d Layers (A5) uck (A10) (LRR N)		Depleted Ma		- (2)		V	(MLRA 136, 147) ery Shallow Dark Surface (TF12)
	ed Below Dark Surfac	e (A11)	Redox Dark Depleted Da					ther (Explain in Remarks)
Thick D)ark Surface (A12)		Redox Depr	essions (F	8)			
	Mucky Mineral (S1) (I	_RR N,	Iron-Mangar		es (F12)	(LRR N,		
1	2A 147, 148) Gleyed Matrix (S4)		MLRA 13			26 1221	³ Ind	icators of hydrophytic vegetation and
	Redox (S5)		Piedmont FI					tland hydrology must be present.
Strippe	d Matrix (S6)		Red Parent					less disturbed or problematic.
	Layer (if observed)							
	nches):						Hydric Soil	Present? Yes No <u>X</u>
Remarks:				Λ	ţ	1	Ω	
			No hu	driz	507	1 AI	resont	
			\mathcal{L})		f	,	
		<u>/</u> .						
l	· · · · · · · · · · · · · · · · · · ·		······					

wwmh006_u



Upland data point wwmh006_u facing east



Upland data point wwmh006_u facing south

wwmh006 soils



Wetland/upland soils

SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland and Waterbody Delineation Report

APPENDIX B

Waterbody Datasheets and Photo Pages

TL-636

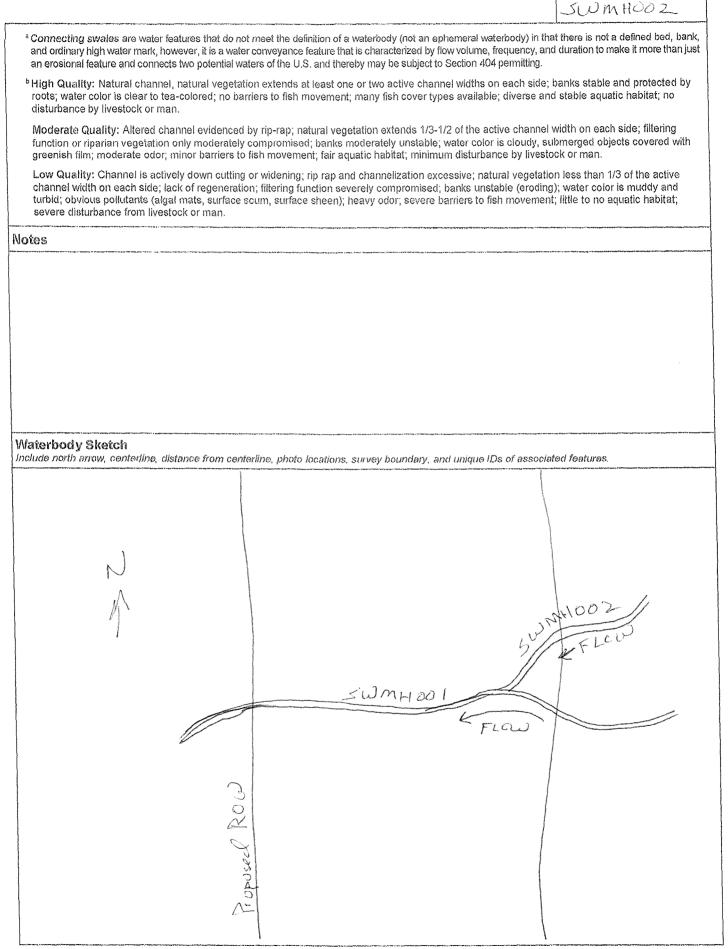
Westmoreland County

Pennsylvania

Waterbody Data Sheet

st.		a a su a			و معد الي و مناطق من و الله من الله من الله الله الله الله و معرفي و معد الله و	
urvey Descriptio	17					
roject Name:		Waterbody Name:		Waterbody I	ID:	Date:
DTI Supply 1	liteader	UNT TO	TURTLE CA	REEKSWM	HOO 2	11-13-14
itate: County:		Company:		Crew Member Initials		
PR Westi	noreland	x DDW	EST	JD,DB	3	
ract Number(s):		Milepost Ent		Contraction and the second	Wetland ID(s):	۲. ۱۹۹۹ - ۲. ۱۹۹۹ - ۲. ۱۹۹۹ - ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲.
35-256				NO	NE	
Survey Type:		**************************************				٣٠. ١٠٠٠٠٠ - ٢٠٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ - ٢٠٠٠ ٢٠٠٠
check one)		Re-Route	Access R	oad 🚺 Other:		
Physical Attribute	25	ייזער איז	ال کور او در او	אשא אורא איז איז איז איז איז איז איז איז איז אי	alla de une construction de la construcción de la construcción de la construcción de la construcción de la cons Anticipante en la construcción de la	
Stream Classification:		Intermittent	Perennial			
Naterbody Type:	Stream	r Ditch	ond	Connecting swale	• Other:	
OHWM	OHWM Inc	licator:	an a Taran ay ang yang yang yang kanang kanang kanang tara 1990 a sa kanang kanang kanang kanang kanang kanang			
Width: <u>5</u> ft.	(check all that	apphy)	Clear line	Shelving Wreever	sted Sco etation	uring Water staining
Height: 9 ⁻⁴ ft.	Bent	, matted, or	Wrack Ine		ipt plant [munity change	Soil characteristic change
Width of Waterbody - Top of Bank at Cente		Width of Water Water Edge at 0	oody - Water Edge Centerline:	to Depth of V (Approx.)	Water at Centerlin	ie:
_7	ft.		ft.			ft.
Sinuosity: (check one)		ater velocity:	Bank h		Bank slop	
Stn	aight	~ \	f	Right: 12 ft.	RI	ight: <u>70</u> degrees
🕅 Me	andering	<fps< td=""><td></td><td>Left: $1 - 7^{\mu}$</td><td></td><td>Left: 70</td></fps<>		Left: $1 - 7^{\mu}$		Left: 70
_قدیت&ل				<u> </u>		degrees
Qualitative Attrib	utes		1		nineyan, waxayeninga yang hine bayaye / 4, 6,5 Pul Wining Pin. 4, 6 William indu	na en a sy a calledone fontual de l'Alfragent fe a comerce de la versión de sinteren de la comerce de la comerc
Water Appearance: (check one)	No water	Clear	Sheen C	Surface Algal	Other:	
Substrate:	Bedrock	Gravel 🔀 Sand	∬∑ Silt/clay	/ Organic	Other:	
% of Substrate:	%	% 20	% SÒ	%		%
Width of Riparian Zo		ive Layers:		Engineering of the second seco	99 M. 49	Perman
<u>lo</u> ft.		BH of Dominants:	Trees: <u>8</u> '' in.	Shrubs:	in.	Herbs
Dominant Bank Vege					a, waanaya firaya waxay in saa Tirana Tirana da bada t	Forture
Rober Company	fatera de	tions Carria al	when Prum	a socation.	Row une Ct	PlovA, aread
(list)	submerged or emerged	aquatic vegetation/overhangin	g banks/roots, leaf packs,	large submerged wood, riffles,		renienten artender der unfersier onnen ander einen einer einen sonen einer einen einer einen einer einer einer
pools						
Aquatic Organisms	Observed:		ning and a second a second		***************************************	
None						
Invasive and/or T&E	Species Observe	ed:	n yn yn efficien y Carley Alfreden officy yn effic falgene Mithelio e fan	a a na an	ur min ay a lago y tanan tanan kata kata kata kata kata ka	
Tributary is: (check one)	Natural	Artificial, r	nan-made [] N	lanipulated		الاعتبار المراجع
Disturbances: (check all that apply)	Livestoci access	< X Manure in waterbody		discharge	Other:	
Stream Quality ^b : (check one)	High	Moderate	ixeal		₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	ماهندست و معالم معالم معالم معالم المعالم المعالم المعالم المعالم معالم معالم معالم معالم معالم معالم معالم مع المعالم من معالم معالم معالم معالم المعالم و المعالم و المعالم و المعالم معالم معالم معالم معالم معالم معالم مع المعالم مع المعالم معالم المعالم المعالم و

Form Rev. 2/21/2014





Waterbody swmh002 facing east upstream



Waterbody swmh002 facing west downstream



Waterbody swmh002 facing upline cross stream

Waterbody Data	Sheet								
Survey Descript	ion	****			***				
Project Name: Sup DTI Hend	Ply	Waterb UNT	ody Name: 77) TURTLE	C CREE		Waterbody ID:	1001	Date:	12/11
	st Morelian	Q	Company: DDWES		Crew Me	L Imber Initials: Pl DB	noto ID(s):		13/12
Tract Number(s): 35 - 256			Wilepost Entry:	Milepost E	xit:	Associated Wetl Noかと	and ID(s):		na te di dita ti anna si persi any data any.
Survey Type: (clieck one)	Centerline		Re-Route	Access R	Dad	Other:			
Physical Attribut			Constanting Manual Constanting	******	nin 1 Allindi kalendar an generar	יייייטער איז			
Stream Classification (check one) Waterbody Type: (check one)	n: Ephemeral Stream I River	100000	Intermittent	American and a second second					
OHWM Width: <u></u> ft.	OHM/M India	cafor	Clear line on bank		helving	Wrested	Other:	ing	Water
Height: 6 // ft. Width of Waterbody	Bent, n missing	natted, or J vegetat	on Wrack		lter and obris	Abrupt plan community	nt Change] Soil char change	staining
Top of Bank at Cente	rline: ft.	vva	th of Waterbody - W ter Edge at Centerlin	ater Edge t e: . ft.	0	Depth of Water (Approx.)	at Centerline:		1997 97 7 - 99 - 99 - 99 - 99 - 99 - 99 - 99
Sinuosity: (checkone)	aight	er velocit x.)		Bank hei Ri	ght ght: <u> K</u>	1ft.	Bank slope	nt: <u>240</u>	degrees
	andering	2	fps		eft: <u> Z</u>		l.e		degrees
Qualitative Attrib Water Appearance: (^{check one)}	No water	ar 🕅	Turbid Sheen	Darman a	Surface	Algal [] (Other:		
Substrate:	Bedrock Gra	vel	Sand 🛛	Silt/clay)ther:		
% of Substrate:		%	20 %	<u>80 </u> %		%			-
Width of Riparian Zon	(check all that a Avg. DBH c (approx.)	pphy)	Trees:	<u> </u>		Shrubs:	in.	<u> </u>	⁶ Herbs
Dominant Bank Veget	ation: Iran, Rusa,	ми()	follorn Fest	fuca c	wunc	lincecca	74 4 000,74 000,77 000,770 - 116 - 14 000,77 000,77 - 116	nan kananan kananan kanan	
Aquatic Habitats (ex. si $\frac{1}{2}$	ubmerged or emerged aqua	tic vegetatio	on, overhanging banks/roots,	leaf packs, large	o submerged	wood, riffles, deep pools	i):		
Aquatic Organisms Ol Not	oserved:	***							
nvasive and/or T&E S 189 Rosh mu	pecies Observed:	77-449 a.c. 10 Revenues and a comp			₩ 1034°440'49 897 877 8878 8888				
ributary is: check one)			Artificial, man-made	Manii	oulated				1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 -
Disturbances: check all that apply)	Livestock access	nerrorfa	Manure in Line]Waste disc		Other:			new and a sub-spin star registration of the
Stream Quality ^b : ^{check} one)	High	(varation)	Moderate X	Low					
				2					1

WMHOO!

Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbo and ordinary high water mark, however, it is a water convolution feature that is already in the feature between	
and ordinary high water made bauguine it is and the most the definition of a waterbody (not an optiemeral waterbo	dy) in that there is not a defined bed, bank.
an erosional feature and connects two notential waters of the U.C. and there is a state of the U.C.	ency, and duration to make it more than just
an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 pen	nittina.

^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

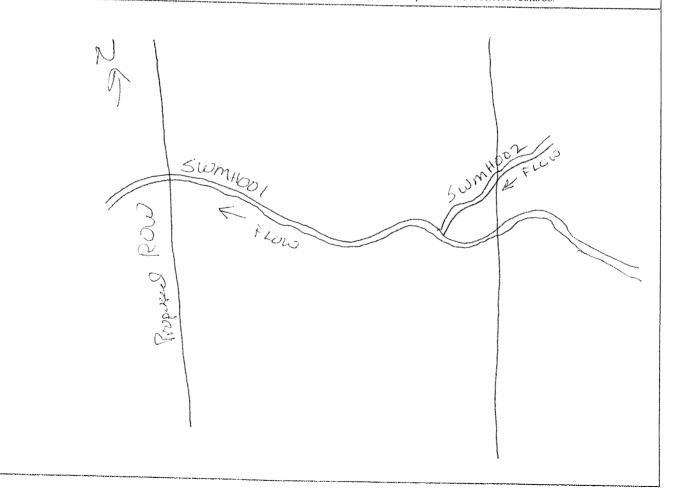
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes

Waterbody Sketch

Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.





Waterbody swmh001 facing east upstream



Waterbody swmh001 facing west downstream



Waterbody swmh001 facing upline cross stream

Waterbody E	Data Sheet							
Survey Desc	ription				·····	******	*****	
Project Name:	1 6 1	Waterb	ody Name:		a ar han da ar an an fairlean de dan da a da an da	Magazh a alve UD		
DTT Sup	ply Hender	UNT	TO TURTLE	CREE	K.	Waterbody ID: SL	JMH	Date:
State: Cou	intv:	J	Company:			mber Initials: Ph		11-13-14
PA W	Destmoreland	2	DDUEST	********	1			
Tract Number(s					JD,	Associated Wetla		
35-2	254				2	WWM/	10011	
Survey Type: (check ono)	X Centerline	(and		Access R	·······	Other:		- W
Physical Attr	ibutes		franzen er angen gen gen er en andere er franzen fan er de franzen er er angen er	and an an an and a second second second				
Stream Classific	cation:	·	الفرير والمراجع المسروع المراجع المراجع المحافظة المراجع المراجع المراجع المراجع المراجع المراجع الم			and the state of the		
(check one)	Ephemeral		Intermittent	Perennial				α το δεν το διαδιά και το ποιο το δεν το το στο
Waterbody Type (check one)	a: Stream	[][1999 1999 - 1998 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1 1997		
онум	water water base as we are the state of the		Pond	Lake	Conne	octing swale a	Other:	
Width:	OHWM Indi (check all that a, ft.	cator: 	Clear line on bank	e [state	ihelving	Wrested vegetation	Scouri	ng Water staining
Height: 6	ft.	natted, or	ion Wrack		itter and ebris	Abrupt plar	t 🏳	Soil characteristic
Width of Waterb Top of Bank at (Odv - Top of Flank to	Wic	Ith of Waterbody - W	Vater Edge		Depth of Water a	chango 🗂	change
	Serrier me.	VVa	ter Edge at Centerli	ne:		(Approx.)	a venternne.	
Sinuosity:	<u> </u>	er veloci		ft.			ft	
(check one)	Straight	эх.)	y .	Bank he	ight ight:	1	Bank slope	
	,	2	1		igni. /	ft.	Righ	t: degrees
LZ.	Meandering		fps		Left: /	<i>6</i> 4	lef	t:
Qualitative A	ttributes					IL,		degrees
Water Appearan	ce: No water	 1771		12000	****	and any characteristic due to be specific as a final fight from the due to be the set		
	Land No water Land Cle	ar 📉	Turbid Sheer	C	Surface scum	Algai C mats	Other:	
Substrate: (check all that apply)	Bedrock Grand	vel	Sand D	Silt/clay	printing a	P1	ther:	
% of Substrate:	%	%	20%	80,	,			
Width of Riparia		Layers:	· · · · · · · · · · · · · · · · · · ·	<u> </u>	0	%		%
>50	ft. Avg. DBH				\geq	Shrubs:		Herbs
Dominant Bank	(approx.)			in.			in.	
(11st) Acer nel	frum, Forxince	o por	nsylumnica,	Rosma	ulfid	Nora, Liqu	strum s	vienser
roojs	(ex: submerged or emerged aqu	atic vegetati	on, overhanging banks/roots	, leaf packs, larg	je submerged	l wood, riffles, deep pools):):	£
Aquatic Organisi		**************************************			***			
Barre	10005							
Rosa r	RE Species Observed: nultivitary	-14res	frum scien	IS C			95-99-99-09 - 2 - 10-09 - 10-99 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	
Tributary is: (check one) Disturbances:	X Natural	farmed.	Artificial, man-made	lansed.	ipulated		ar , Mara (Baar - Mara) an an Aray (Bar - Mara)	****
(check all that apply)	Livestock access	(accessing)	Manure in waterbody]Waste dis	charge	Diher:	unter	(A)
Stream Quality ^b : ^(check one)	[_] High	\boxtimes	Moderate	Low			by live	stock

	Waterbody ID: SWMH003
^a Connecting swales are water features that do not meet the definition of a waterbody (not an ophemeral waterbody) in the and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, an an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.	at there is not a defined bed, bank, d duration to make it more than just
^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and disturbance by livestock or man.	banks stable and protected by d stable aquatic habitat; no
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, su greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livesto	bmerged objects covered with ick or man
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetatio channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement severe disturbance from livestock or man.	n less than 1/3 of the active
Notes	
Waterbody Sketch Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associate	
N M S Mon Hoos K Fique M M S Openant M S Openant M S Openant M S Openant M S Openant M S Openant M S Openant M S M S M S M S M S M S M S M S M S M S	K



