

EROSION AND SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION:

THE MOUNTAIN VALLEY PIPELINE PROJECT (PROJECT) WILL EXTEND FROM THE EXISTING EQUITRANS L.P TRANSMISSION SYSTEM AND OTHER NATURAL GAS FACILITIES IN WETZEL COUNTY, WEST VIRGINIA TO TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC'S ZONE 5 COMPRESSOR STATION 165 IN PITTSYLVANIA COUNTY, VIRGINIA. IN ADDITION, THE PROJECT WILL INCLUDE APPROXIMATELY 171,600 HORSEPOWER OF COMPRESSION AT THREE COMPRESSOR STATIONS CURRENTLY PLANNED ALONG THE ROUTE. AS WELL AS MEASUREMENT, REGULATION, AND OTHER ANCILLARY FACILITIES REQUIRED FOR THE SAFE AND RELIABLE OPERATION OF THE PIPELINE. THE PIPELINE IS DESIGNED TO TRANSPORT UP TO 2.0 MILLION DEKATHERMS PER DAY OF NATURAL GAS.

SPREAD 9 CONSISTS OF APPROXIMATELY 31.1 MILES OF 42" NATURAL GAS PIPELINE, CONSTRUCTED WITHIN GILES, CRAIG AND MONTGOMERY COUNTIES. THE SPREAD STARTS AT THE INTERSECTION OF THE PIPELINE AND KOW CAMP ROAD (STATE ROUTE 616) AND ENDS JUST SOUTH OF U.S. 11 (LEE HIGHWAY). ACCESS TO THE PIPELINE WILL BE PROVIDED BY EXISTING ROADS, FOR BOTH PERMANENT AND TEMPORARY ACCESS. DISTURBED LAND WILL BE RETURNED TO APPROXIMATE PRE-EXISTING CONTOURS. THE CONSTRUCTION LIMITS OF DISTURBANCE (LOD) WILL BE 125 FEET WIDE. THE TOTAL SPREAD 9 LOD AREA IS 831.6 ACRES. THE PERMANENT RIGHT-OF-WAY (ROW) WILL BE 50 FEET WIDE. THE ROW MAY SHIFT AS A RESULT OF FIELD CONDITIONS DISCOVERED DURING CONSTRUCTION. THE ROW WILL NOT MOVE BEYOND THE TEMPORARY LOD DEPICTED ON THE PLAN SHEETS. BMPS DESIGNED FOR THE ORIGINAL ROW ALIGNMENT WILL BE IMPLEMENTED ALONG THE MODIFIED ROW ALIGNMENT.

2. EXISTING SITE CONDITIONS:

EXISTING TOPOGRAPHY IS HIGHLY VARIABLE OVER THE PIPELINE ROUTE WITH GRADES RANGING FROM 0.5% TO 65%. EXISTING GROUND COVER INCLUDES PASTURE, AGRICULTURAL ACTIVITIES, SINGLE FAMILY HOMES AND OTHER STRUCTURES, STREAMS, WETLANDS, PONDS, ROADS AND RAILROADS. THERE ARE 277 DISTINCT DRAINAGE AREAS ALONG THE PIPELINE ROUTE.

3. ADJACENT AREAS:

ADJACENT AREAS INCLUDE: OTHER FORESTED AREAS, SINGLE-FAMILY HOME SITES, AGRICULTURAL ACTIVITIES (E.G. CROPS, HAY PRODUCTION), PASTURE, STREAMS, WETLANDS, PONDS, ROADS AND RAILROADS.

4. OFF-SITE AREAS:

NO OFF-SITE LAND DISTURBING ACTIVITIES ARE PROPOSED. ANY OFF-SITE LAND-DISTURBING ACTIVITY ASSOCIATED WITH THE PROJECT MUST HAVE AN APPROVED ESC PLAN.