Waterbody swmh003 facing east upstream



Waterbody swmh003 facing west downstream



Waterbody swmh003 facing upline cross stream

Survey Description	***************************************	9 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m		999 - 99 - 99 - 99 - 99 - 99 - 99 - 99	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Project Name:	Waterk	ody Name: T 17 Deguese	CUMI	Waterbody ID:		nte: - 3 - 4
DTISupply Lend	ser k	emerer h	POLLOW)		
state: County: PA Westma				Member Initials: F	hoto ID(s):	
FAL Westma Fract Number(s):	Nellond	DDWES		DB	······································	
35-244, 245, 2	247, 249		Milepost Exit: 2 - 7	Associated We	MHOO2	2 - W
Survey Type: (check one)	Centerline	Re-Route	Access Road	Other:		ann ann an thairte an t
Physical Attributes	ni han dan dan dan dan dan dan dan dan dan d	ማር ያሳችን የአትሮች ላይ ብር መምር የአዲስ ነገ ግጅ የሆኑ ያሳቸው የሆኑ ይሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የሆኑ የ	و المراجع المر	n lan an yan yan yan yan yan yan yan yan ya	an a	
Stream Classification:	Ephemeral] Intermittent	Perennial	1994 - 1995 - 1994 - 1994 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 -		
Waterbody Type: (check one)	River and	Ditch Pond		onnecting swale ^a	Other:	
	OHWM Indicator: (check all that apply)	Clear lin on bank	e Shelvir	ng Wrested vegetati		g Water staining
Height: $\underline{\zeta}_{i}$ ft.	Bent, matted missing vege	or Wrack tation line	Litter a debris	nd	plant	Soil characteristic change
Width of Waterbody - Top o Top of Bank at Centerline:		Vidth of Waterbody - \ Vater Edge at Centerli 2	ne:	Depth of Wat (Approx.)	er at Centerline: 2^{11} ft.	ай туры «Коликананан каланан каланан каланан каланан калан калан калан калан калан калан калан калан калан кал
Sinuosity:	Water velo		Bank height		Bank slope	********
(check one)	(Approx.)	ì	Right:	\ _#	Right	$\frac{25}{25}$ degrees
🔀 Meanderir	ng	Lfps	l_eft:	ft.	leff	: <u>40</u> degrees
Qualitative Attributes		······	<u></u>	Yanan Kalan Ing Kalan		nou s'anna transmanair an
Water Appearance: (check one)	ter 📔 Clear 🖌		en Surf urface scur		Other:	
Substrate: Bedroo	ck X Gravel	Sand)	Silt/clay	Organic	Other:	
% of Substrate:	\$ _% 20 ,	· 20 ·	$\bigcirc \%$	%		%
Width of Riparian Zone:	Vegetative Layo (check all that apply)	ers:	4)	Shrubs:		Herbs
<u>10</u> ft.	Avg. DBH of Do		<u>10"</u> in.	1202302793 	in.	
Dominant Bank Vegetation	talipitera,	Acer rubrus Solidaa	m, Liquist	num sinensa	n, Rosn n	rulf, Flora
Aquatic Habitats (ex: submerg	ed or emerged aquatic ve	getation, overhanging banks/ro	iots, leaf packs, large st	ibmerged wood, riffles, dee	p ixols);	andour a dha "a' 1996 a cha ann an ann ann ann ann ann ann ann an
Aquatic Organisms Observ (^{1/st)} None	/@d:		a "The Chine was a first same a same and the down and		мплона, н то на учи на котивани до на сит в сит ното на нативно	
Invasive and/or T&E Speci (IISI) ROSA MULT	es Observed: Lora, Liga	strum sine	n se		- Fanga, J. Tarakana, Kapatana, K. F. Tarakana, T. F. Tarakana, K. Kapatana, K. Kapatana, K. Kapatana, K. Kapat	
Tributary is: (check one)	Avatural	Artificial, man-ma	de 🔲 Manipu	lated		
Disturbances: (check all that apply)	Livestock access	Manure in waterbody	Waste disch	arge 📈 Of	ther: Dec J	ROW
Stream Quality ⁶ :	High	Moderate	Low			

Waterbody Data Sheet

	Waterbody ID:
	SWMHODL
^a Connecting swales are water features that do not meet the definition of a waterbody (not an ophemeral wat and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, f an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404	erbody) in that there is not a defined bed, bank,
^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths or roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the act function or riparian vegetation only moderately compromised; basis readerately used altered	
greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturban Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natu channel width on each side; lack of regeneration; filtering function severely compromised; banks unsta turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fis severe disturbance from livestock or man.	ce by livestock or man. ral vegetation less than 1/3 of the active
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AVH	1005
THEFT	5wnh005
- TITTTTTTTTTTT	Form Rev. 2/21/201



Waterbody swmh004 facing south upstream



Waterbody swmh004 facing north downstream



Waterbody swmh004 facing east cross stream

Survey Descrip	otion					· · · ·		
Project Name:		Waterbod	ly Name: REM	ncecz	<	Waterbody ID:	D J	
DTI Supp State: County	ly Hendo	o ETER	US-CPAIRS		7.1			Date:
State: County	V:	C Sne		noun		STEAR		11-13-14
PA Wa	estmorely	C I	ompany: DDWEST	-	Crew Me	mber Initials: P	hoto ID(s):	
Tract Number(s): 35 - 244		N	illepost Entry: 2.5	Milepost I	Exit:		land ID(s):	
Survey Туре: (check олө)) K Centerl	ine R		Access R	***	Other:	((1002	-e-w
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(Check one)	Stream		h	Lake	Conne	ecting swale *	Other:	
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	ft. i 🦯 Thi	ent, matted, or ssing vegetatior	Mrack	F	itter and ebris	Abrupt pla	nt Pres	Soil characteristic
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	leandering	2 (fps		Left:	ft.	Righ	<u>30</u> degrees
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quatic Organisms		-11 UVVAC	۵]					
» None								
nvasive and/or T&E ^{so} 入の	Species Observe	ed:			*** ````			
ributary is: heckone)	X Natural	[] Ar	tificial, man-made	Mani	pulated			
heck all that apply)	Livestock	browned 1913	anure in]Waste dis pipes		(X) Other:	C 22	
tream Quality ^b : heck one)	High	i terre	oderate	Low		-	<u>case y</u>	May paster

Waterbody Data Sheet

Waterbody ID:

	waterbody iD:
	SWMH005
^a Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.	duration to make it more than just
^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; b roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and disturbance by livestock or man.	anks stable and protected by stable aquatic habitat; no
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel w function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, sub greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestoc	idth on each side; filtering merged objects covered with k or man
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; severe disturbance from livestock or man.	less than 1/3 of the active
Notes	***
Waterbody Sketch Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated	1 features
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SWMHCOS HIT	
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The Flow	
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Waterbody swmh005 facing east upstream



Waterbody swmh005 facing west downstream



Waterbody swmh005 facing upline cross stream

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urvey Description								
oject Name:	1 ~	Waterbo	dy Name:		1	Waterbody ID:	Date	:
STT Supply k	tender	UN	T TO Korme	.rer Holl	'ow	\$SWMH	012 11	-14-14
oject Name: ST7 Supply k ate: County: PA West,	moreliav	D	Company:		DD, I	$B = \begin{bmatrix} 1 \\ 2 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3$:o ID(s): ≳	
act Number(s):	, toy py from an an an end of the set of an end of the set of the	***		Milepost E		Associated Wetlan		
35-238			2.15	2:1	5	JUCEN	2	
arvey Type: lock one)		Laboratory Constant	Re-Route	Access Ro	bad	Other:		
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ream Classification: heck one)	Ephemera	al 🔲	Intermittent	Perennial				
aterbody Type:	ream 🔲 Riv	er 🛄 I	Ditch	Lake	Conne	ecting swale a	Other:	
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X Mean	ndering		< [fps		Left:	<u> </u>		L/A degrees
Qualitative Attribu	tes						•	
Water Appearance; (check one)	lo water	Clear []	Turbid She	en l] Surface scum	Algal X mats	Other Some	Iron Oxidizin bacteria
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% of Substrate:	%	10_%	20%	70	%	%		%
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<u>10</u> ft.	(approx.)			in.		5	in.	
Dominant Bank Veget	ation: 4, Acei	- rubi	rum, RUSA 1	nulfit	lora,	Solidago al	Hissima, D	actylis glamoi
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Aquatic Organisms O	bearvad:							
(Hst) NONE	oserveu.							
Invasive and/or T&E S (^(ist) Rasa mul	pecies Obser	ved:						
Tributary is: (check one)	Natural		Artificial, man-m	ade 门 I	Aanipulate	;d		, i
Disturbances: (check all that apply)	Livesto access		Manure in waterbody	Waste pipes	e discharg	e 🎽 Othe	r: bardore pasitu	J by had
Stream Quality ^b : (check one)	[] High		Moderate	Low				

^a Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.

^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

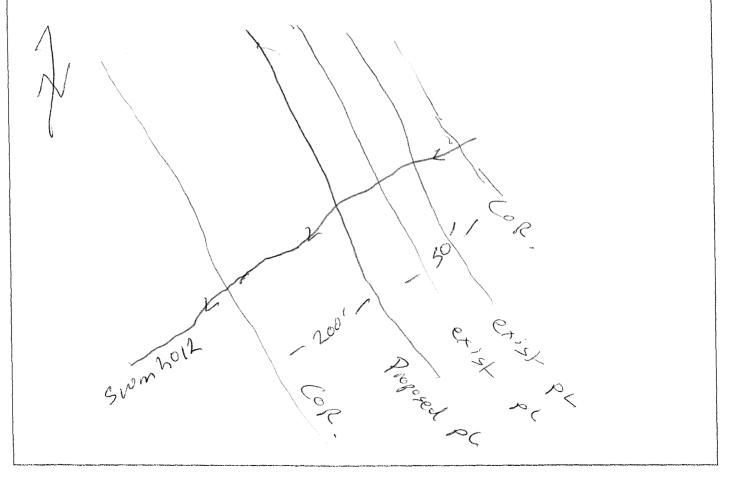
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes

Waterbody Sketch

Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.





Waterbody swmh012 facing upstream



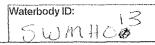
Waterbody swmh012 facing downstream



Waterbody swmh012 facing upline cross stream

Waterbody Data Sheet

Survey Description Project Name: Waterbody Name: Waterbody Name: Waterbody Name: Date: 1/-1/4/-1/4 State: County: County: Company: Crew Member Initials: Photo ID(s): 1/-1/4/-1/4 State: County: DDWEST JD_DB JD JD JD Tract Number(s): Millepost Entry: Millepost Exit: Associated Wetland ID(s): JD J
DT1 Supply Hender UNT TO Kernecer Hellow SW M H013 //-//4 State: County: DDWEST DTD, DB 3 Tract Number(s): Milepost Entry: Milepost Exit: Associated Welland ID(s): 35 - 236 I.9 I.9 WWM H007e_W Survey Type: Centerline Re-Route Access Road Other: Physical Attributes Stream Classification: Ephemeral Intermittent Perennial Waterbody Type: Ephemeral Intermittent Perennial Waterbody Type: (effeck one) Stream Classification: Ephemeral Intermittent Perennial Waterbody Type: OHWM Indicator: Oclear line Shelving Wrested Scouring Water Width: 5 ft. Bent, matted, or Wirack Litter and Abrupt plant community ohange Soil characteristic Width of Waterbody - Top of Bank to Width of Waterbody - Water Edge at Centerline: Width of Water deprody Perth of Water at Centerline: Top of Bank at Centerline: ID n. 2.5 ft. Bank height Right: 2/0 degrees
State: County: Company: Crew Member Initials: Photo ID(s): PA Westmore Wastmore Wilepost Entry: Milepost Exit: Associated Wetland ID(s): 35 - 2.36 I.9 I.9 Associated Wetland ID(s): Associated Wetland ID(s): Survey Type: Sinvey Type: Centerline Re-Route Access Road Other: Physical Attributes Stream Classification: Ephemeral Intermittent Perennial Waterbody Type: Stream River Ditch Pond Lake Connecting swale* Other: OHWM Indicator: Clear line Shelving Scouring Water staining Width: 5 ft. Bent, matted, or Wivack Litter and debris Community change Scouring Water staining Width: 6 ft. 2.5 ft. 2.5 ft. 2.1 fps Entry: Bank height Right: 2.1 ft. Sinuosity: Water velocity: ftasg Clear line: 2.5 ft. Bank height Right: 4.0 degrees Lib: 1.1 fps Left: 7
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(Check one) Straight (Approx.) Right: 6 ft. Right: 4/0 degrees Meandering Image: Straight of the straight
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Leit. / Leit. /
Qualitative Attributes
Water Appearance: (check one) No water X Clear Turbid Sheen Surface Algal Other
(check one) No water Clear Turbid Sheen Surface Algal Other:
Substrate: Sand Silt/clay Organic Other:
% of Substrate: 30 % 40 % % %
Width of Riparian Zone: Vegetative Layers:
Image: ft. (check all that apply) Image: Trees: Image: Shrubs: Image: Herbs Image: Avg. DBH of Dominants: Image: Gamma and Gam
Dominant Bank Vegetation: (150) SA (1x nigra, ROSA multillorA, Phalaris arundinaca, Dipsacus
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, rilfles, deep pools): (1/51) MHR, pools, WAF DACKS
Aquatic Organisms Observed:
(11st) small Fish
Invasive and/or T&E Species Observed:
1 ROSA MULTITOPA
(^(IIST) ROSA MULTIFOTA Tributary is: (check one) Natural Artificial, man-made Manipulated
Tributary is:



^a Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.

^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes

Waterbody Sketch

Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.





Waterbody swmh013 facing upstream



Waterbody swmh013 facing downstream



Waterbody swmh013 facing upline cross stream

urvey Desc	Data Sheet		- · ·			a y 194 ya a a a a a a a a a a a a a a a a a a		
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	Meandering		<u> </u>		Left: 2	<u> </u>	4	Left: <u>30</u> degrees
	Attributes							
Water Appear (check one)	rance: No water	Clear] Turbid	en [] surface	Surface scum	Algal mats	Other:	
Substrate: (check all that app	Bedrock	Gravel	Sand	K silt/cl		Organic	Other:	
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	C (check a	i that apply) 0BH of Dor	Trees:	ín.	ļ	Shrubs:	<u>//</u> in.	Herbs
Dominant Ba (//st)	ank Vegetation: 1000	nina	Rosin nu	CRitto	A, D	actylis.	glomera	turs, Solidayo altosing
	Itats (ex; submerged or emerg DO 0/3	ed aquatic veg	etation, overhanging banks/	oots, leaf pack	s, large submer	ged wood, riffles, de	eep pools):	negy parte da order a frei de Brannen y Parta (Constant de Brannen y Brannen de Brannen y Brannen de Brannen de
Aquatic Orga (^{//st)}	anisms Observed: UDWE		- Poople Weilling - The State of the State of St	anne, camact, accan prac à warner défense a				
10.0 1	1/or T&E Species Obser Sty multi	V /	anderse menter and a second a second and an and an and an and an and an		*******************************	2	and the second	
Tributary is: (check one)			Artificial, man-m	ade [Manipulate		999 V - Y - Y - Y - Y - Y - Y - Y - Y - Y -	\cap
Disturbance (check all that ap)		ck	Manure in waterbody	Wast pipes	e discharge		Other: CleA	ring for Row
Stream Qua	lity ⁶ :			Low				

Waterbody ID: SWMHODG * Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting. ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features. SWMH 606 ₹ FLOW

Waterbody Sketch

Notes

Amased Row



Waterbody swmh006 facing east upstream



Waterbody swmh006 facing west downstream



Waterbody swmh006 facing upline cross stream

Nurvey Description SUM_HOD 7 roject Name: Materbody Name: Waterbody ID: Date: DT I Supply Holder Company: Crew Member Initials: Photo ID(s): PA West more Land D DUSE T JD, DB Z Sassociated Wetland ID(s): Associated Wetland ID(s): II-13-1L Sassociated Wetland ID(s): II-3 II-3 Sassociated Wetland ID(s): II-3 II-3 Waterbody Type: Contorline Re-Route Access Road Other: Physical Attributes Stream Classification: Ephenoral Intermittent Perennial Waterbody Type: Stream Classification: Ephenoral Other: Other: PHysical Attributes Stream Classification: Ephenoral Intermittent Perennial Waterbody Type: Stream Classification: Ephenoral Intermittent Perennial Water dow Width of Waterbody -Water Edge to Connunity of ange Soli characterist Width of Waterbody -Water dige to Connucling on plant Milepost Entrie: n. n. n. Sinuosity: R Milepost Entrie:	iterbody Data S	hest	and Charters and C			
Operation Intervention In					< 1. JAAHA	N7
PA Westmonetand DDUEST JD, DB Z Paran Number (2): Milepost Entry: Is 3 Milepost Entry: Milepost Ent	oject Name:	Water			Waterbody ID: DOZ BESTE	Date:
univery Type: Image of the second in the	PA West		DDWEST	- JD,	nber Initials: Phot	o ID(s):
Metadinii				$\frac{1}{V} = \frac{1}{2}$	Associated Wetlan WWM+	1003f
Tream Orassification: Epheneral Internittent Perennial Varietodory Type: Stream River Dtch Pond Lake Connecting swale* Other: Varietodory Type: Stream River Dtch Pond Lake Connecting swale* Other: Virtual OHWM Indicator: Water apply Mclear time Stream Scouring Water apply Virtual Care at Marageov Wrack Litter and Abrupt plant Scouring Scouring Scouring Water apply Virtual At the apply Water Edge at Care fine: Water Edge at Care fine: Abrupt plant Scouring Adaption Scouring		Centerline	Re-Route	Access Road	Other:	
Method Ephemeral Intermittent Pertonnial Vaterbody Type: Stream River DRch Pond Lake Connecting swate* Other: Writin Gradiant Stream Writin Gradiant Stream Writin of Waterbody Writ	hysical Attribute	8. 2				
DHWM DiffWM Infrictator: DiffW Infrictator: Infrictator	heck one)	Ephemeral	Intermittent	Perennial		n, ang pantakan pang bang pang bang pang bang bang bang pang pang pang pang pang pang bang pang bang pang bang Pang pang bang pang b
Width:	Vaterbody Type: heck one)	Stream 🛄 River 📘	Ditch Pond	Lake Conne	ecting swale a] Other:
Midth of Waterbody - Water Edge to Deproved Fop of Bank at Centerline: Water Edge at Centerline: Deproved All n n. n. Sinuosity: Bank height Right: 2 Bank height Right: 2 n. Sinuosity: Bank height Right: 2 n. Bank height Right: 2 n. Right: 30 degre Qualitative Attributes Meandering Z 1 the Left: 2 n. Left: 30 degre Qualitative Attributes Water velocity: Bank height Right: 2 n. Left: 30 degre Qualitative Attributes Water Appearance: Clear Turbid Sheen Surface Atgal Other: -			Clear lin on bank	e Shelving	Wrested vegetation	Scouring Water stainin
Top of Bank at Centerline:	ft.	and the second			community of	change ^{them} change
Sinuosity: Water velocity: Bank height Bank slope Clear (m) Straight Z_ft. Left: Z_ft. Meandering Z_ft. Left: Z_ft. Left: Z_ft. Qualitative Attributes Water Appearance: Output: Straight Left: Z_ft. Left: Z_ft. Substrate: No water M Clear Turbid Sheen Surface Algal Other: Substrate: % M & ZD % H M & % M % % of Substrate: % M & ZD % Herbs: in. in. Ømin ant Bank Vegetative Layers: Meres at the apply M excelled for apply M excelled for apply M excelled for apply M excelled for apply Ømin ant Bank Vegetation: % M for apply M of apply M excelled for apply in. in. Dominant Bank Vegetation: M of M for apply M for apply M for apply M excelled for apply in. in. Dominant Bank Vegetation: M for apply M for apply M for apply M for apply M for apply <td< td=""><td>Nidth of Waterbody - Fop of Bank at Center</td><td>Top of Bank to line:</td><td></td><td></td><td></td><td>t Centerline:</td></td<>	Nidth of Waterbody - Fop of Bank at Center	Top of Bank to line:				t Centerline:
Check of and intervention Image: Check of and intervention Check of the image: Check		<u></u> ft.	dovanaju, o vojamanije je	ft.		ft.
Image: Construction of the second	check one)	HADDIOX.1	ocity:)fi	Bank slope Right: ろ∂ degre
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(check ane) No water Clear Turbid Sheen Surface Algal Other: Substrate: Bedrock Gravel Sand Silt/clay Organic Other: % of Substrate: % % % % % % % Width of Riparlan Zone: % % % % % % % Width of Riparlan Zone: (check all mat apply) Arg. DBH of Dominants: in.	Qualitative Attrib	utes		annan ann an Frank an Frank ann a	an a	
(check all that apply) % of Substrate: % of Substrate: </td <td>Water Appearance: (check one)</td> <td>No water 🕅 Clear</td> <td></td> <td>1.5446-01</td> <td>breating Camerored</td> <td>Other:</td>	Water Appearance: (check one)	No water 🕅 Clear		1.5446-01	breating Camerored	Other:
Width of Riparkan Zone: Vegetative Layers: Image: Constraint of the apply image: Constraint of		Bedrock SGravel	Sand _	Silt/clay	Organic 🚺 🤇	Other:
Image: Check all that apply)	% of Substrate:	the second secon	/0 /0	410_%	<u> </u>	%
Dominant Bank Vegetation:		(check all that apply) Avg. DBH of D	ZTrees:	ín.	Shrubs:	in.
(18) Podls, (rH)s, Aquatic Organisms Observed: (18) NONE Invasive and/or T&E Species Observed: (18) NONE Invasive and/or T&E Species Observed: (18) NDNE Tributary is: Natural (check one) Natural Disturbances: Natural (check all that apply) Livestock Stream Qualityb: Intervention	Dominant Bank Vege (184) Struct Mice	station:	nigna, Ver	noma	Ru	less alleghenien
Aquatic Organisms Observed: (Ist) NOVE Invasive and/or T&E Species Observed: (Ist) NDNE Tributary is: (check one) Natural Artificial, man-made Manipulated Disturbances: (check all that epply) Livestock access Waste discharge Other: Values Stream Qualityb:	(1151)		egetation, overhanging banks/ro	oots, leaf packs, large submer	ged wood, riffles, deep poo	is):
Invasive and/or T&E Species Observed: (Ist) Tributary is: (check one) Natural Artificial, man-made Manipulated Disturbances: (check all that apply) Livestock access Manure in waterbody Stream Quality ^b :	Aquatic Organisms ()				
(check one) X Natural Artificial, man-made Manipulated Disturbances: (check all that apply) Livestock Manure in waterbody Waste discharge Other: Munor fl from official, man-made Stream Quality ^b : Stream Quality ^b : Manure in Manure in Maste discharge Other: Munor fl from official, man-made	Invasive and/or T&E	Species Observed:		-	*******	
(check all that apply) Livestock Manure in Maste discharge Other: Maccess Stream Qualityb: Stream Qualityb: Manure in Maste discharge Other: Maccess		XNatural	Artificial, man-ma	de Manipulated	d	
Stream Quality ^b : (check one) High Moderate Low		Livestock				runott tro
		[] High	Moderate	Low		

Waterbody ID:

SIDMHOM

* Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting. ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes Waterbody Sketch Include north arrow, conterline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features. ,vrr~0031 FLO Swmhoor 120 00 m



Waterbody swmh007 facing east upstream



Waterbody swmh007 facing west downstream



Waterbody swmh007 facing upline cross stream

Open Waterbody Data Sheet

Survey Description	n			
Project Name: DT1	Supply Waterbody	Name:	* Waterbody ID:	Date:
4		ned pond	OWMA	001 11-13-14
	County:	Company:	Crew Member Initials:	Photos:
PA	WESTMORELAND	DDWEST	JD, OB	2
Tract Number(s):		Nearest Milepost:	Associated Wetl	
35-23	31	1	www.	10036-W
Survey Type: (check one)	Centerline	Re-Route □Ac	cess Road Other:	
Physical Attribute	S			
Waterbody Type: (check one)	k Pond 🛛 Natural Pond 🗍 L	ake 🗆 Reservoir 🗆 Im	poundment 🗆 Oxbow 💢 Othe	m Man-made
Hydrologic Regime:	Permanently Flooded	Semipermanently Floo	ded 🛛 Seasonally Flooded	Temporarily Flooded
онwм	OHWM Indicator:			
Height: NA ft.	(check all that apply)	Clear line on bank	□Shelving □Wrested vegetation	5
t.	□Bent, matted, or vegetation	missing ⊟Wrack line	□Litter and □Abrupt p debris community	olant □Soil characteristic change y change
Depth of Water:	Bank hei	ght (average):	Bank slope (average):
	<u>ft.</u>	<u>ft</u> .		<u>30</u> degrees
Qualitative Attrib	utes			
Water Appearance: (check one)	□No water □Clear 🌶	Turbid □Sheen on surface	⊡Surface □Algal scum mats	□Other:
Substrate: (check all that apply)	Bedrock Boulder D	,	Sand 🖉 Silt/ clay 🗆 Orgar	
% of Substrate:	%%	%%	<u>20 % _80 %</u>	_%%
Width of Riparian Zo	ne: Vegetative Layers: (check all that apply)	K Trees:	Saplings/Shrubs:	A Herbs
<u> </u>	Avg. DBH of Dominar	n ts: <u>15</u> in.	in.	in.
Dominant Bank Vege	(approx.)			
Juglansnic	ira, Vernoniag	ignorated Eleo	gnus umbalata	, Dattylis glomerata
Aquatic Habitats (ex PODL		, overhanging banks/roots, leaf pa	acks, large submerged wood, riffles, deep p	ools, etc.):
Aquatic Organisms (
Small	Λ I · · ·			
T&E Species Observ				
Disturbances (ex: live 人) る	stock access, manure in waterbody WE_	waste discharge pipes):		
Waterbody is: (check one)		icial, man-made 🛛 M	anipulated	
Waterbody Quality ^a (check one)	High 🗆 Modera	ate Low		

Waterbody ID: WMH00 High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes: Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features) WWMH003A Lou OOH MCO Rapesed Role

owmh001



Waterbody owmh001 facing south



Waterbody owmh001 facing north

owmh001

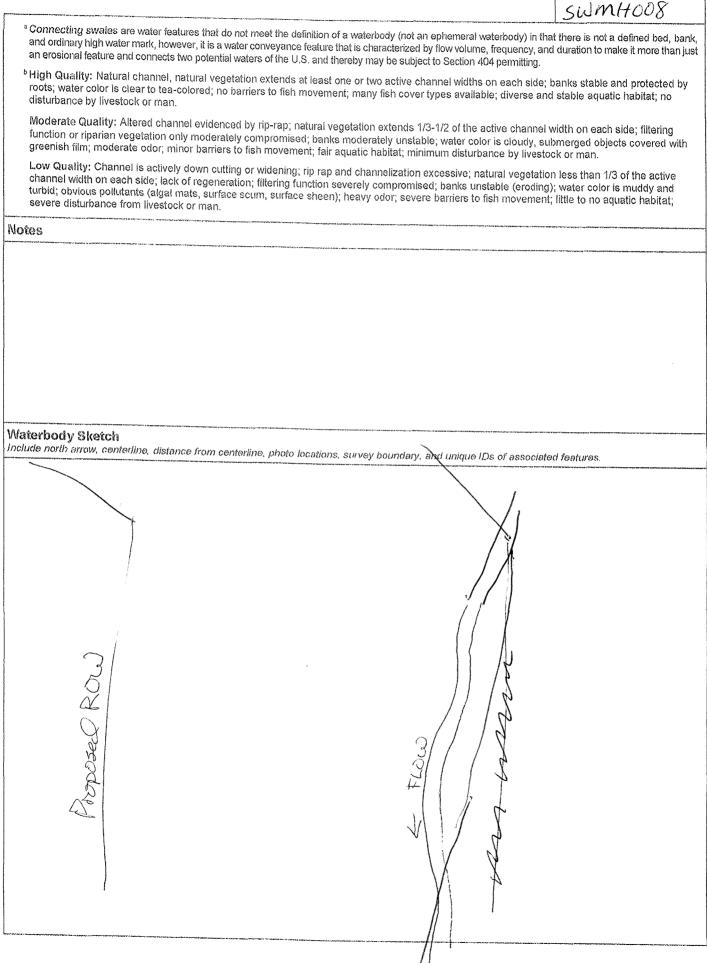


Waterbody owmh001 facing east

Waterbody Data Sheet

Survey Description	n .	۵۵ - ۲۰۰ میشوند. باز ۲۰ میرود میرود باز ۲۰ م ۱۹	844-14 7-19 0 0000 - 1010 0000 - 1010 0000 - 1010		******		angan ay ang panalikan di terter di kana di kana an		
Project Name:	1. 0	Waterbody N				Waterbody ID: SWMH	0×5	Date	
DT1 Supply	Hunder	UNT	TO STEE	LS REEK				1	-13-14
State: County:	morehand		pany:			nber Initials:	Photo ID(s):		
1 22 1	morenana		DIVES			<u>d</u> B	$>$		
Fract Number(s): 35 - 229, 2	20		post Entry:	Milepost E		Associated W			
05 201/2			6 x 2			NO			
Survey Type: (check one)		Re-F	loute] Access R	oad	Other:		** \$****	
Physical Attribute									
Stream Classification: (check.one)	Ephemeral		mittent [2] Perennia	1				
Waterbody Type: (check one)	Stream	Ditch	Pond	Lake	Conn	ecting swale ^a	Other:		
онум	OHWM Ind (check all that e		No close lie		Shelving	Wreste		couring	Water
Width:tt.		11.11	Clear lir on bank	in another	onoraniy	vegeta		and und	staining
Height: $4^{\prime\prime}$ ft.	Bent, missi	matted, or ng vegetation	Wrack line		Litter and debris	Abrupt	plant unity change	1	il characteristic ange
Width of Waterbody - Top of Bank at Cente			of Waterbody - Edge at Centerl		e to	Depth of Wa	ater at Center	rline:	
·	ft.		-	ft.			3'	/ft.	
Sinuosity:	Wa	ter velocity:		Bank	reight		Bank sl	ope	*********
(check one)	aight	irox.)			Right: \	ft.		Right:	<u>40</u> degrees
X Me	andering	≤ 1	fps		Left:	ft.			<u>40</u> degrees
Qualitative Attrib	utes	1999 - 1997 - 19				1999 - La Carlo I. I. Standard - La Carlo Ca			
Water Appearance: (check one)	No water 🕅 C	lear [] Tui	bid She	en [] Surface	Algal mats	Other:		
Substrate:	Bedrock	iravel [Sand	K_Silt/cla	v D	Organic	Other:		
% of Substrate:	%	%	20 %	70	%	10 %			%
Width of Riparian Zo		ve Layers:	1. frank	, and a second		Shrubs:		•••	Herbs
ft.		H of Dominar	ts:	<u>18</u> in.	1	Snrubs:	in.		Leibs
Dominant Bank Veg		******				*****		ART 2	ar f an a fair an
Aquatic Habitats (ex: (181) POD/S ,	submerged on emerged		overhanging banks/r	oots, leaf packs	, large submei	ged wood, riffles, de	oep pools):		
Aquatic Organisms		·				, 			
	WE								
Invasive and/or T&E		ed:	alanan a karan san _{da} n marian karan san san anan ang		19. 18 C HILL T C & L. 197 (2. 1987) C & LO	ан төрөөрөн калу талараа кайлага кайта байн айсан			یر و مسیولات او این
Tributary is: (check one)		[] /	Artificial, man-ma	ade 🔲	Vlanipulate	d	99		
Disturbances: (check all that apply)	Livestock access		Manure in vaterbody	Wast	e discharge		Other:		
Stream Quality ^b : (check one)	High	punters,	Moderate	/X Low		<u></u>	**************************************	199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199	

Waterbody ID:





Waterbody swmh008 facing north upstream



Waterbody swmh008 facing south downstream



Waterbody swmh008 facing east cross stream

aterbody Data She	et									
urvey Description			and and a second se			******	anne an ann a' ar ann a' a mar ar an	*****		
oject Name:	*****		dy Name:	e na balana i tangé kana ng	**************************************		Waterbody ID		Date:	na an a
TI Supply Lende	br	UN	T TO STEEL	5 6	ZVŇ			+014	/1-	15-14
PTI Supply Lende tate: County: PA Westme	melan	Ó	Company: DDWEST	~			mber Initials: ${\cal DB}$	Photo ID(s):		alauch frankling an 1974 an 1976 an 1976 an
ract Number(s): 35-059,020, 35-220,221,222	, 35-011 , 223,29	6.01 4,225	Milepost Entry:	Milep	oost Exi		Associated W	/etland ID(s): -10096 H010F	- W	4
urvey Type;	Centerline	*****			ess Roa	d	Other:		V.V	
hysical Attributes	νους δαθητής του τις η διαφορια βάλους του του μετουργιου Τ		an maan kan dip kan tan an initi na kan dipan kan kan an a		10000003,0000 5 100000 5 2		n ang nangangkangkangkang nangangkang nangangkang nangangkang nangangkangkangkang nangangkang nangangkang nang Nangangkangkangkangkangkangkangkangkangka			
tream Classification:	Ephemera		Intermittent	Per	ennial	5 449 (au, ait " albin a right); t	, um de la constant a la constant à la sel de la constant de la constant de la constant de la constant de la co			
Vaterbody Type: heckone)	m 🗍 Rive	er [] (Ditch		ake [Conn	lecting swale ^a	Other:		
DHWM	OHWIM In			*********				1.01722.0 S		
Width: $\frac{4}{100000000000000000000000000000000000$	(check all tha	t apply)	Clear li on ban	ne k	[_]Sh	elving	Wrest vegeta	ed Sco ation	ouring	Water staining
Height:	miss	t, matted, c sing vegeta	ition line		de de	er and pris	and a state of the second s	unity change	cha	characteristic nge
Vidth of Waterbody - Top fop of Bank at Centerline	of Bank to	W W	idth of Waterbody - ater Edge at Center	Water line:	Edge to)	Depth of W (Approx.)	ater at Centerlir	16:	
8 "				(ft.				1.5 "	ft.	
Sinuosity:		ater veloc			ank hei	aht		Bank slop	***	
check one)	14	pprox.)				yht:	ft.	1 .	lght:	degrees
X Meande	ring	4	fps		l	.eft:	II.		Left:	degrees
Qualitative Attribute:	<u>-</u> 8		a yang bindu yang binduka kanan di Katalah yang binduka sina kanang kanang kanang kanang kanang kanang kanang k							
Water Appearance: (check one) No v	vater 🔀	Clear	Ka Matana M	een surface		Surface	Algal mats	Other:		20, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19
Substrate: Bed	rock	Gravel	Sand	R	Silt/clay		Organic	Other:		
% of Substrate:	%	%	20%		80,	6				%
Width of Riparian Zone:		tive Layer that apply)		******			Shrubs:			Herbs
<u> </u>	(approx.)	BH of Dor	ninants:	······	in.		an and a second a se	in.		
Dominant Bank Vegetation	on: 174, R	03.7 1	melfifler	19, I	Rubi	2 10	weden	nis, Phalo	MBC	iransina
Aquatic Habitats (ox: submi	erged or emerge	d aquatic veg	station, overhanging banks,	froots, lea	if packs, lar	ye subme	erged wood, riffles, d	leep (xools):		
Aquatic Organisms Obse	arvad									
(11st) Small Fish										
Invasive and/or T&E Spe (1/61) Rosn mult		/ed:	namen ander en	***		2000 - ^C W¹N , Marchard		900 97 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Tribusary le:			Artificial, man-ir	nade	[] hA~	nipulate	d	14, g. g. 10 2 11, 11, 12 2 2 1 g. g. g. g. g. d. 10 7 10 10, 12 10 1		
Disturbances: (check all that apply)		sk	Manure in waterbody		Waste d	****		other: 'ADT		And a state of the
Stream Quality ^b : (check one)	High	*****	Moderate	fuccould	rom Pibés	################################			<u> </u>	
				•••••••••••••••••••••••••••						

SWMHOIL

^a Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.

^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

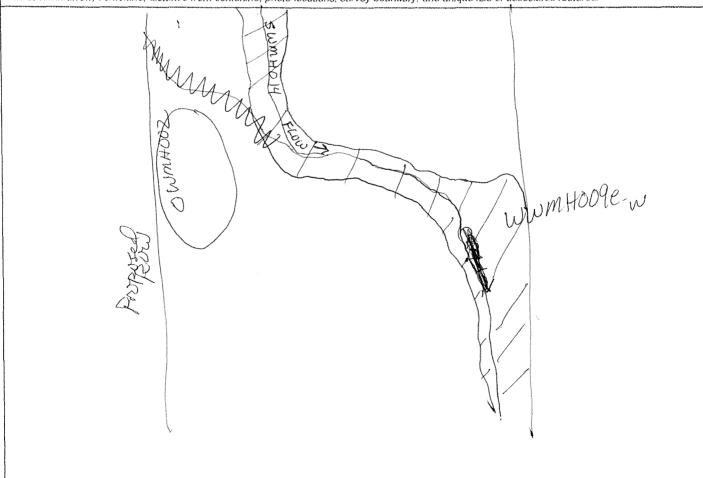
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes

Waterbody Sketch

Include north arrow, conterline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.