5. SOILS:

ALLEGHENY LOAM (1B AND 2C), BERKS AND WEIKERT SOILS (6E), BERKS AND WEIKERT VERY STONY SOILS (7D), BERKS CHANNERY SILT LOAM (2D), BERKS-CLYMER COMPLEX (1C), BERKS-CULLEOKA COMPLEX (6E AND 6G), BERKS-LOWELL-RAYNE COMPLEX (3E), BERKS-ROCK OUTCROP COMPLEX (4E), BERKS-WEIKERT COMPLEX (5D), BRADDOCK SANDY LOAM (4B AND 4C), CALVIN-ROUGH COMPLEX (10G), CANEYVILLE-OPEQUON-ROCK OUTCROP COMPLEX (8D AND 8E), CARBO AND CHILHOWIE SOILS (9C AND 9D), CARBO SILTY CLAY LOAM VERY ROCKY (5D), CARBO-ROCK OUTCROP COMPLEX (6F AND 11E), CHAGRIN SILT LOAM (7), CRAIGVILLE SOILS (10), DUFFIELD-ERNEST COMPLEX (11B AND 11C), FAYWOOD SILT LOAM (11D AND 11F), FREDERICK AND VERTREES GRAVELLY SILT LOAM (13C AND 13D), FREDERICK AND VERTREES SILT LOAM (12B AND 12C), FREDERICK GRAVELLY SILT LOAM (14C, 14D, AND 14E), FREDERICK SILT LOAM (13D, 13E, 19C, AND 19D), FREDERICK VERY STONY SILT LOAM (15E), FREDERICK-ROCK OUTCROP COMPLEX (16F), GILPIN SILT LOAM (17D AND 17F), GILPIN VERY STONY SILT LOAM (18D AND 18F), GROSECLOSE AND PLOMINTO GRAVELLY SOILS (17C), GROSECLOSE AND PLOMINTO SOILS (16D AND 16E), GROSECLOSE SILT LOAM (24D AND 24E), GROSECLOSE-LITZ COMPLEX (25D), GUERNSEY SILT LOAM (19B), HAYTER LOAM (20B), HAYTER SOILS (21C), JEFFERSON EXTREMELY STONY SOILS (24D), JEFFERSON SOILS (22C), JEFFERSON VERY STONY SOILS (23C), MCGARY AND PURDY SOILS (25), NOLICHUCKY LOAM (29B, 29C, AND 29D), NOLICHUCKY VERY STONY SANDY LOAM (30C, 30D, AND 30F), OPEQUON-ROCK OUTCROP COMPLEX (35E), ORISKANY GRAVELLY FINE SANDY LOAM (27E), POPE FINE SANDY LOAM (31A), PLOMINTO SILT LOAM (31C, 31D, AND 31E), ROSS SOILS (28), SEQUIOIA SILT LOAM (33D AND 33F), SOTTOWER SILT LOAM (39C), TIMBERVILLE VARIANT LOAM (35C), TUMBLING LOAM (36C), UDORHTENTS AND URBAN LAND (29), UNISON AND BRADDOCK SOILS (30B, 30C, AND 30D), WEAVER SOILS (33), WEIKERT-ROCK OUTCROP COMPLEX (65F), WURNO-CANEYVILLE COMPLEX (34E)