Waterbody swmh014 facing upstream



Waterbody swmh014 facing downstream



Waterbody swmh014 facing upline cross stream

Open Waterbody Data Sheet

Survey Description							
Project Name: DT	SUPPly	Waterbody N			Waterbody ID:	Date	
	Hender	WKOW.	\sim		OWMHOD Z	_ //	-15-14
State:	County:		Company:	Crev	/ Member Initials:	Photos:	
PA	Westmorel	and	DDWEST	512	, DB	3	
Tract Number(s):			Nearest Milepost:		Associated Wetland	ID(s):	NONE
35-223			1.0		COLOTENE	EL IN	5
Survey Type: (check one)	Centerlin	e DF	I Re-Route □A	ccess Road	□Other:		
Physical Attribute	26						
		IPond □ La	ike 🗆 Reservoir 🗆 Ir	mpoundment [∃ Oxbow & Other:	MAN-mpe	le fish pund
Hydrologic Regime:	· · · ·				14.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	2 44 0	cre
	A Permanently	Flooded	3 Semipermanently Flo	oded 🗆 Sea	isonally Flooded	Temporarily Fl	boded
OHWM Height: Λ /Ά	OHWM Indi (check all that a		Clear line	□Shelving	□Wrested vegetation	Scouring	□Water staining
Height: <u>M</u> A _{ft} .			nissing □Wrack line	□Litter and debris	·	t ⊡Soil charac	
	Vegete				-	-	
Depth of Water: しいド	Jown	Bank heig	ht (average):		Bank slope (ave		
N/AD	ft.		<u>2,5</u> ft.		4	2D_degree	S
Qualitative Attrib					L		
Water Appearance:		~	**************************************				
(check one)	□No water □	Clear 📈	Turbid □Sheen on surface	⊡Surfa scum	ce □Algal □ mats	Other:	
Substrate: (check all that apply)	Bedrock B	oulder 🗆 C	Cobble Gravel	Sand D	Silt/ clay □ Organic	Other:	NKNOWN
% of Substrate:	%	%	%%	%	%%	%	
Width of Riparian Zo	ne: Vegetativ	-	Trees:		aplings/Shrubs:	A Herbs	
<u>ft</u> .	Aug DRU	of Dominon		_	1 0		
N/A□	(approx.)	of Dominan	t s: in.		in.	in.	
Dominant Bank Vege Juneus a	eccemence	res, Ji	incers interio	or, Car	ex comosa,	Aster pile	sens
Aquatic Habitats (ex:	submerged or emerged a	quatic vegetation,	overhanging banks/roots, leaf	packs, large submer	ged wood, riffles, deep pools,	etc.):	
Deep por	5l						
Aquatic Organisms (<u> </u>						
Fish							
T&E Species Observ	ed (list):				······		
NONE	. ,						
Disturbances (ex: live	estock access, manure	in waterbody,	waste discharge pipes):				
	1	ſ	urrounding	pond			
Waterbody is: (check one)		<i>a</i>		Manipulated			
Waterbody Quality ^a (check one)		Modera					www
	·	- TA	··· /~~				

				V	Vaterbody ID:	
				¢	WMHOD 2	
High Quality: Natural, natural b barriers to fish movement; many				protected by roots; wa	ter color is clear to tea-colo	red; no
Moderate Quality: Altered by rip only moderately compromised; b barriers to fish movement; fair ad	anks moderately	unstable; water color is	cloudy, submerged			
Low Quality: Rip rap and chann filtering function severely compr surface sheen); heavy odor; sev	omised; banks u	nstable (eroding); wate	r color is muddy a	ind turbid; obvious pol	lutants (algal mats, surface	eration; e scum,
lotes:						
/aterbody Sketch (Include	north arrow, cent	terline, distance from ce	nterline, data point	locations, survey bour	ndary, and IDs of associated	d featur
A	SOW	OWM4002	A Lee		t t t t t t t t t t t t t t t t t t t	
	franked ROW				Anna de vi	

owmh002



Waterbody owmh002 facing upstream



Waterbody owmh002 facing downstream

Survey Description		and an and the second and an		
Project Name:	Waterbody Name: UNT TO STEE	C < RUMI	erbody ID:	Date:
DT Supply Header		5	wmHO16	5-14-15
State: County: PA Vestmore/And	Company:		Initials: Photo ID(s):	
		JD,JE		ور المراجع الم
Fract Number(s): 35-009	_		ociated Wetland ID(s):	
	3.25	3.25	NDNE	
Survey Type: (check one)	Re-Route	Access Road	Other:	
Physical Attributes		nannan an ann an Anna a	na fan de de la martine en general en anna de la ser en en el martine de la service	
Stream Classification:	I X Intermittent] Perennial		
(check one)	kaseal funged	Lake Connectin	g swale ^a Other:	
OHWM OHWM In Width: 2_ft		e Shelving	Wrested Scou	uring Water staining
Height: <u><u><u></u></u>¹ ft. Ben miss</u>	t, matted, or Wrack sing vegetation	Litter and debris	Abrupt plant	Soil characteristic change
Width of Waterbody - Top of Bank to Top of Bank at Centerline:	Width of Waterbody - Water Edge at Centeri		apth of Water at Centerlin	e:ft.
Sinuosity: W	ater velocity:	Bank height	Bank slope	e
(Check one)	pprox.)	Right: 2	ft.	ght: $\underline{\mathcal{D}}$ degrees
X Meandering	<u> </u>	Left: 2	<u>к</u>	Left:
Qualitative Attributes	·		<u>n.</u>	degrees
Water Appearance:	turne turner	proto cita		
(check one) No water	Clear Turbid She on s	en L Surface L	Algal Other:	
Substrate: Bedrock	Gravel Sand	Silt/clay Or	ganic 🚺 Other:	
% of Substrate:%	40% <u>20</u> %	40%		%
	tive Layers: that apply) Trees:		Shrubs:	Herbs
ZLODt. Avg. DI (epprox.)	BH of Dominants:	<u> </u>	in.	
Dominant Bank Vegetation: 1980 Rubinic pseudoar	caria, Lindera	benzoin,	Sevecic obat	ter Entrelice
Aquatic Habitats (ex: submerged or emerged		oots, leaf packs, large submerged w	ood, rifiles, deep pools):	
Aquatic Organisms Observed:	1.	۵٬۰۰۰ میلاد در ۱۳۵۰ میلود و در میلود و این میلود و این میلود و این میلود و در میلود و در میلود و میلود و میلود میلود و این میلود و این میلو		
Small (noterfebra Invasive and/or T&E Species Observ	ed:	مەرىپىيە روغۇر يەرىكەر كەركەر كەر كەركەر كەركەر	₩₩₩₩₩₽₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	@#####################################
Eulalia vinines	1			
Tributary is: (check one)	Artificial, man-ma	de 🛄 Manipulated	********	
Disturbances: (check all that apply) Livestoc access	k Manure in waterbody	Waste discharge pipes	Other:	aing
Stream Quality ⁵ : (check one)	Moderate	Low	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

Waterbody Data Sheet

Waterbody ID: SORWMH016 * Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting. ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes Waterbody Sketch Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.

UAN5

ROXO

Sw Mitz



swmh016 facing upstream



swmh016 facing downstream



swmh016 across

Waterbody Data Sheet

Survey Description			
Project Name:	Waterbody Name:	Waterbody ID:	Date:
DTI Supply Hender	UNITO HAY M Creek		015 11-14-15
State: County:	Company:	Crew Member Initials:	
PKJ Westmorelion	Q DDWEST	JD, DB	3
Tract Number(s):	Milepost Entry: Mi	lepost Exit: Associated We	etland ID(s):
35-077	0.2	O.Z WWW	HONF-W
Survey Type: (chieck one)	Re-Route A	ccess Road Other:	
Physical Attributes			
Stream Classification: (check one)		Perennial	
Waterbody Type: (check one)	r Ditch Pond	Lake Connecting swale ^a	Other:
OHWM OHWM Ind Width: 5 ft		Shelving Wrestervegetat	
	matted, or Wrack ng vegetation line	Litter and Abrupt debris commu	plant Soil characteristic nity change
Width of Waterbody - Top of Bank to Top of Bank at Centerline:	Width of Waterbody - Wat Water Edge at Centerline:	er Edge to Depth of Wa	ter at Centerline:
	2		۱՝՝ ft.
Sinuosity:	ter velocity:	Bank height	Bank slope
	prox.)	Right: 6 ff.	Diabét
Pressonal ~	<) fps		kight. <u>/ </u> degrees
X Meandering	lps	Left: /ft.	Left: <u>45</u> degrees
Qualitative Attributes			
Water Appearance: (check one) No water X C	lear Turbid Sheen on surfa	Surface Algal C	Other:
Substrate: KBedrock A G	aravel Sand	Silt/clay	Other:
% of Substrate: <u>30</u> %	<u>30 % 10 %</u>	30% %	%
Width of Riparian Zone: Vegetati	ve Layers: (at apply)	Shrubs:	Herbs
7 (DO ft. Avg. DB	H of Dominants: <u>8</u>	in	in.
Dominant Bank Vegetation: (1/151) Umus Amaricana Aquatic Habitats (ex: submerged or emerged a	Acer rubrum, M	icroskyrum vimere Xyronim Lydropipe	a Diroclen sensibilis,
Aquatic Habitats (ex: submerged or emerged a (1)(st) RIALE, ports / emf	aquatic vegetation, overhanging banks/roots, I	eaf packs, large submerged wood, riffles, dee	p pools):
Aquatic Organisms Observed:			
Invasive and/or T&E Species Observe	d:		
Microstegum urmen			
Tributary is: (check one) Natural	Artificial, man-made	Manipulated	
Disturbances: (check all that apply) Livestock access	Manure in waterbody] Waste discharge Of pipes	her:
Stream Quality ^b : (check one) High	Moderate	Low	

SWMHOIS ^a Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes Waterbody Sketch Include north arrow, centerline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features $\rightarrow 7$ SUMOLS NMHDIIF



Waterbody swmh015 facing upstream



Waterbody swmh015 facing downstream



Waterbody swmh015 facing upline cross stream

aterbody Data Sheet					
Survey Description					
roject Name:	Waterb	ody Name:	Name and a got through place of the two operations as the colorest sectors	Waterbody ID:	Date:
DTI Supply HEAD		T TO HAYIK	UN	SWMHOI	
tate: County: PA Westmore	land	Company: DDWES	Cre	w Member Initials: Ph	oto ID(s):
T. B Tonk M		Milepost Entry:			and ID(s):
Compressor Stat	tion			100,02	
Gurvey Type:	centerline	Re-Route	Access Road	[为 Other:	mpnessor station
hysical Attributes					
		Intermittent	Perennial		
Vaterbody Type: Check one)	River	Ditch Pond	Lake [Connecting swale ^a	Other:
	DHWM Indicator: sheck all that apply)	Clear li on ban	ne Shel	ving Wrested	Scouring Water staining
Height: 2/" ft.	Bent, matted, missing vegeta	or Wrack ation line	Litte debr		nt Soil characteristic y change change
Nidth of Waterbody - Top of I fop of Bank at Centerline:	Bank to 🛛 🕅 🛛 🕅 🖤	idth of Waterbody -		Depth of Water (Approx.)	at Centerline:
8	VV	ater Edge at Center /			(^{re} ft.
<u>ft.</u>	hadrateria		ft.		Bank slope
Sinuosity: (check one)	Water velo (Approx.)	uty:	Bank heigl Rigl		Right: 80 degrees
X Meandering		∠fps	Ie	sft: 2-ft.	Left: <u>30</u> degrees
Qualitative Attributes	l	. 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997			
Water Appearance: (check one)	r 🕅 Clear [Deresterand	urface 🔄 Algal 📋 um mats	Other:
Substrate: Bedrock	Gravel	Sand	Silt/clay	Organic	Other:
% of Substrate:	% <u>30</u> %	10 %	60%	%	%
Width of Riparian Zone:	Vegetative Layer (check all that apply)	s: Trees:		Shrubs:	Herbs
<u>/ (</u>	Avg. DBH of Dor (approx.)	ninants:	in.	Minge Willing	in.
Dominant Bank Vegetation: (161) Sulidge altrosi	WIC. Ph	1		. /	/
			· · · · · · · · · · · · · · · · · · ·	J J	
Aquatic Habitats (ex: submerged (11st) R. H. e. posts	l or emerged aquatic veg	etation, overhanging banks/r	oots, leaf packs, large	submerged wood, riffles, deep p	ools):
Aquatic Organisms Observe	d:		*****		
	-			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Invasive and/or T&E Species	S Observed:		•		
Tributary is: (check one)	Natural	Artificial, man-m	ade 🔲 Manii	oulated	
Disturbances: (check all that apply)	Livestock access	Manure in waterbody	Waste disc		"Manutariad law
Stream Quality ^b :	High	Moderate	Low		

1	·····		
	1/1/10/110	1	1
	SWMHO	1	/
•,	. Lot and and the second and the for the second second	~	****

^e Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting.

^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

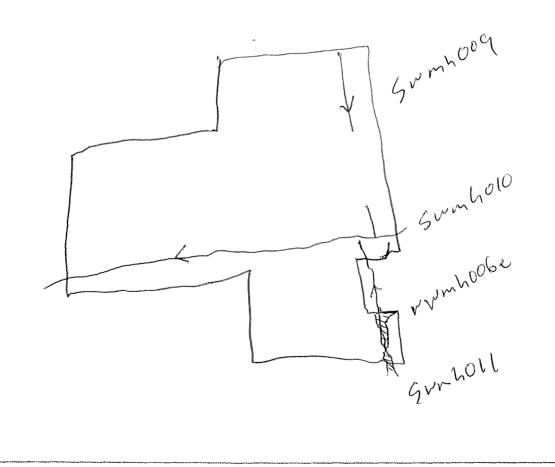
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes

Waterbody Sketch

Include north arrow, conterline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features.





Waterbody swmh011 facing upstream



Waterbody swmh011 facing downstream



Waterbody swmh011 facing upline cross stream

Waterbody Data Sheet

Survey Descri	ption							
Project Name:	5 1	Waterbody Nam				1.4.	******	
PTI Supply	Hender	the	in a l	$\overline{)}$		Waterbody ID		Date:
State: Count	V:	Hay mab	413 K	un	2 7 7	SWINH		11-14-141
	stmoreland	Compa	ny: LISS		1-1-1	ember Initials:	Photo ID(s):	
Tract Number(s):		JUU				DB		
J.B. Tonki	In	Milepos	st Entry:	Milepost	Exit;	Associated W	etland ID(s):	
	sor Station			-		NONE	~~ ~~~	
Survey Type: (check one)	Centerline	Re-Rout	ie [] Access R	oad	₩ Other: ⊿		
Physical Attrib	utes	ر میرد و در ور میرد و این از می این این این این این این این این این ای	₩ #*#\$*\$\$\$\$\$#####\$\$\$#*\$}	ana angangaanna gababanana ay ayaangag	******		mpressar	station
Stream Classificat		[anani a sa a da a sa ang a sa ang a sa a a a a a a			******		
	Ephemeral	Intermitt	ent [Perennial				
(check one)	Stream	Ditch				ecting swale a	Other:	
онум	OHWW Indi	cator:			·····		Construct	
Width: 9	(check all that a	(ylqu	Clear lin on bank	• 🖾s	helving	∕∏ Wrested vegetati	Scou	ring Water
Height:	IT.					vegetati	on	staining
4	ft. Bent, i	natted, or g vegetation	Wrack		itter and ebris	Abrupt	plant	Soil characteristic
Width of Waterbod Top of Bank at Cen	V - Top of Flank to	Width of We	terbody - V	Vater Edga	to	commu	hity change	" change
		Water Edge	at Centerli	ne:	-	(Approx.)		
Sinuosity:	<u>15</u> ft.		2	ft.			/ 🌉 "	ft.
check one)	Vanor	er velocity: _{ox.)}		Bank he	ight		Bank slope	
La xread S	Straight	× .		R	ight: 2) fi.	Rig	ht: スカ
/ 🖂 M	Meandering	<u></u> fp:	5					degrees
~ · · ·		······································			Left: 2	f ft.	L.6	eft: 70
Qualitative Attri	ibutes							degrees
Nater Appearance:	"1	C			······	والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ		
Zen	No water	ar 🛄 Turbid	Sheer	Partonal	Surface	Algal	Other:	
			on sur		scum	mats	·····	
Substrate:	Bedrock 🛛 Gra	ivel 🛛 Sar	nd 🖉	Silt/clay		Organic	Other:	·····
6 of Substrate:		·،	1			lanar.	a ourer.	
Vidth of Riparian Z	<u> % 6(</u>	<u> </u>	%	30 %	6	%		%
	one: Vegetative (check all that i	Layers:	Trees:					
<u>_/U</u> ft.		of Dominants:		n.	ļ,	Shrubs:		Herbs
Dominant Bank Veg	(approx.)			<u> </u>			in.	-
10) / irichom	Son tulip.	Kera R.	an and	L.N	- 10			
	submerged or emerged aqui	atic vegetation, overhang	ing banks/roots	, leaf packs, larg	e submerged	wood, riffles, doep p	ools):	
Kitk 1F	9000, 1010 p	meles, oren	Inavia	ing Vel	e frat.	1000		
(ST) / /					((m) / /		*****	
SMALL								
SU IN	Species Observed:				***			
" Rish me	iltitiona							
ributary is:	Read	Constant of the second s						
heckone)		Artificial,	man-made	Mani	pulated			
isturbances: heck all that apply)		parata					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	Livestock access	Manure ii Waterbod]Waste dis	charge	X Other	Manta	und I know
tream Quality ^b :	[#202.02]			pipes			The second s	
	High	X Moderate) I	Low			51	

Waterbody ID: SWMHOLD Connecting swales are water features that do not meet the definition of a waterbody (not an ophemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting. ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes Waterbody Sketch Include north arrow, conterline, distance from conterline, photo locations, survey boundary, and unique IDs of associated features. y hoog goverhood Ht Swabold www.hose etistro Bridge I sum holl



Waterbody swmh010 facing upstream



Waterbody swmh010 facing downstream



Waterbody swmh010 facing upline cross stream

Waterbody Data Sheet

Survey Description	
Project Name:	Waterbody Name:
ITI Supply Hender	UNTTO HAYMAKERS Run SWMHOOG 11-14-14
State: County: PA Westmoreland	Company: Crew Member Initials: Photo ID(s): DDWEST JD, DB 3
Tract Number(s):	
Compressor STATION J.B. Tonkin	Wilepost Entry: Milepost Exit: Associated Wetland ID(s):
Survey Type: (check one)	Re-Route Access Road X Other:
Physical Attributes	COMPOSSOR STATION
Stream Classification: (check one)	Intermittent
Waterbody Type: (Check one)	Ditch Pond Lake Connecting swale * CONTRACT
OHWM OHWM India	calor:
Width:ft.	on bank
Height:ft	natted, or Wrack Litter and KAbrupt plant Soil characteristic
Top of Bank at Centerline: 20 ft.	With of Waterbody - Water Edge to Water Edge at Centerline:
Citating a Marine State	<u>3</u> ft. <u>2</u> ¹¹ ft.
(check one) (Appro	x.) Bank slope
Meandering	Right: 5 $Right: 5$ $Right: 30$ $Right: 400$ $Right: 400$
Qualitative Attributes	tdegrees
Water Appearance: (check one) No water X Clea	ar Turbid Sheen Surface Color
	indis
Substrate: X Bedrock X Grav (check all that apply)	vel 🔀 Sand 🕅 Silt/clay 🗌 Organic 🔲 Other:
% of Substrate: $10_{\%}$ 50	<u>% 10 % 30 %</u>
Width of Riparian Zone: Vegetative	
(approx.)	of Dominants:
Domigant Bank Vegetation: The CANYA STACTA, CONYA	ovata, Sulix nigra, Rosa multi tora, Rulius
Aquatic Habitats (ex: submerged or emerged aqua 1151) Riffle, pools, over har	1 Augustan and
Aquatic Organisms Observed:	
nvasive and/or T&E species Observed:	
ributary is: check one)	Artificial, man-made Manipulated
Disturbances: check all that apply)	Manure in Waste diaster W
tream Quality ^b :	Waterbody pipes W Other: Gegetretienze

Waterbody ID: SWMHOD9 * Connecting swales are water features that do not meet the definition of a waterbody (not an ephemeral waterbody) in that there is not a defined bed, bank, and ordinary high water mark, however, it is a water conveyance feature that is characterized by flow volume, frequency, and duration to make it more than just an erosional feature and connects two potential waters of the U.S. and thereby may be subject to Section 404 permitting. ^b High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes Waterbody Sketch Include north arrow, conterline, distance from centerline, photo locations, survey boundary, and unique IDs of associated features. ,004 5wnh009 * culvut - gunhoog 5~mh010 Swmholl



Waterbody swmh009 facing upstream



Waterbody swmh009 facing downstream



Waterbody swmh009 facing upline cross stream

DOMINION TRANSMISSION, INC.

SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX D –PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP) CLEAN FILL CERTIFICATION

2500-FM-BWM0008 Rev. 8/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM FP-001 - CERTIFICATION OF CLEAN FILL

Prior to completing this form and signing this certification, please review the entire Management of Fill policy (#258-2182-773), including the certification requirements. Please note that historic fill, as defined in the Management of Fill policy, may meet the definition of clean fill if the material is limited to uncontaminated soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such.

Instructions: Sections 1 and 2 of this form must be completed by the person making the determination of clean fill at the site of origin. Section 3 must be completed by the person using the material as clean fill. Both the person determining clean fill and the user of the clean fill are responsible for maintaining copies of this completed form on site for a period of five (5) years for Department inspection.

Section 1: Person Determining C	Clean Fill		
Name (Print):	Title:		Date:
Company Name:			
Street Address:	City:	State:	Zip Code:
Telephone Number:	E-mail Addres	SS:	
Clean Fill Material originated on t	he following property:		
Site Name:			
Street Address:	City:	State:	Zip Code:
Section 2: Site Characterization			
Check the following that applies:			
	or federal regulatory program ng with a copy of the entire s	that requires site cha	aracterization, provide the
Name of local, state, or federal age	ncy:		
Identification number assigned to th	e project:		
Name of the local, state, or federal	contact person:		
Telephone Number:			
Name of the Laboratory that conduc	cted the analysis:		
Laboratory Accredit	tation Number:		
other procedure identifi	to be used as clean fill has o ed in the definition of "env , provide or attach the follow	vironmental due dili	
Copies of ALL lab analytic Fill policy, #258-2182-773).	al testing performed as part of	environmental due dili	gence (see Management of
Name of the Laboratory that conduc	cted the analysis:		
Laboratory Accredit	tation Number:		

□ C .	IF the proposed material to be used as clean fill was subject to environmental due diligence
	procedures as defined in the Management of Fill policy other than those listed in A and B, describe
	those procedures.

I, the undersigned, certify under penalty of law (18 Pa. C.S.A. §4904) that the information provided in Sections 1 and 2 of this form is true and correct to the best of my knowledge, information and belief.

Signature:

Section 3: Person Receiving of	or Placing Clean Fill		
Name and address of person of	completing this form:		
Name (Print):		Date:	
Mailing Address:	City:	Sta	ate: Zip Code:
Telephone Number:	E	-mail Address:	
Fill material that has been de property improvement or cons		fill will be placed on t	he following property solely for
Property Address:	City:	State:	Zip Code:
Current Owner of Property:			_
Telephone Number:	E-n	nail Address:	
The quantity of clean fill to be	placed on the property	is:	
<pre><3,000 cubic yards</pre>	☐ 3,000 cubic yards	to 20,000 cubic yards	>20,000 cubic yards
I, the undersigned, certify und correct to the best of my know		e ,	information provided is true and
Signature:			

* * * * *

Prior to placement of the clean fill, the owner of the property receiving fill material shall provide a copy of this completed form and attachments to the DEP Regional Office serving the county in which the receiving site is located. If a property receives fill from multiple sources, a separate Form FP-001 is required for each source.

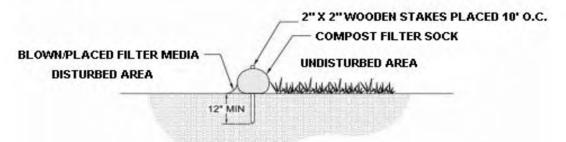
DOMINION TRANSMISSION, INC. SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX E – EROSION & SEDIMENT CONTROL DESIGN CALCULATIONS

STANDARD E&S WORKSHEET #1 Compost Filter Socks

PROJECT NAME: <u>Supply Header Project</u> LOCATION: Murrysville, PA		
PREPARED BY: Danielle Trefz	DATE:	3/23/17
CHECKED BY: Stephen Lindsay	DATE:	3/23/17



Barrier #	Design Diameter	Location	Slope %	Slope Length (
2.01	12 in	South side of SWMH001	7%	46
2.02	24 in or equivalent	North side of SWMH001	30%	100
2.03	12 in	Barland Farm Road Crossing	12%	85
2.04	12 in	Access Road 35-255-AR01	13%	80
2.05	12 in	Station 16+75	10%	78
2.06	12 in	Station 19+00 to 24+00	4%	238
2.07	12 in	Station 26+00	8%	150
2.08	12 in	East side of SWMH003	7%	191
2.09	24 in or equivalent	West side of SWMH003	23%	156
2.10	24 in or equivalent	Station 37+25 to 41+50	30%	100
2.11	12 in	Italy Road crossing	2%	250
2.12	12 in	Access Road 35-250-AR01	7%	150
3.01	18 in or equivalent	Station 57+00 to 59+00	19%	150
3.02	24 in or equivalent	Surrounding Wetland WWMH002E	30%	100
3.02	12 in	Station 64+00 to 68+00	18%	80
3.04	12 in	Access Road 35-245-AR01	2%	114
3.05	12 in	South side of SWMH005	6%	117
3.06	12 in	North side of SWMH005	3%	124
3.00	12 in	Kemerer Hollow Road crossing	12%	124
3.07	12 in	Station 78+25 to 81+00	8%	120
3.09	18 in or equivalent	Station 83+25 to 85+50	20%	150
3.10	18 in or equivalent	South Side of SWMH012	20%	150
3.11	18 in or equivalent	North side of SWMH012	20%	130
3.12	24 in or equivalent	Station 96+00	27%	110
3.13	18 in or equivalent	Station 97+00 to 100+00	15%	160
3.14	32 in or equivalent	Southeast side of SWMH013	46%	70
3.15	12 in	Northwest side of SWMH013	0%	180
3.16	18 in or equivalent	North side of Wetland WWMH007E	24%	143
3.17	18 in or equivalent	Station 109+00	17%	70
4.01	24 in or equivalent	Station 114+50 to 119+00	28%	100
4.02	18 in or equivalent	Southeast side of SWMH006	10%	230
4.03	12 in	Northwest side of SWMH006	10%	100
4.04	12 in	Southeast side of SWMH006	3%	316
4.05	18 in or equivalent	Northwest side of SWMH007	11%	150
4.06	12 in	Impoundment Area	5%	204
4.07	12 in	Station 140+00 to 144+00	3%	186
4.08	18 in or equivalent	Westertown Road Crossing	7%	268
4.09	12 in	Surrounding Wetland WWMH008E	3%	322
4.10	12 in	South side of SWMH014	8%	124
4.11	12 in	North side of SWMH014	3%	130
4.12	18 in or equivalent	Station 158+75 to 167+00	21%	126
4.13	12 in	Access Road 35-230-AR01	5%	230
5.01	18 in or equivalent	Station 167+00 to SWMH014	12%	164
5.02	18 in or equivalent	West side of SWMH014	11%	147
5.03	18 in or equivalent	Evans Road Crossing	10%	161
5.04	24 in or equivalent	Station 176+50 to 180+00	28%	101

5.05	18 in or equivalent	Station 181+00 to 187+00	20%	140
5.06	18 in or equivalent	Station 188+50 to 191+00	19%	115
5.07	18 in or equivalent	East side of SWMH015	20%	88
5.08	18 in or equivalent	West side of SWMH015	34%	70
5.09	12 in	Station 194+00 to 199+25	11%	122
5.10	12 in	Station 199+25	12%	115
5.11	18 in or equivalent	East side of SWMH001	12%	175
5.12	18 in or equivalent	West side of SWMH001	13%	150
6.01	18 in or equivalent	Access Road 35-257-AR01	9%	180
6.02	12 in	Access Road 35-255-AR02	7%	92
6.03	12 in	Access Road 35-255-AR02	7%	150
8.01	18 in or equivalent	Access Road 35-234-AR01	16%	124
T.01	32 in or equivalent	North of Haymakers Run	8%	400
T.02	18 in or equivalent	South of Haymakers Run	7%	275
T.03	18 in or equivalent	Surrounding a tributary north of Haymakers Run	7%	275
T.04	32 in or equivalent	North of Mamont Road	29%	112
T.05	32 in or equivalent	Surrounding a tributary to Haymakers Run North of Mamont Road	32%	100
L.01	32 in or equivalent	North edge of the site	19%	175

Notes:

1. Per a PaDEP document, when large diameter socks are needed to meet slope length requirements, socks may be stacked in pyramid fashion

to reach equivalent sock heights. This stacked configuration is included in the phrase "or equivalent" written above.

2. Three 12" socks = one 18" sock

3. Three 18" socks = one 24" sock

4. Three 24 socks = one 32" sock

DOMINION TRANSMISSION, INC. SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX F – PADEP VISUAL SITE INSPECTION REPORT FORM



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

VISUAL SITE INSPECTION REPORT

Note: It is a condition of National Pollutant Discharge Elimination System and Erosion and Sediment permits that a maintenance program be conducted to provide for the operation and maintenance of all BMPs to be inspected on a weekly basis and after each stormwater event. Please list in the space provided comments to note if repairs or replacement are needed or have been made for BMPs as a result of the inspection. Failure to conduct the required inspection may result in permit suspension or the imposition of civil penalties. If supplemental monitoring is required as part of a permit condition this form may be used to meet those monitoring requirements.

Pro	oject Site Name:		Date:	Inspection #:		
Tir	ne:	Weather:				
Pe	ermit #:		Photos Taken: Yes [] No 🗌		
Ins	spector/Title:					
Μι	unicipality(s):					
Co	punty(s):					
	Inspectior	ו Type (check one): V	Veekly 🗌 Stormwater	r Event 🗌	v	N
1.	Are the approved (Stamped) E	& S plan and PCSM p	lan present on site?		T	N
2.	Are there activities occurring ou (If yes, notify conservation distr		sturbance shown on the	e plan drawings?		
3.	Is Construction Sequence being (If No, notify conservation distri					
4.	E & S BMPs (List BMPs and no	Y N				

5.	 Site Conditions Sediment Discharge is occurring to waters or wetlands from earth disturbance activity? Stabilization of inactive disturbed areas, stockpiles, or at final grade? (exceeding 4 days inactive) Are slopes 3:1 and greater stabilized with appropriate BMPs? 	Y 	N
6.	PCSM BMPs Are areas intended for PCSM BMPs being protected from compaction? PCSM BMPs (List BMPs and note if installed and maintained as per the plan.) Y N N N N N N N N N N N N N N N N N N		
7. 8.	Department/Conservation District has been notified within 24 hours of non-compliance, including discharge to waters or wetlands? Identify all remedial measures that have been taken or will be taken on this site.		
	pector's Signature: Date:		

Attach additional sheets for comments/repairs/remedial measures if necessary.

DOMINION TRANSMISSION, INC. SUPPLY HEADER PROJECT

SECTION 4 – EROSION AND SEDIMENT CONTROL PLAN (ESCP)

APPENDIX G – TRAINING RECORD

Training Record Storm Water, Sediment, and Erosion Control Training

Project Name:	
Instructor's Name:	
Location:	
Date:	
Length:	
 Topics: Erosion Control BMPs Sediment Control BMPs Non-Storm Water BMPs Emergency Procedures Other (Specify): 	 Good Housekeeping BMPs SWPPP Provisions Conducting Inspections Turbidity Monitoring

Attendee Roster: (attach additional pages as necessary)

Name of Attendee	Company/Agency

DOMINION TRANSMISSION, INC.

SUPPLY HEADER PROJECT

SECTION 5 – POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN/SITE RESTORATION (PCSM/SR) PLAN

- Post-Construction Stormwater Management /Site Restoration Plan
- PCSM/SR Plan Drawings
- Stormwater Runoff Calculations
- Drainage Area Maps
- Infiltration Testing Results
- PCSM Inspection Form

DOMINION TRANSMISSION, INC.

SUPPLY HEADER PROJECT

SECTION 5 – POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN/SITE RESTORATION (PCSM/SR) PLAN

POST-CONSTRUCTION STORMWATER MANAGEMENT /SITE RESTORATION PLAN NARRATIVE

Site Restoration/Post-Construction Stormwater Management Plan

Dominion Transmission, Inc. Supply Header Project Murrysville and Salem Township, Westmoreland County, Pennsylvania

March 31, 2017

Submitted By: Dominion Transmission, Inc. 5000 Dominion Boulevard Glen Allen, VA 23060 (804) 335-4923

Prepared By: Environmental Resources Management, Inc. 15 Park Row West Suite 104 Providence, RI 02903 (401) 278-4308



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- E PCSM Inspection Form

LIST OF DEFINITIONS

ABACT	antidegredation best available combination of technologies
BMP	best management practice
CFR	Code of Federal Regulations
DTI	Dominion Transmission, Inc.
E&SCP	Erosion and Sediment Control Plan
EPA	U.S. Environmental Protection Agency
ERM	Environmental Resources Management, Inc.
ESCGP-2	Erosion and Sediment Control General Permit
FERC	Federal Energy Regulatory Commission
HQ-CWF	High Quality Watershed-Cold Water Fishes
LOD	limit of disturbance
MP	milepost
NRCS	Natural Resources Conservation Service
NOT	Notice of Termination
NRCS	Natural Resources Conservation Service
P.S.	Pennsylvania Statutes
Pa. Code	Pennsylvania Code
PADEP	Pennsylvania Department of Environmental Protection
PaGEODE	Pennsylvania Geologic Data Exploration web-mapping application
PFBC	Pennsylvania Fish and Boat Commission
Project	Supply Header Project
SCS	Soil Conservation Service
SR/PCSM Plan	Site Restoration/Post-Construction Stormwater Management Plan
SSURGO database	Soil Survey Geographic database
TL-636	TL-636 Pipeline Loop
TMDL	total maximum daily load
UNT	unnamed tributary
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

This Site Restoration/Post-Construction Stormwater Management Plan (SR/PCSM Plan) has been developed to maximize replication of the natural hydrologic cycle, protect the structural integrity of receiving waters, and to protect and maintain existing and designated uses of the Commonwealth waters. The Plan consists of this written narrative and the attached appendices including plan drawings and design calculations. It was developed to be in accordance with the requirements of Title 25 Pennsylvania Code (Pa. Code) Chapters 102, as well as the Clean Streams Law (Title 35 Pennsylvania Statutes [P.S.] Section 691.1001), as amended, utilizing guidelines and best management practices (BMP) information provided in the Pennsylvania Stormwater Best Management Practices Manual. This SR/PCSM Plan complements the Erosion and Sediment Control Plan (E&SCP) prepared for this Project and was planned and designed to be consistent with the E&SCP under Pa. Code § 102.4(b). An up-to-date copy of this SR/PCSM Plan (including this narrative and appendices) shall be maintained and available at the Project site during all stages of earth disturbance activity.

This SR/PCSM Plan was prepared by Environmental Resources Management, Inc. (ERM) personnel, under the direct supervision of a Pennsylvania licensed Professional Engineer trained and experienced in stormwater management design methods and techniques applicable to the size and scope of the proposed Project. The SR/PCSM Plan has been designed to minimize the threat to human health, safety and the environment to the greatest extent practicable. Staff involved in preparation of the SR/PCSM Plan have attended a Pennsylvania Department of Environmental Protection (PADEP)-sponsored oil and gas industry training class for erosion and sediment control and stormwater management for oil and gas activities.

1.0 PROJECT OVERVIEW

Dominion Transmission, Inc. (DTI) is proposing to construct and operate approximately 37.5 miles of pipeline loop and modify existing compression facilities in Pennsylvania and West Virginia, known as the Supply Header Project (Project). The Project will enable DTI to provide firm transportation service to various customers, including Atlantic Coast Pipeline, LLC, which is proposing to construct the Atlantic Coast Pipeline. DTI has hired ERM as the primary environmental consultant for the Project. ERM is assisting DTI with construction planning, environmental surveys, and acquisition of environmental permits necessary for the Project. The overall Project is being reviewed and authorized through the Federal Energy Regulatory Commission (FERC), Docket No. CP15-555-000.