6. CRITICAL AREAS:

THERE ARE WETLAND AND WATERBODY CROSSINGS ALONG THE PIPELINE ROUTE, AS WELL AS WETLANDS AND STREAMS ADJACENT TO THE LOD. PRIOR TO GRADING ACTIVITIES, SEDIMENT BARRIERS WILL BE INSTALLED ACROSS THE CONSTRUCTION AREA AT THE EDGE OF THE WATER OR THE EDGE OF THE WETLAND, AND ALONG THE SIDES OF THE CONSTRUCTION WORK AREA AS NEEDED TO PREVENT THE FLOW OF SPOIL INTO THE WATERBODY OR WETLAND. SEDIMENT BARRIERS WILL BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REINSTALLED AS NECESSARY UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION OF DISTRIBUTED ADJACENT UPLAND AREAS IS COMPLETE. AT WETLAND AND STREAM CROSSINGS, THE CONSTRUCTION LOD HAS BEEN REDUCED FROM 125 FEET TO 75 FEET TO MINIMIZE IMPACTS. THE PRINCIPAL CROSSING METHOD WILL BE OPEN-CUT DRY-DITCH, INCLUDING FLUME PIPE CROSSING, COFFERDAM (PORTA-DAM) CROSSING AND DAM AND PUMP. WATERBODY AND WETLAND CROSSINGS WILL BE CLEARLY MARKED IN THE FIELD PRIOR TO THE START OF TREE CLEARING ACTIVITIES. TRENCH PLUGS WILL BE USED AT ALL WATERBODY CROSSINGS TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY. FINAL GRADING WILL BEGIN PROMPTLY AFTER BACKFILLING IS COMPLETED AND THEN STABILIZED IMMEDIATELY. WHEN TIMBER MATS ARE USED FOR WETLAND AND WATERBODY CROSSINGS, THE BRIDGE ENTRANCE AND EXIT ARE PROTECTED WITH BMPS (TYPICALLY COMPOST FILTER SOCK) ALONG WITH GEOTEXTILE LAYERED BETWEEN THE TIMBER MATS. THE SIDES OF THE BRIDGE ARE PROTECTED WITH WOOD CURBS, TOE BOARDS, SIDE BOARDS OR WEDGES TO PROTECT THE WATERBODY FROM SPOIL SLUICING OFF THE TIMBER MATS INTO THE WATERBODY. TO FURTHER PROTECT WATERS FROM SEDIMENT TRACKED ONTO THE TIMBER MATS, ADDITIONAL CONTROLS WILL BE ADDED IN THE FIELD AS NECESSARY. TIMBER MATS WILL BE CLEARED OF SOIL/ROCK MUD ACCUMULATION AT THE END OF EACH DAY.

MANY PORTIONS OF THE PIPELINE ROUTE ARE LOCATED IN LANDSLIDE SUSCEPTIBLE AREAS. THESE LANDSLIDE SUSCEPTIBLE AREAS PRIMARILY OCCUR IN WEATHERED BEDROCK OR COLLUVIAL SOIL AND WITHIN OLD LANDSLIDE DEBRIS LOCATED ON STEEP SLOPES. REFER TO THE PROJECT SPECIFIC STANDARDS AND SPECIFICATIONS FOR VIRGINIA FOR THE LANDSLIDE MITIGATION PLAN (APPENDIX F)

ACIDIC SOILS AREAS ARE KNOWN TO OCCUR IN PORTIONS OF THE PROJECT AREA. REFER TO THE PROJECT SPECIFIC STANDARDS AND SPECIFICATIONS FOR VIRGINIA FOR THE ACID FORMING MATERIALS IDENTIFICATION AND TESTING WORK PLAN (APPENDIX G).

KARST FEATURES ARE LOCATED WITHIN ¼-MILE (THE SECONDARY KARST BUFFER) AND WITHIN 150 FEET OF THE PROPOSED ROUTE. REFER TO THE PROJECT SPECIFIC STANDARDS AND SPECIFICATIONS FOR VIRGINIA FOR THE KARST HAZARDS ASSESSMENT (APPENDIX H).

7. EROSION AND SEDIMENT CONTROL MEASURES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992, AS WELL AS ANY ADDITIONAL MEASURES REQUIRED BY APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

- 1. STRUCTURAL PRACTICES
3.01 - SAFETY FENCE
3.02 - CONSTRUCTION ENTRANCE
3.04 - STRAW BALE BARRIER
3.05 - SILT FENCE BARRIER
3.06 - BRUSH BARRIER
3.09 - TEMPORARY DIVERSION DIKE
3.11 - TEMPORARY SLOPE BREAKERS / TEMPORARY RIGHT-OF-WAY DIVERSION
3.18 - OUTLET PROTECTION
3.20 - ROCK CHECK DAM
3.22 - VEGETATIVE STREAMBANK STABILIZATION
3.24 - TEMPORARY STREAM CROSSING
3.25 - DIVERSION CHANNEL CROSSING / FLUME PIPE CROSSING / COFFERDAM CROSSING
3.26 - DEWATERING STRUCTURE
3.27 - TURBIDITY CURTAIN
3.29 - SURFACE ROUGHENING
MVP-ES2 - PUMPED WATER FILTER BAR
MVP-ES3 - COMPOST FILTER SOCK
MVP-ES9 - BELTED SILT RETENTION FENCE
MVP-ES37 - TIMBER MAT / WETLAND CROSSING
MVP-ES38 - DIVERSION DIKE / WATERBARS WITH COMPOST
MVP-20 TRENCH PLUGS / BREAKERS

- 2. VEGETATIVE PRACTICES
3.30 - TOPSOIL (STOCKPILE)

- 3.31 - TEMPORARY SEEDING
3.32 - PERMANENT SEEDING
3.35 - MULCHING
3.36 - SOIL STABILIZATION BLANKETS AND MATTING
MVP-ES11.0 - TEMPORARY EROSION CONTROL SEEDING MIX
MVP-ES11.1 - FOREST REGENERATION WOODY SEED MIX AND APPLICATION RATES
MVP-ES11.2 - UPLAND MEADOW SEED MIX AND APPLICATION RATES
MVP-ES11.3 - UPLAND STEEP SLOPE SEED MIX AND APPLICATION RATES
MVP-ES11.4 - WETLAND SEED MIX AND APPLICATION RATES
MVP-ES11.5 - RIPARIAN SEED MIX AND APPLICATION RATES
MVP-ES11.6 - NATIVE TREE AND SHRUB SPECIES FOR BARE ROOT PLANTINGS WITHIN RIPARIAN AREAS AND FORESTED WETLANDS
MVP-ES11.7 - NATIVE TREE AND SHRUB SPECIES FOR BARE ROOT PLANTINGS WITHIN RIPARIAN AREAS AND FORESTED WETLANDS
MVP-ES11.8 - STREAM CROSSINGS PROPOSED FOR BARE ROOT SEEDING PLANTINGS
MVP-ES11.9 - STREAM CROSSING FOR BARE ROOT SEEDING PLANTING
MVP-ES46 - 46.2 - TOPSOILING & SOIL HANDLING

8. PERMANENT STABILIZATION:

ALL DISTURBED AREAS SHALL BE STABILIZED WITH PERMANENT SEEDING WITHIN SEVEN WORKING DAYS OF FINAL GRADING. WEATHER AND SOIL CONDITIONS PERMITTING, AS SPECIFIED IN THE PROJECT SPECIFIC STANDARDS AND SPECIFICATIONS FOR VIRGINIA.

9. STORMWATER RUNOFF CONSIDERATIONS:

CONCENTRATED STORMWATER FLOW SHALL BE RELEASED TO NATURAL STORMWATER CONVEYANCE SYSTEMS. CHANNEL PROTECTION REQUIREMENTS WILL BE MET VIA THE ENERGY BALANCE METHOD AND DETENTION ASSOCIATED WITH COMPOST AMENDED WATERBARS. IF NECESSARY TO DISSIPATE CONCENTRATED FLOW INTO SHEET FLOW, LEVEL SPREADERS WILL BE DESIGNED PER VIRGINIA DEQ STORMWATER DESIGN SPECIFICATION NO. 2.

FLOOD PROTECTION WILL BE MET BY DISCHARGING TO CONCENTRATED STORMWATER FLOW TO STORMWATER CONVEYANCE SYSTEMS THAT DO NOT EXPERIENCE LOCALIZED FLOODING DURING THE 10-YEAR 24-HOUR STORM EVENT AND THE 10-YEAR 24-HOUR POST-DEVELOPMENT PEAK FLOW RATE IS CONFINED WITHIN THE STORMWATER CONVEYANCE SYSTEM, OR DEMONSTRATING A REDUCTION IN THE 10-YEAR 24-HOUR STORM EVENT PEAK FLOW RATE.