The Pennsylvania segment of the Project includes 3.9 miles of 30-inch-diameter natural gas pipeline loop (TL-636) adjacent to DTI's existing LN-25 pipeline in Westmoreland County and modifications at DTI's existing JB Tonkin Compressor Station in Westmoreland County. The Project will utilize temporary contractor yards in Salem Township, Westmoreland County.

The typical construction right-of-way for the TL-636 loop will be 100 feet wide in nonagricultural upland areas and 125 feet wide in agricultural areas, where full width topsoil segregation will be implemented. In accordance with the FERC Wetland and Waterbody Construction and Mitigation Procedures (Procedures), the width of the construction right-of-way will be reduced to 75 feet in wetlands. In addition to the construction right-of-way, additional temporary workspace will be required to stage construction activities and store equipment, materials, and temporary side cast at wetland, waterbody, and road crossings. Following construction, a 50-foot-wide permanent easement will be maintained for operation of the pipeline. A 30-foot-wide permanent easement will be maintained for permanent access roads.

In Westmoreland County, modifications at the JB Tonkin Compressor Station will include the addition of one new gas-driven turbine which will provide 20,500 horsepower of additional compression. The modifications will include one new compressor building and additional auxiliary structures within the existing and new chain-link security fenced-in site. Equipment at the station will include gas filter/separators, gas coolers, inlet air filters, exhaust silencers, tanks, blowdown silencers, heaters, and auxiliary generators. Workspace outside the existing fence line will be required for construction activities such as welding, coating, and storing construction materials, as well as activities associated with the new pipeline interconnects. With the exception of valves and other aboveground facilities that will be installed at the pipeline interconnects, these areas will be restored to pre-construction conditions. The proposed improvements at the JB Tonkin Compressor Station will include conversion of currently vegetated surfaces to gravel and rooftop, resulting in the addition of 0.27 acre of impervious area.

In addition, DTI will install valves and pig launcher/receiver facilities at each end of the pipeline loop. The valves, which will allow DTI to segment the pipelines for safety, operations, and maintenance purposes, will be installed below grade with aboveground valve operators, risers, blowdown valves, and crossover piping connected on each side of the valve. The pig launchers/receivers will be used to run pipeline inspection tools, called pigs, through the pipeline system. The Project includes the addition of 18 permanent access roads with 7 new access roads and the use and modification of 9 existing access roads for the construction and operation of the Project. DTI anticipates that construction in Pennsylvania will be complete and placed in service by fall 2019.

The Project location is shown on the U.S. Geological Survey (USGS) Quad included in Section 3 of the Erosion and Sediment Control General Permit (ESCGP-2) permit application package. In addition, this SR/PCSM includes drawings that show the location and limit of construction activities described above in Appendix A. The proposed construction activities are expected to disturb approximately 75.49 acres within the 82.49-acre construction site. All construction activities will occur within the limit of disturbance (LOD) delineated on the Project plans.

2.0 EXISTING CONDITIONS

The E&SCP drawings included in the Appendix A of the E&SCP and the SR/PCSM drawings in Appendix A of this plan depict the relevant existing site features. The existing features include the topography of the Project site and the surrounding area, mapped soil boundaries, municipal and county boundaries, known property, easement and right-of-way boundaries, roadways, streams, watercourses, existing structures, existing ground cover (including tree lines and other significant vegetative features), utilities, and other identifiable underground utilities.

2.1 SOIL CHARACTERISTICS

The location of mapped soil types are shown on the SR/PCSM Plan drawings. These soil boundaries and associated information were obtained from the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database. In addition to this soil mapping data, the USDA, Natural Resources Conservation Service (NRCS) "Web Soil Survey" website (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) was used to generate an "NRCS Custom Soils Resources Report" for this Project.

The NRCS Custom Soils Resources Report is included in Appendix B of the E&SCP and contains the types, depth, slope, and limitations of the soils within the Project area. Additional information in the soil report includes data on the physical characteristics of the soils, such as their texture, resistance to erosion and suitability for the intended use. The limitation of soils pertaining to earthmoving projects, and the means to address the identified soils limitations are included on the plan drawings.

2.2 EXISTING LAND USE AND LAND COVER

The proposed Project is located on private land and the current land use is oil- and gas-related industrial activity. Prior to the existing industrial development, the land use was rural residential. The existing land cover within the permit boundary for aboveground facilities is a mixture of impervious roof and asphalt, gravel surface, and meadow. The existing land use at the compressor station includes pastureland, upland forest, and developed area. The existing land wetlands. The land disturbed during construction of the pipeline will be restored to meadow or similar land use resulting in an equivalent or better hydrologic condition and will not result in the addition of impervious area. The pipeline will be installed within existing rights-of-way. The modifications at the existing compressor station will result in approximately 0.27 acre of additional impervious area.

2.3 RECEIVING WATERS

ERM conducted a wetland and waterbody delineation of the proposed Project area. The onsite wetland delineation was conducted using procedures described in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the 2012 Regional Supplement to the U.S. Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. Other waters were assessed using the definitions in Title 33 Code of Federal Regulations (CFR) Part 328.3. Impact assessments to potential waters of the United States, including wetlands, were evaluated within the proposed Project construction work area. Fourteen waterbodies and 11 wetlands are crossed by the JB Tonkin Compressor Station and TL-636 project activities. Some wetlands and waterbodies are crossed more than once for a total of 18 waterbody crossings and 14 wetland crossings. Wetlands and waterbodies crossed by the project are included in Section 2 of the ESCGP-2 application and identified on the drawings in Appendix A. There are nine U.S. Environmental Protection Agency (EPA) Section 303(d) impaired streams within the Project area: unnamed tributary (UNT) to Turtle Creek (milepost (MP) 0.2); UNT to Turtle Creek (MP 0.6); UNT to Kemerer Hollow (MP 1.2); Kemerer Hollow (MP 1.3); UNT to Kemerer Hollow

(MP 1.7); UNT to Kemerer Hollow (MP 1.9); UNT to Steels Run (MP 2.5); Steels Run (MP 2.6); and UNT to Steels Run (MP 2.9). The impairment cause for all of these streams is listed as aquatic life.

The JB Tonkin Compressor Station and the TL-636 Pipeline are located within the Haymakers Run-Turtle Creek watershed. The Project will cross Steels Run and associated unnamed tributaries, Haymakers Run and associated unnamed tributaries, Kemerer Hollow and associated unnamed tributaries, and unnamed tributaries to Turtle Creek. The waterbodies crossed by the Project are not listed as Pennsylvania Fish and Boat Commission (PFBC) "Approved Trout Waters" or "Wild Trout Waters". Turtle Creek is listed as a PFBC "Trout Stocked Fisheries".

Steels Run and its associated tributaries have a Pa. Code, Title 25, Chapter 93 designated protected use of High-Quality Cold Water Fishes (HQ-CWF) and are special protection waters. According to the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, the receiving waters for this Project are listed as siltation impaired in Category 5. Steels Run was listed in 2006 and has a total maximum daily load (TMDL) date of 2019.

Haymakers Run and its associated tributaries have a Pa. Code, Title 25, Chapter 93 designated protected use of HQ-CWF and are special protection waters. According to the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, the receiving waters for this Project are not listed as siltation impaired in Category 4 or Category 5.

Kemerer Hollow and its associated tributaries have a Pa. Code, Title 25, Chapter 93 designated protected use of HQ-CWF and are special protection waters. According to the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, the receiving waters for this Project are not listed as siltation impaired in Category 4 or Category 5.

Turtle Creek and its tributaries do not have a Pa. Code, Title 25, Chapter 93 designated protected use and are not special protection waters. According to the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, the receiving waters for this Project are listed as siltation impaired in Category 4a and Category 5. Turtle Creek was listed as a Category 4a in 2004 with a TMDL date of 2013. Turtle Creek was listed as a Category 5 in 2006 with a TMDL date of 2019.

2.4 EXISTING WATER RESOURCES / RIPARIAN BUFFERS

Riparian buffers are an area of permanent vegetation situated along any surface water(s). When this vegetation is predominantly native trees, shrubs, and forbs that are maintained in a natural state or sustainably managed to protect and enhance water quality, it is considered a riparian forest buffer.

Construction of TL-636 is anticipated to include 18 separate waterbody crossings of Turtle Creek, Kemerer Hollow, Steels Run, and Haymakers Run, and their unnamed tributaries, in Westmoreland County with a total area of 0.52 acres of temporary waterbody impacts. Impacts to approximately 0.31 acre of floodways are anticipated from temporary construction and permanent development classified as high quality-cold water fisheries streams. Areas that will

involve removal of trees from riparian buffers will be revegetated in accordance with DTI's postconstruction management practices such that the proposed installation of TL-636 will have minimal impacts to existing riparian buffers and minimal thermal impact to streams within the action area. Riparian buffer locations are included in the PCSM/SR drawings for the JB Tonkin Compressor Station, Appendix A. As outlined in Section 5.2.3, the Project is applying for a riparian waiver/exemption per Pa. Code §102.14(d) and does not include the riparian buffer on the alignment sheets for linear features.

Construction of the TL-636 pipeline will result in temporary and permanent impacts to wetlands. A list of wetland crossings is included in Section 2 of the ESCGP-2 application. Permitting under sections 401 and 404 of the Clean Water Act is ongoing through the PADEP and COE for wetland crossings. Mitigation measures for permanent impacts on wetlands will be coordinated with PADEP and the COE. Impacts to palustrine forest (PFO) wetlands have been minimized to the extent possible. Following construction, areas outside of the permanent 50-foot right of way will be allowed to revegetate to natural conditions, including tree canopy closure. A 30-foot right of way will be maintained for access roads.

Existing access roads are used, where possible, along the existing and proposed right-of-way, which minimizes further vegetative removal. Where new access roads are constructed in proximity to streams or wetlands, vegetation removal will be minimized and roads will be designed to avoid removal of riparian buffer areas where possible. Access roads have been designed to cross perpendicular to streams.

Construction at the JB Tonkin Compressor Station in Westmoreland County is anticipated to result in impacts to Haymakers Run, unnamed tributaries to Haymakers Run, along with an associated wetland and floodway. A palustrine emergent wetland of approximately 0.02 acre will be permanently impacted from installation of new equipment at the JB Tonkin Compressor Station. Vegetation within the action area portion of the Haymakers Run floodway consists primarily of maintained grasses and shrubs, with a few trees; therefore, impacts to vegetation within the floodway of Haymakers Run will not significantly alter existing riparian buffers or increase thermal impacts

2.5 NATURALLY OCCURING GEOLOGIC FORMATIONS

2.5.1 JB Tonkin Compressor Station

General Geology

The bedrock unit beneath the JB Tonkin Compressor Station is comprised of the Glenshaw Formation of the Conemaugh Group. The Glenshaw Formation is comprised of repeated sequences of sandstone, siltstone, shale, claystone, limestone, and coal. The claystone layers of the Glenshaw Formation include red bed clays. The Glenshaw Formation generally thickens in a northeasterly direction, ranging from 280 feet to 410 feet.

Regionally, the water table varies based on topographic setting and water-bearing zone head. The water levels in valleys and upland are shallow and become deeper with increasing elevation to hilltops. The depth to water varies with rock type, physiography, and precipitation. The median well depth in the Glenshaw Formation is 118.0 feet below ground surface. The minimum casing length of these wells is 5.60 feet. The median static water level for the wells within the Glenshaw Formation is 45.0 feet. The median specific capacity for wells in this formation is 2.50 feet and the minimum specific capacity is 0.07 feet. The median water yield for wells in the Glenshaw formation is 10.0 gallons per second.

A geotechnical study was run for the JB Tonkin Compressor Station in 2016 by a third party consultant for DTI. This study conducted six test borings totaling 162.6 linear feet (82.8 feet of soil and 79.8 feet of bedrock) in July 2016. The test borings were performed using a track-mounted drill rig equipped with an automatic hammer and represent the subsurface conditions at the location of the test borings only. A summary of test boring is included as Table 2.5-1 and infiltration test results and mapping are included as Appendix D.

Test Boring	Approximate Existing Ground Elevation (ft)	Total Depth (ft)		
BH-1	1,096	20.5		
BH-2	1,058	19.5		
BH-3	1,051	35.7		
BH-4	1,052	26.5		
BH-5	1,042	31.6		
BH-6	1,040	28.8		
Totals:		162.6		
Note: Ground surface elevation was based on existing topography				
Source: Geotechnical Report JB Tonkin Compressor Station, CEC Inc., July 2016				

Table 2.5-1: Test Boring Summary

Surficial Geology

According to the Murrysville, Pennsylvania USGS 7.5 Minute Quadrangle Map, the JB Tonkin Compressor Station is approximately 1,030 to 1,160 feet above mean sea level near the township of Murrysville. The topography consists of very hilly with narrow hilltops and steep-sloped narrow valleys that have been modified by fluvial erosion and periglacial mass wasting.

A complete soil report for the Project is available in Appendix B of the E&SCP.

Landslide Susceptibility

The USGS Preliminary Landslide Overview Map of the Conterminous United States, 2014, indicates the proposed area is in an area of high landslide incidence. This hazard can be further mitigated implementing proper sloping and drainage controls. DTI is implementing a comprehensive Geohazards Analysis Program to assess potential geohazards, including slope failures, along the proposed pipeline route and at aboveground facility sites.

Earthquake Probability

Westmoreland County, Pennsylvania has a very low earthquake risk. According to the Pennsylvania Geologic Data Exploration web-mapping application (PaGEODE) online services, the nearest earthquake to the JB Tonkin Compressor Station occurred in 1965, at magnitude 3.3. The largest known earthquake to occur in Pennsylvania, the Pymatuning Earthquake, had an epicenter in Jamestown, approximately 80 miles northwest of the JB Tonkin Compressor Station. The Pymatuning Earthquake had a magnitude of 5.2, causing light property damage.

The USGS maintains a database containing information on surface and subsurface faults and folds in the United States that are believed to be sources of earthquakes of greater than 6.0 magnitude during the past 1.6 million years. The proposed Project pipeline route and associated aboveground facilities will not cross any of the surface or subsurface faults identified in the USGS database.

Potential Geologic Hazards

According to the available coal resource information, there has been no underground mining at the proposed site area, however, mined areas are located near the site, with the closest active mine over two miles to the south. Two abandoned mines are also located approximately two miles south of the site, along with two inactive mines and one reclaimed mine. Although there has not been any mining at the site-specific location, the proposed compressor station is close to areas of bedrock with potentially acid-producing sulfide minerals. Coal beds in the Glenshaw Formation are sporadically mined, and include Harlem, Bakerstown, Wilgus, Brush Creek, Mahoning, and Upper Freeport coal seams. Active or historic underground operations may exist in the area, and as such, acidic drainage could be a potential hazard. Acidic drainage will adversely affect ecological receptors in any stream receiving such discharges from the site.

The primary mitigation of this potential geologic hazard will be avoidance. The maximum depth of excavation for the proposed Project is 12 feet below existing grade, with the majority of the proposed earth moving activities occurring at much shallower depths. At these relatively shallow depths, it is possible that the proposed construction activities will encounter the noted bedrock with potentially significant acid-producing sulfide minerals. Nonetheless, if the coal layers or rocks with acid producing minerals are encountered during construction activities, it will be a small amount.

There are no karst features within the area of the JB Tonkin Compressor Station and TL-636 Pipeline.

In the event that bedrock with potentially significant acid-producing sulfide minerals is encountered during excavation for the proposed facilities, the following mitigation measures are to be followed:

• Material with the potential to provide significant acid-producing sulfide minerals encountered during construction is not to be used as fill material on-site. This material shall be exported off-site and disposed of in the proper manner.

• Material with the potential to provide significant acid-producing sulfide minerals exposed during construction is to be addressed through site-specific analysis and design of appropriate mitigation measures. Possible mitigation measures for small quantities could be blending the materials with acid-neutralizing materials, such as limestone; covering the material with soil or glacial till and layering with lime or limestone.

2.5.2 TL-636 Pipeline

General Geology

The bedrock unit beneath the northern approximately 2.5 mile section of the TL-636 pipeline is comprised of the Glenshaw and Casselman Formations of the Conemaugh Group. The Glenshaw Formation is comprised of repeated sequences of sandstone, siltstone, shale, claystone, limestone, and coal. The claystone layers of the Glenshaw Formation include red bed clays. The Casselman Formation is characterized by locally persistent red beds, calcareous claystones, freshwater limestones, thin sandstones, shales, siltstones, and thin, economically insignificant, coal beds. The Glenshaw Formation generally thickens in a northeasterly direction, ranging from 280 to 410 feet. The Casselman Formation thickens in a southeasterly direction, ranging from 230 to 575 feet. The bedrock unit beneath the southern approximately 1.4 mile section of the TL-636 pipeline is the Pittsburgh Low Plateau Section. The Pittsburgh Low Plateau Section is comprised of smooth to irregular, undulating surfaces, with narrow, shallow valleys with interspersed strip mines and reclaimed lands. Specifically, the station is located within the Monongahela Group of the Pittsburgh Low Plateau Section, which consists of cyclic sequences of limestone, shale, sandstone, and coal. The Monongahela Group ranges in thickness from about 275 to 410 feet.

Regionally, the water table varies based on topographic setting and water-bearing zone head. The water levels in valleys and upland are shallow and become deeper with increasing elevation to hilltops. The depth to water varies with rock type, physiography, and precipitation. The 3.9-mile stretch of pipeline associated with the TL-635 pipeline is situated across 3 different geologic formations: Glenshaw, Casselman, and Monongahela.

The median well depth in the Glenshaw Formation is 118.0 feet below ground surface. The minimum casing length of these wells is 5.60 feet. The median static water level for the wells within the Glenshaw Formation is 45.0 feet. The median specific capacity for wells in this formation is 2.50 feet and the minimum specific capacity is 0.07 feet. The median water yield for wells in the Glenshaw formation is 10.0 gallons per second.

The median well depth in the Casselman Formation is 135.0 feet below ground surface. The minimum casing length of these wells is 9.0 feet. The median static water level for the wells within the Casselman Formation is 40.0 feet. The median and minimum specific capacity for wells in this formation is 0.00 feet. The median water yield for wells in the Casselman Formation is 10.0 gallons per second.

The median well depth in the Monogahela Formation is 126.0 feet below ground surface. The minimum casing length of these wells is 9.0 feet. The median static water level for the wells

within the Monogahela Formation is 35.0 feet. The median and minimum specific capacity for wells in this formation is also 0.00 feet. The median water yield for wells in the Monongahela Formation is 5.0 gallons per second.

Surficial Geology

According to the Murrysville and Slickville Pennsylvania USGS 7.5 Minute Quadrangle maps, the TL-636 pipeline is proposed along elevations of approximately 1,020 to 1,280 feet above mean sea level near the township of Murrysville. The topography consists of very hilly with narrow hilltops and steep-sloped narrow valleys that have been modified by fluvial erosion and periglacial mass wasting. Detailed NRCS soil reports are included in Appendix B.

Earthquake Probability

Westmoreland County has a very low earthquake risk. According to the PaGEODE online services, the nearest earthquake to the TL-636 pipeline occurred in 1965, at magnitude 3.3. The largest known earthquake to occur in Pennsylvania, the Pymatuning Earthquake, had an epicenter in Jamestown, approximately 80 miles northwest of the JB Tonkin Compressor Station. The Pymatuning Earthquake had a magnitude of 5.2, causing light property damage.

The USGS maintains a database containing information on surface and subsurface faults and folds in the United States that are believed to be sources of earthquakes of greater than 6.0 magnitude during the past 1.6 million years. The proposed TL-636 pipeline route and associated aboveground facilities would not cross any of the surface or subsurface faults identified in the USGS database.

Potential Geologic Hazards

According to the available coal resource information, there has been no underground mining at the proposed site area, however, there are two active, two inactive, two abandoned, and two reclaimed mine sites within approximately two miles of the proposed pipeline, located primarily northeast and southwest of the southern portion of the pipeline. The Delmont Mine is an abandoned mine located between MP 0.0 and 0.3 of the proposed pipeline. The proposed pipeline is close to areas of bedrock with potentially acid-producing sulfide minerals. The Pittsburgh Coal, which marks the base of the Monongahela Group, can range in depth from surface to 2,000 feet below ground surface. Coal beds in the Glenshaw Formation are sporadically mined, and include Harlem, Bakerstown, Wilgus, Brush Creek, Mahoning, and Upper Freeport coal seams. Coal seams in the Casselman Formation are not typically considered economically viable. Active or historic underground operations may exist in the area, and as such, acidic drainage could be a potential hazard. Acidic drainage would adversely affect ecological receptors in any stream receiving such discharges from the site.

The primary mitigation of this potential geologic hazard will be avoidance. The maximum depth of excavation for the proposed Project is 12 feet below existing grade, with the majority of the proposed earth moving activities occurring at much shallower depths. At these relatively shallow depths, it is possible that the proposed construction activities will encounter the noted bedrock with potentially significant acid-producing sulfide minerals. Nonetheless, if the coal

layers or rocks with acid producing minerals are encountered during construction activities, it would be a small amount.

In the event that bedrock with potentially significant acid-producing sulfide minerals is encountered during excavation for the proposed facility, the following mitigation measures are to be followed:

- Material with the potential to provide significant acid-producing sulfide minerals encountered during pad construction is not to be used as fill material on-site. This material shall be exported off-site and disposed of in the proper manner.
- Material with the potential to provide significant acid-producing sulfide minerals exposed during pad construction is to be addressed through site-specific analysis and design of appropriate mitigation measures. Possible mitigation measures for small quantities could be blending the materials with acid-neutralizing materials, such as limestone; covering the material with soil or glacial till and layering with lime or limestone.

There are five known oil and gas wells within 0.25 miles of the T-636 pipeline, four of which are active. The closest well is 475.8 feet west of MP 3.8, and is an active CNX Gas Co., LLC well.

3.0 **PROPOSED CONDITIONS**

The proposed land use is utility right-of-way, access roads, storage, compressor station and related equipment to be used for compression, and measurement and regulation. Earth disturbance will be restricted to the LOD delineated on the E&SCP drawings and SR/PCSM drawings. The total proposed area of disturbance resulting from installation of the proposed facilities is approximately 75.49 acres. This includes the proposed topography, areas of cuts and fills, the limits of earth disturbance, the locations of proposed access roads, the location of existing and proposed structures and the location of proposed BMPs.

3.1 PROPOSED LAND USE AND LAND COVER

The proposed land cover will change throughout the duration of the proposed Project. During the initial construction stage of the Project, much of the area will be bare earth. Once the facilities are constructed the site will be stabilized with vegetative cover, gravel cover, pavement and equipment as indicated on the SR/PCSM drawings. Upon completion of construction, the temporary workspace facilities will be restored to meadow or similar land use resulting in an equivalent or better hydrologic condition and will not result in the addition of impervious area.. Previously forested areas within the proposed 30-foot right of way will be maintained as meadow.

The approximate construction area at the JB Tonkin Compressor Station is 13.97 acres, consisting s of pasturelands, upland forests, and developed lands.. The proposed improvements at the JB Tonkin Compressor Station will include conversion of currently vegetated surfaces to gravel and rooftop, resulting in the addition of 0.27 acres of impervious area. Approximately 0.02 acre of a palustrine emergent (PEM) wetland will be filled within the JB Tonkin Compressor Station site.

Construction of the 3.9-mile pipeline and associated additional temporary workspace associated with the ROW will result in 61.52 acres of earth disturbance, consisting of agricultural land (cultivated crop), agricultural land (pastureland), agricultural land (harvested forest/tree plantation), upland forest, developed land, wetlands.. The land disturbed during construction of the pipeline will be restored to meadow or similar land use resulting in an equivalent or better hydrologic condition and will not result in the addition of impervious area. The land disturbed during pipeline construction will be restored to meadow or better conditions following finalization of construction.

Construction of the contractor yards in Salem Township include 7.0 acres of previously disturbed land. The contractor yards will be used during pipeline construction. The contractor yards have previously been developed and only minor improvements (e.g. replenishing the gravel surface) are anticipated, thus no new disturbance will occur at these areas.

3.2 PROPOSED SITE DRAINAGE CHARACTERISTICS

An assessment of the Project site's natural features was completed at the initial stage of Project planning. The proposed facilities have been sited to protect sensitive natural resources by avoiding these areas whenever possible. The site has also been planned and designed to maintain pre-development drainage patterns to the maximum extent practicable. A conscious effort has been made to maintain existing vegetation where possible and limit the extents of earth disturbance to the area necessary to construct the proposed facilities. Where possible, site drainage will be directed to previously established drainage features. The location of the proposed drainage features is shown on the SR/PCSM Plan drawings in Appendix A.

3.3 **RIPARIAN BUFFER**

Under Pa. Code, §102.14(d) this Project qualifies for an exemption/ waiver for riparian forest buffers. The Project has taken into account existing riparian buffers within the Project area and has designed construction measures to minimize disturbance to the existing riparian buffers to the extent practicable.

4.0 DESCRIPTION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES

The erosion and sediment control BMPs for the Project have been planned to minimize the extent and duration of the proposed earth disturbance, maximize protection of existing features, minimize soil compaction, and employ measures and controls that minimize the generation of increased runoff. Specific BMPs have been selected for this site in order to achieve these broad goals. The location of each proposed BMP is shown on the E&SCP drawings in Appendix A of the E&SCP and are discussed further in the E&SCP in section 4.0 of this application.

5.0 DESCRIPTION OF STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES

The stormwater management BMPs for this Project have been planned to minimize the extent of the proposed earth disturbance, maximize protection of existing drainage features and vegetation, minimize soil compaction, and employ measures and controls that minimize the generation of increased stormwater runoff. Specific BMPs have been selected for this site in order to achieve these broad goals. The location of each proposed stormwater management BMP is shown on the SR/PCSM Plan drawings in Appendix A. Each planned stormwater management BMP is specified for implementation to address a specific aspect of the proposed development. The various BMPs were chosen based on their effectiveness for the planned use and the feasibility of implementation at the Project site.

Stormwater management site planning techniques were used throughout the site design process to preserve natural systems and hydrologic functions to the maximum extent possible with nonstructural BMPs. These self-crediting BMPs (i.e., BMPs that minimize or avoid increases in runoff volume or peak discharge) were utilized to the extent possible to prevent stormwater generation and reduce the overall impact of the proposed facilities on stormwater runoff. Non-structural BMPs used on the site are discussed in detail in Section 5.1.

Stormwater conveyance along the access roads will be managed by aggregate-stabilized channels. The channels will convey runoff to culverts with outlets stabilized with riprap aprons. Infiltration testing at the compressor station site indicated that infiltration is not possible at this site (see Appendix D).

5.1 NON-STRUCTURAL BEST MANAGEMENT PRACTICES

Stormwater management site planning techniques were used throughout the site design process to preserve natural systems and hydrologic functions to the maximum extent possible with nonstructural BMPs. These self-crediting BMPs were utilized to the extent possible to prevent stormwater generation and reduce the overall impact of the proposed facilities on stormwater runoff. Stormwater runoff calculations are included in Appendix B. Non-structural BMPs are also employed to minimize impacts on water quality, specifically in controlling nitrate. The proposed non-structural stormwater BMPs are described in the following sections.

5.1.1 Protect Sensitive/Special Value Features

To minimize the stormwater impacts of the proposed site features and facilities, the site design was planned to avoid encroachment upon, disturbance of, and alteration to natural features that provide valuable stormwater functions or are very sensitive to stormwater impacts. The site planning process involved early identification of floodplains, wetlands, natural flow pathways/drainage ways, steep slopes, and historic and natural resources and avoidance of these features to the maximum extent possible. The stormwater functions of this BMP include very high volume reduction, recharge, peak rate control, and water quality.

5.1.2 Protect/Utilize Natural Flow Pathways

The site's natural drainage features were identified early in the design process so these valuable features could be protected and utilized as part of the overall stormwater management system. Existing drainage areas and natural flow paths were identified, preserved, and incorporated into the site design to the extent possible. The entire alignment will be restored to existing contours where possible to maintain the existing natural flow paths. In addition, existing drainage ditches along existing access roads and ditches on the JB Tonkin Compressor Station site will be enhanced and utilized as part of the PCSM plan. This design technique helps to reduce the impact of the proposed facilities by maintaining the established hydrologic patterns of the site. The stormwater functions of this BMP include low to medium volume reduction, low recharge, and medium to high peak rate control, and medium water quality.

5.1.3 Minimize Total Disturbed Area

Minimizing the total disturbed area to the area necessary to construct the proposed facilities is a simple and effective BMP. The LOD delineated on the plan drawings has been established to restrict construction activities to the minimum area needed to effectively and efficiently construct the proposed facilities and maximize conservation of existing site vegetation. The stormwater functions of this BMP include high volume reduction, recharge, peak rate control, and water quality. The construction activities at the JB Tonkin Compressor Station and contractor yards in Salem Township, Pennsylvania will predominantly be located within already developed areas.

5.1.4 Revegetate Disturbed Areas

Vegetative stabilization of disturbed areas is a central component of the SR/PCSM Plan. The seed mixtures specified for the site were selected to mimic natural meadows and provide sufficient stabilization while not requiring significant chemical maintenance by fertilizers, herbicides, and pesticides. In addition to restoring the alignment to meadow condition, this plan proposes the establishment of a 25 foot vegetated stream buffer on an existing developed site. The stormwater functions of this BMP include low to medium volume reduction, recharge and peak rate control and medium very high water quality.

5.1.5 Disconnect Impervious Area

Where feasible, runoff from impervious surfaces is directed to rain cisterns, where possible. This practice reduces runoff volume and peak discharge, as well as improves water quality by slowing runoff, allowing for filtration, and providing opportunity for infiltration and evapotranspiration as the water is used for irrigation. The stormwater functions of this BMP include high volume reduction, recharge, peak rate control, and water quality.

5.2 STRUCTURAL BEST MANAGEMENT PRACTICES

Stormwater management site planning techniques were used throughout the site design process to preserve natural systems and hydrologic functions to the maximum extent possible with structural BMPs. These BMPs were utilized to the extent possible to minimize stormwater

generation and minimize the overall impact of the proposed facilities on stormwater runoff. Structural BMPs are also employed to treat some currently untreated stormwater runoff at existing facilities without an existing stormwater management system. The proposed structural stormwater BMPs are described in the following sections. Construction details and placement locations of each BMP are included in the SR/PCSM drawings in Appendix A.

5.2.1 Vegetated Swale

A Vegetated Swale is a broad, shallow channel densely planted with a variety of grasses. It is designed to attenuate runoff volume from adjacent impervious surfaces, allowing some pollutants to settle out in the process. In steeper slope situations, check dams are used to further enhance attenuation and infiltration opportunities. Vegetated Swales will be utilized at the JB Tonkin Compressor Station and some proposed access roads along the pipeline alignment. Calculations for vegetated swales are included in Appendix B.

5.2.2 Rooftop Runoff – Capture and Reuse

Capture and Reuse encompasses the use of storage devices to capture a portion of the small, frequent storm events, hold it for a period of time, and reuse the water. Heavy rainfall may require slow release over time. Capture and reuse will be utilized at JB Tonkin Compressor Station. Calculations for capture and reuse are included in Appendix B.

5.2.3 Filter Strip

Filter strips are gently sloping, densely vegetated areas that filter, slow, and infiltrate sheet flowing stormwater. Filter Strips are primarily designed to reduced TSS levels, however pollutant levels of hydrocarbons, heavy metals, and nutrients may also be reduced. Pollutant removal mechanisms include sedimentation, filtration, absorption, infiltration, biological uptake, and microbial activity. Depending on hydrologic soil group, vegetative cover type, slope, and length, a filter strip can allow for a modest reduction in runoff volume through infiltration.

6.0 BEST MANAGEMENT PRACTICE INSTALLATION SEQUENCE

The following is a general narrative description of the planned sequence of BMP installation and removal. The entire construction sequence listing the steps to be taken from initial site clearing through final stabilization is included on the SR/PCSM Plan drawings. Refer to the SR/PCSM Plan drawings for additional site-specific installation information.

Upon completion of the earth disturbance as described in the E&SCP, all other temporary erosion and sediment control BMPs necessary for implementation of the SR/PCSM Plan shall remain functional through execution of the plan. In no cases, except when replaced by another BMP approved by the PADEP or conservation district, shall any erosion and sediment control BMPs be removed prior to all areas tributary to them achieving permanent stabilization. After final stabilization has been achieved, temporary erosion and sediment control BMPs may be removed if they are not necessary for implementation of the SR/PCSM Plan.

Areas disturbed during removal or conversion of any temporary erosion and sediment control BMPs to SR/PCSM BMPs must be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal\conversions should be done only during the germinating season. When final stabilization has been achieved after implementation of the SR/PCSM Plan, the remaining temporary erosion and sediment BMPs may be removed. Areas disturbed during removal of the temporary erosion and sediment control BMPs must be stabilized immediately.

7.0 STORMWATER RUNOFF ANALYSIS

The following section presents calculations associated with control of peak stormwater discharge rates and management of runoff volume. These calculations pertain to the JB Tonkin Compressor Station launcher facilities, and access roads as shown in the SR/PCSM Plan drawings. The proposed pipeline right-of-way will be restored to the approximate original contour and land cover, therefore no stormwater management calculations have been completed for this portion of the Project.

The stormwater analysis performed for this Project was completed in a manner to be consistent with the design standards contained in the Pennsylvania Stormwater BMP Manual (2006). The following is a general description of the methods used to complete the stormwater analysis and a summary of the results. Detailed runoff calculations are included in Appendix B with: runoff volume and HydroCAD printouts.

7.1 HYDROLOGIC ANALYSIS METHODS

The precipitation data used for the hydrologic analysis was obtained from the Point Precipitation Frequency Estimates from National Oceanic and Atmospheric Administration (NOAA) Atlas 14. The data was obtained for a geographic coordinate near the proposed Project. A rainfall depth of 2.39 inches was used for this analysis. This is the value for the 90 percent confidence interval of the 2-year, 24-hour duration storm obtained from NOAA Atlas 14. The Soil Conservation Service (SCS) 24-hour duration distribution was used to interpolate incremental precipitation values for the computation time interval and time period specified.

Time	1 year	2 year	5 year	10 year	25 year	50 year	100 year
24 hr	2.01	2.38	2.92	3.35	3.95	4.44	4.96

Hydrology calculations were performed to determine existing conditions and analyze the impacts of the proposed facilities.

"HydroCAD Stormwater Modeling System, Version 8, developed by HydroCAD Software Solutions LLC, was used to model the existing and proposed hydrology in order to calculate peak runoff flows. This software computes SCS runoff hydrographs by convoluting a rainfall hydrograph through a unit hydrograph. This method is also used in SCS TR-20.

Time of concentration values were calculated using the velocity method, also referred to as the segmental method, as described in the National Engineering Handbook and HyrdoCAD. When

channel routing was deemed necessary, hydrographs were routed through proposed channels using the Modified Att-Kin routing method as described in TR-20.

7.2 SITE CONDITIONS

Stormwater runoff calculations were not completed for the length of the TL-636 Pipeline ROW since it will be restored to existing or meadow conditions resulting in hydrologic conditions equivalent to or better than pre-development conditions. The site currently contains buildings and equipment related to the existing compressor station. The surfaces consist of asphalt pavement, grass, and gravel. The compressor station upgrade will result in the addition of impervious surface in the form of a new compressor building, auxiliary building, and gravel. While most of the site is not technically defined as an impervious surface, the areas that will be graveled will generate increased runoff. The proposed upgrade will not increase the current site boundaries, but it will convert areas of grass into asphalt and gravel along with the construction of a new compressor building.

The JB Tonkin Compressor Station and the TL-636 Pipeline are located in the Haymakers Run-Turtle Creek Watershed. The Turtle Creek watershed drains an area of approximately 148 square miles that includes forest, farmland, industry, abandoned mined lands, and urban and suburban residential communities. Turtle Creek flows west and enters the Monongahela River. Steels Run, Haymakers Run, and Turtle Creek (upper, middle, lower) are subwatersheds within the Turtle Creek Watershed that are potentially impacted by the proposed Project. Coal mining in the general area has contributed to major pollutant loads to several streams in the Turtle Creek Watershed.

The Haymakers Run drainage areas consist of forest, meadow, cultivated land, and a few residences. Most the land is undeveloped. According to a 2002 study commissioned by the Pennsylvania Department of Conservation and Natural Resources, about 3 percent of the Haymakers Run watershed is impervious surface. Land uses in the watershed are 75.2 percent forested/herbaceous, 17.8 percent planted/cultivated, 5.5 percent residential/urban, 0.5 percent transitional, 0.2 percent industrial/transportation, and 0.1 percent mines/barren areas. These land use fractions were used to determine the subwatershed curve numbers. According to NRCS, the main soil types present on-site are Ernest Silt Loam and Gilpin-Weikert channery silt loam with hydrologic soil group C. Runoff calculations used 24-hour NRCS storm data for Westmoreland County.

Land use within the Steels Run subwatershed is comprised of 60.9 percent forested/herbaceous, 34.5 percent planted/cultivated, 2.1 percent mines/barren areas, 1.2 percent transitional 0.4 percent residential/urban, and 0.2 percent industrial/transportation. The subwatershed is composed of only 0.4 percent impervious cover (the lowest in the Turtle Creek watershed), classifying Steels Run as a sensitive stream. There is no abandoned mine land in the Steels Run subwatershed. Approximately 21.4 percent of the subwatershed has been mined for the Pittsburgh Coal.

Land use within the Lower Turtle Creek subwatershed is comprised of 51.5 percent forested/herbaceous, 26.5 percent residential/urban, 9.8 percent industrial/ transportation, 1.1

percent mines/barren areas, 4.7 percent planted/cultivated and 1.2 percent transitional. The subwatershed is composed of 22.8 percent impervious cover, classifying Lower Turtle Creek as an impacted stream. There are 1.35 square miles of abandoned mine land areas in the Lower Turtle Creek subwatershed, and 62.1 percent of the subwatershed has been mined for the Pittsburgh Coal.

Land use within the Middle Turtle Creek subwatershed is comprised of 69.4 percent forested/herbaceous, 20.9 percent residential/urban, 5.2 percent industrial/ transportation, 3.2 percent planted/cultivated, 0.7 percent mines/barren areas, and 0.5 percent transitional. The subwatershed is composed of 16.2 percent impervious cover, classifying Middle Turtle Creek as an impacted stream. There are no abandoned mine land areas in the Middle Turtle Creek subwatershed, and only 0.1 percent of the subwatershed has been mined for the Pittsburgh Coal.

Land use within the Upper Turtle Creek subwatershed is comprised of 59.1 percent forested/herbaceous, 19.0 percent planted/cultivated, 11.2 percent residential/urban, 1.9 percent industrial/transportation, 0.3 percent mines/barren areas, and 0.2 percent transitional. The subwatershed is composed of only 8.1 percent impervious cover, classifying Upper Turtle Creek as a sensitive stream. There are 1.78 square miles of abandoned mine land areas in the Upper Turtle Creek subwatershed, and 56.3 percent of the subwatershed has been mined for the Pittsburgh Coal.

Haymakers Run crosses the southern portion of the JB Tonkin Compressor Station site from east to west. Two unnamed tributaries join Haymakers Run near the southeastern portion of the site. One tributary flows north to south, and the other flows south to north. The site is in the Haymakers Run-Turtle Creek watershed. Generally, drainage enters the site from the north and the south and via Haymakers Run on the east. Most of the runoff from the site enters Haymakers Run, which flows to the west. The upstream drainage area of the site was estimated using USGS topographic maps for Westmoreland County. A listing of waterbodies within the construction footprint for the Project is provided in Section 2 of the ESCGP-2 application.

The TL-636 Pipeline crosses waterbodies that are within the Haymakers Run-Turtle Creek watershed. Generally, drainage crosses the proposed pipeline from the east to the southwest. The proposed pipeline crosses two high-quality drainage basins and one non-high quality drainage basin. Tributaries drain to Turtle Creek, which flows to the west. The upstream drainage area of the site was estimated using USGS topographic maps for Westmoreland County. A listing of waterbodies within the construction footprint for the Project is provided in Section 2 of the ESCGP-2 application.

7.3 DRAINAGE AREAS AND CURVE NUMBER RUNOFF METHOD ASSUMPTIONS

The site is part of a set of drainage areas that were determined by analyzing pre-development and post-development flow paths within the watershed. Drainage maps that illustrate drainage area boundaries, time of concentration calculation flow paths, existing contours, and proposed

features are provided in Appendix C. Data provided on the drainage maps was used to complete runoff volume calculations and peak flow calculations as discussed herein. The drainage areas were split into subareas based on the BMPs they are tributary to and their existing and proposed land cover complex for use in the stormwater analysis.

7.4 PEAK FLOW CALCULATIONS

Peak stormwater runoff flow rates were analyzed for the 1-year, 2-year, 5-year, 10-year, 25-year, 50-year and 100-year (24-hour duration) design storms. These design storms were analyzed to be consistent with the recommendations of the PA Stormwater BMP Manual (2006). The analysis was performed using HydroCAD software to model the existing and proposed conditions using the methodologies described previously in this section. Drainage area runoff hydrographs were routed through the proposed stormwater management facilities to determine the impact of these facilities on anticipated future stormwater runoff volumes and peak flow rates. Peak flow rate calculations are included in Appendix B.

Peak flow for the launcher at the southern end of the pipeline was not calculated since it is exempt under Worksheet 6 for Small Site/Small Impervious Area Exception for Peak Rate Mitigation Calculations. The launcher is exempt because it meets the increase in 2-year/24-hour runoff with structural BMPs, site impervious area and site area is less than one acre, no impervious area is being added (only gravel), no credits are being added for non-structural BMPs and the infiltration trenches will infiltrate at least 0.5 inch/hour.

7.5 RUNOFF VOLUME CALCULATIONS

Runoff volume calculations were completed for the JB Tonkin Compressor Station, the launcher facilities, and the permanent access roads. The 2, 10, 50, and 100-year storm event runoff volumes were calculated for each land cover / hydrologic soil group combination in each drainage area. These runoff volumes were added to determine the total runoff volume for each drainage area. This was calculated using Worksheet 4 contained in the PA Stormwater BMP Manual (2006). Runoff volume was calculated for each type of land cover and hydrologic soil group. The summary tables contained in Appendix B summarize the difference in 2-year design storm runoff volume between existing conditions and the proposed conditions for each drainage area. PCSM worksheets are available in Appendix B.

JB Tonkin Compressor Station			
Design storm frequency: 2-year	Pre-construction	Post-construction	Net Change
Rainfall Amount: 2.38 inches			
Impervious area (acres)	1.390	2.020	0.63
Volume of Stormwater Runoff (acre-feet) without planned stormwater BMPs	0.677	0.960	0.283
Volume of stormwater runoff (acre-ft) stored by BMPs	_	0.600	
Stormwater discharge rate for the design frequency storm			
1) 2-year/24-hour	10.34	15.17	4.83
2) 10-year/24-hour	20.35	26.37	6.02
3) 50-year/24-hour	32.92	39.76	6.84
4) 100-year/24-hour	39.22	46.24	7.02

Pipe Yard			
Design storm frequency: 2-year	Pre-construction	Post-construction	Net Change
Rainfall Amount: 2.38 inches			
Impervious area (acres)	0	0	0
Volume of Stormwater Runoff (acre-feet) without planned stormwater BMPs	0.095	0.120	0.025
Volume of stormwater runoff (acre-ft) with planned stormwater BMPs	-	TBD pending infiltration testing	
Stormwater discharge rate for the design frequency storm			
1) 2-year/24-hour	2.44	3.22	
2) 10-year/24-hour	5.93	7.02	
3) 50-year/24-hour	10.62	11.98	
4) 100-year/24-hour	13.02	14.48	

Access Roads			
Design storm frequency: 2-year	Pre-construction	Post-construction	Net Change
Rainfall Amount: 2.38 inches			
Impervious area (acres)	0	0	0
Volume of Stormwater Runoff (acre-feet) without planned stormwater BMPs	0.114	0.296	0.182
Volume of stormwater runoff (acre-ft) with planned stormwater BMPs	-	0.296	0.182
Stormwater discharge rate for the design frequency storm			
1) 2-year/24-hour	2.91	3.11	0.2
2) 10-year/24-hour	6.31	5.69	-0.62
3) 50-year/24-hour	11.78	8.8	-2.98
4) 100-year/24-hour	12.94	10.33	-2.61

A site investigation, in accordance with the protocols of the Pennsylvania Stormwater BMP Manual, was performed at the JB Tonkin Compressor Station in August 2016. Infiltration testing was completed by Civil and Environmental Consultants, Inc. (CEC) to determine the ability of on-site soils to support infiltration. Based on the test results (included in Appendix D) it was concluded that, due to the presence of shallow groundwater and weathered rock, infiltration of stormwater runoff at the site is not feasible.

At this time infiltration is not proposed at the launcher facility or the access roads so no infiltration testing had been conducted in this area.

8.0 STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICE MAINTENANCE

A maintenance program that provides for routine inspection, as well as repair and replacement as necessary, is essential to effective and efficient operation of the proposed stormwater BMPs. Implementation of the following maintenance plan is a key component in achieving the intent of this SR/PCSM Plan and minimizing negative impacts of stormwater runoff from the proposed facilities. The permittee and any co-permittees shall be responsible for long-term operation and maintenance of the stormwater BMPs unless a different person is identified in the Notice of Termination and has agreed to long-term operation and maintenance of the stormwater BMPs. Specific maintenance procedures for BMPs are discussed below in Section 8.3. A Professional Engineer will be present for critical stages of BMP construction (i.e., installation of structurally engineered BMPs) or other BMPs as deemed appropriate by the PADEP or the Conservation District.

8.1 INSPECTIONS

The responsible party (as identified in the previous paragraph) shall inspect all stormwater BMPs semi-annually, using the inspection form in Appendix E, or as specified in Section 8.3. This inspection shall include a general review of the performance of all stormwater management facilities as well as an examination of each individual BMP noting when maintenance (e.g., cleanout, repair, replacement, regrading, re-stabilizing, etc.) is required, when specific deficiencies exist, and/or signs of potential future problems are present. The inspections shall be documented in a written report summarizing each inspection and shall include a schedule for repair of noted deficiencies. Any required preventive and remedial maintenance work, including cleanout, repair, replacement, regrading, or reseeding, must be scheduled for immediate corrective action. If any installed stormwater BMPs are identified as failing to perform as expected, corrective modifications or replacement BMPs shall be scheduled for installation. The PCSM Inspection Form is available in Appendix E.

8.2 GENERAL MAINTENANCE

The Owner, or a designated representative, shall be responsible for general operation and maintenance of stormwater management BMPs for the life of the facility. General maintenance shall include preventive and remedial maintenance work, including cleanout, repair, replacement, regrading, or reseeding. All items included as PCSM BMPs will be recorded in an easement document at the County Courthouse.

Areas void of vegetation shall promptly be reseeded and mulched to establish protection. Any device found to be clogged, damaged, half-full of silt, or not fully operational shall be cleaned of debris. BMPs will be repaired or replaced (as necessary) to ensure effective and efficient operation. The disposal of any solid waste is the responsibility of the party performing the maintenance and shall be conducted in accordance with the Recycling/Disposal of Materials procedures identified in this plan. Necessary repairs will be made immediately after any deficiencies have been observed.

8.3 SPECIFIC MAINTENANCE

The Owner, or a designated representative, shall be responsible for the following specific maintenance activities throughout the life of the facilities.

8.3.1 Culvert Maintenance

Inspect culvert for flow obstructions, scour at the inlet and outlet, and damage to the culvert.

Flow obstructions shall be removed immediately; suitable inlet and/or outlet protection should be provided where scour is observed; and, damaged culverts shall be repaired, or replaced immediately.

8.3.2 Riprap Apron Maintenance

Inspect riprap on the back side of aprons at pipe discharges for scour around the pipe. The specified stone depth shall be maintained at all times. Replace displaced riprap within the apron immediately.

The riprap apron shall be maintained free of sediment deposits and other debris. When present, remove sediment and debris to the extent possible. In the event the apron becomes too clogged with sediment and debris to remain effective, the apron shall be removed and replaced.

8.3.3 Seeding and Mulching Maintenance

Inspect seeded and mulched area for evidence of erosion, immediately repair and reseed areas disturbed by erosion or slope movement. Identify vegetated areas in need of additional erosion control measures until permanent vegetative cover is established.

Inspect seeded and mulched areas for displaced mulch cover and uneven vegetative growth. For displaced mulch, replace mulch at the original application rate or greater. Reseed bare areas at original seed application rates.

8.3.4 Vegetative Swale Maintenance

In general, maintenance strategies for swales focus on sustaining the hydraulic and pollutant removal efficiency of the channel, as well as maintaining a dense vegetative cover. Maintenance activities will be done annually and within 48 hours after every major storm event (greater than 1 inch rainfall depth):

- Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulation (address when greater than 3 inches at any spot or covering vegetation).
- Inspect vegetation on side slopes for erosion and formation of rills or gullies, correct as needed.

- Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.
- Mow and trim vegetation to ensure safety, aesthetics, proper swale operation, or to suppress weeds and invasive vegetation; dispose of cuttings in a local composting facility; mow only when swale is dry to avoid rutting.
- Inspect for litter; remove prior to mowing.
- Inspect for uniformity in cross-section and longitudinal slope, correct as needed.
- Inspect swale inlet (curb cuts, pipes, etc.) and outlet for signs of erosion or blockage, correct as needed.

Maintenance activities will be done as needed:

- Plant alternative grass species in the event of unsuccessful establishment.
- Reseed bare areas; install appropriate erosion control measures when native soil is exposed or erosion channels are forming.
- Rototill and replant swale if draw down time is more than 48 hours.
- Inspect and correct check dams when signs of altered water flow (channelization, obstructions, erosion, etc.) are identified.
- Water during dry periods, fertilize, and apply pesticide only when absolutely necessary.

8.3.5 Runoff Reuse and Recapture Maintenance

Flush cisterns to remove sediment. Brush the inside surfaces and thoroughly disinfect. Do not allow water to freeze in devices.

8.3.6 Check Dam Maintenance

Inspect and correct check dams when signs of altered water flow (channelization, obstructions, erosion, etc.) are identified.

9.0 RECYCLING/DISPOSAL OF MATERIALS

Building materials and other construction site wastes shall be properly managed and disposed of to reduce potential for pollution to surface and ground waters as per 25 Pa. Code § 102.4(b)(5)(xi). All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the PADEP's Solid Waste Management Regulations at 25 Pa. Code 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. No off-site

disposal area has been identified as part of this plan. Construction waste will be disposed of properly by the contractor at a PADEP-approved facility or recycled.

The contractor shall develop and implement procedures that will detail the proper measures for disposal and recycling of materials associated with or from the Project site in accordance with PADEP regulations. Construction wastes include, but are not limited to, excess soil materials, building materials, concrete wash water, and sanitary wastes that could adversely affect water quality. The contractor shall inspect the Project area weekly and properly dispose of construction wastes. Measures will be planned and implemented for housekeeping materials management and litter control. Wherever possible, re-useable wastes will be segregated from other waste and stored separately for recycling.

The contractor shall be responsible for submitting an E&SCP for any borrow or waste areas required to complete the work. Appropriate BMPs will be implemented at disposal locations for excess soil/rock waste. The disposal locations shall be verified with the PADEP to show compliance with wetland and floodplain regulations. If an off-site location is used for borrow or disposal, the contractor is responsible for developing and implementing an adequate E&SCP(s) and submitting the plan(s) to the PADEP for review and approval. The contractor shall immediately stabilize the waste site upon completion of any stage or phase of earth disturbance activity at the waste site.

10.0 THERMAL IMPACTS ANALYSIS

The proposed Project was analyzed for potential thermal impacts associated with the planned activities and how potential impacts could be avoided, minimized, or mitigated. Thermal impacts resulting from activities similar to the proposed Project are primarily due to the negative impacts of increased impervious area. The following opportunities for negative thermal impacts exist for project similar to the one being proposed:

- Heat transfer from impervious cover to surface runoff;
- Solar heat gain in ponded surface water;
- Increased surface temperatures caused by removal of vegetation;
- Reduced thermal buffering of stormwater due to reduction in site's infiltration capacity; and
- Increased stream temperatures due to reduced base flow caused by reduction in site's infiltration capacity.

Siting of the proposed facilities was limited by the location of the existing facilities and pipelines which they will service, surface restrictions such as regulatory setbacks from building and waterways, and existing property boundaries. From this perspective, the potential to limit thermal impacts by altering the location of the Project is limited. However, Table 10.0-1 shows

several site layout criteria that were used for the proposed Project and how they help prevent or minimize thermal impacts to receiving waters.

Tuble 10.0 1. Thermal impact benefits of Site Earyout Cinterna			
Site Layout Criteria	Thermal Impact Benefits		
Avoid impacts to surface waters and wetlands to the maximum extent possible	Maintain existing hydrology and encourage natural thermal buffering		
Locate proposed facilities as close as possible to existing facilities	Minimize proposed impervious cover		
Choose areas with minimal existing tree cover	Reduce removal of existing tree canopy		

Table 10.0-1: Thermal Impact Benefits of Site Layout Criteria

In addition to the above site selection criteria, several BMPs will be used to help mitigate negative thermal impacts from the proposed Project. Minimizing the LOD and the limit of tree clearing to the minimum area necessary to construct the proposed facilities will preserve existing vegetative cover and maintain the infiltration and evapotranspiration capacity of undisturbed areas to the maximum extent practicable. Also, disturbed areas will be immediately revegetated to help cool runoff prior to discharge.

11.0 ANTIDEGRADATION ANALYSIS

As some of the streams within the action area are classified as high quality-cold water habitats, ABACT standards will be applied to this Project. To reduce impacts to water quality from stormwater runoff associated with Project activities, the following ABACT nondischarge alternative standards will be applied to this Project, as necessary, in addition to the BMPs outlined throughout the E&SCP:

- The site layout has taken into account the preservation of riparian buffers and natural watercourses where possible. Additionally, the use of cuts and fills has been minimized.
- Access to the site has been limited to the use of construction entrances that were designed to use existing roads and avoid stream and wetland crossings where possible.
- Sediment barriers proposed for use during construction primarily include compost type BMPs and are selected and designed based on site-specific conditions, including slope and soil type. Temporary slope breakers and waterbars will divert stormwater from the ROW to well vegetated areas and sediment barriers. Temporary stream and wetland crossings were designed according to the E&SCP to minimize impacts from construction and vehicular traffic.
- Upon completion or temporary cessation of earth disturbance activities, disturbed areas will be stabilized; soil stabilizers and blanketing will be used as necessary. Disturbed areas will be revegetated in accordance with DTI's post-construction management plan.

These BMPs, in conjunction with additional BMPs outlined in the E&SCP, serve to minimize or eliminate increased storm water discharges to all waters of the state of Pennsylvania, including high quality-cold water streams.