10. MAINTENANCE:

TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH THE APPROVED PROJECT SPECIFIC STANDARDS AND SPECIFICATIONS.

IN NON-AGRICULTURAL AREAS, THE VISUAL SURVEY SHALL BE COMPARED TO THE DENSITY AND COVER OF ADJACENT UNDISTURBED LANDS. IN AGRICULTURAL AREAS, THE VISUAL SURVEY SHALL BE COMPARED TO THE ADJACENT UNDISTURBED PORTIONS OF THE SAME FIELD, UNLESS THE EASEMENT AGREEMENT SPECIFIES OTHERWISE.

WETLANDS ALONG THE PROPOSED PIPELINE ARE EXPECTED TO EXHIBIT VARYING DEGREES OF SATURATION AND WATER ELEVATION, REQUIRING A VARIETY OF PLANT SPECIES TO BE RE-ESTABLISHED. IN UNSATURATED WETLANDS, MOST VEGETATION WILL BE REPLACED BY SEEDING. SATURATED WETLANDS WILL TYPICALLY BE ALLOWED TO RE-VEGETATE NATURALLY. WETLAND RE-VEGETATION WILL BE CONSIDERED SUCCESSFUL WHEN THE COVER OF HERBACEOUS SPECIES IS AT LEAST 80 PERCENT OF THE TYPE, DENSITY, AND DISTRIBUTION OF THE VEGETATION IN ADJACENT WETLAND AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION. RE-VEGETATION EFFORTS WILL CONTINUE UNTIL WETLAND RE-VEGETATION IS SUCCESSFUL.

CONDUCTING INSPECTIONS OF TEMPORARY ESC CONTROLS AND SWM BMPS ON AT LEAST THE FOLLOWING FREQUENCIES:

- A. IN NON-TMDL WATERSHEDS
AT LEAST ONCE EVERY FIVE BUSINESS DAYS, OR
AT LEAST ONCE EVERY 10 BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT (OR ON THE NEXT BUSINESS DAY IF THE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 48 HOURS BETWEEN BUSINESS DAYS.
B. IN TMDL WATERSHEDS:
AT LEAST ONCE EVERY FOUR BUSINESS DAYS, OR
AT LEAST ONCE EVERY 10 BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT (OR ON THE NEXT BUSINESS DAY IF THE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 48 HOURS BETWEEN BUSINESS DAYS.

REPAIR OF ALL INEFFECTIVE TEMPORARY ESC MEASURES SHALL OCCUR WITHIN 24 HOURS OF IDENTIFICATION, OR AS SOON AS CONDITIONS ALLOW IF COMPLIANCE WITH THIS TIME FRAME WOULD RESULT IN GREATER ENVIRONMENTAL IMPACTS.

TEMPORARY BMPS WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION. DISTURBED AREAS NOT ATTAINING AN ACCEPTABLE VEGETATIVE COVER SHALL BE RE-SEEDED AS NEEDED UNTIL STABILIZATION IS ACHIEVED.

TEMPORARY ESC BMPS SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

11. CALCULATIONS: BMP SIZING AND INSTALLATION HAS BEEN BASED ON THE FOLLOWING CRITERIA INCLUDED BY REFERENCE IN BOTH THE ANNUAL STANDARDS AND SPECIFICATIONS AND THE GENERAL DETAILS INCLUDED WITH THE EROSION AND SEDIMENT CONTROL PLANS:

- COMPOST FILTER SOCK - MVP-3.0, MVP-3.1, MVP-3.3
COMPOST AMENDED RIGHT-OF-WAY DIVERSION/WATER BAR - VIRGINIA BMP CLEARINGHOUSE SPECIFICATION NO. 4
EARTHEN LEVEL SPREADER - VIRGINIA BMP CLEARINGHOUSE SPECIFICATION NO. 2
GRASS LINED CHANNEL - VIRGINIA BMP CLEARINGHOUSE SPECIFICATION NO. 3
PERMANENT RIGHT-OF-WAY DIVERSION/WATER BAR - DETAIL MVP-17, MVP-17.1, MVP-17.2
SEDIMENT TRAP - VADEQ STD & SPEC 3.13
SILT FENCE - VADEQ STD & SPEC 3.05
TEMPORARY RIGHT-OF-WAY DIVERSION/WATER BAR - VADEQ STD & SPEC 3.11
TRENCH BREAKERS - MVP-20

12. GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.
ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
ES-5: PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH

RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

13. MINIMUM STANDARDS (MS):

ALL LAND-DISTURBING ACTIVITIES UNDERTAKEN ON PRIVATE AND PUBLIC LANDS IN THE COMMONWEALTH OF VIRGINIA MUST MEET THE 19 "MINIMUM STANDARDS" FOR ESC IN SECTION 4VAC50-30-40 OF THE VIRGINIA ESC REGULATIONS. THE APPLICANT WHO SUBMITS THE ESC PLAN TO THE PROGRAM AUTHORITY FOR APPROVAL IS RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE MINIMUM STANDARDS THAT APPLY TO HIS/HER ACTIVITIES.

MS-1 SOIL STABILIZATION. PERMANENT OR TEMPORARY STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2 SOIL STOCKPILE STABILIZATION. DURING CONSTRUCTION, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. TEMPORARY PROTECTION AND PERMANENT STABILIZATION SHALL BE APPLIED TO ALL SOIL STOCKPILES ON THE SITE AND BORROW AREAS OR SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3 PERMANENT STABILIZATION. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.

MS-4 SEDIMENT BASINS & TRAPS. SEDIMENT BASINS, SEDIMENT TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5 STABILIZATION OF EARTHEN STRUCTURES. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6 SEDIMENT TRAPS & SEDIMENT BASINS. SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN AS FOLLOWS:

- 1. SEDIMENT TRAPS:
1.1. ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
1.2. MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.
2. SEDIMENT BASINS:
2.1. CONTROL DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES.
2.2. MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.
2.3. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION.

MS-7 CUT AND FILL SLOPES DESIGN & CONSTRUCTION. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8 CONCENTRATED RUNOFF DOWN SLOPES. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

MS-9 SLOPE MAINTENANCE. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10 STORM SEWER INLET PROTECTION. ALL STORM SEWER INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE STORMWATER CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED/ TREATED TO REMOVE SEDIMENT.

MS-11 STORMWATER CONVEYANCE PROTECTION. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12 WORK IN LIVE WATERCOURSE. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

MS-13 CROSSING LIVE WATERCOURSE. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14 REGULATION OF WATERCOURSE CROSSING. ALL APPLICABLE FEDERAL STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15 STABILIZING OF WATERCOURSE. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16 UNDERGROUND UTILITY LINE INSTALLATION. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
f. COMPLY WITH APPLICABLE SAFETY REGULATIONS.

MS-17 VEHICULAR SEDIMENT TRACKING. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS:

- a. PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE.
b. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY.
c. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

MS-18 REMOVAL OF TEMPORARY MEASURES. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

Table with 11 columns: NO., DATE, DWN., CHKD., APPD., DESCRIPTION, REVISIONS.

Mountain Valley Pipeline logo and project title: EROSION AND SEDIMENT CONTROL PLANS, MOUNTAIN VALLEY PIPELINE PROJECT -- H600 LINE, WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA, MOUNTAIN VALLEY PIPELINE, LLC, 555 SOUTHPOINTE BOULEVARD, SUITE 200, CANONSBURG, PA 15317

Tetra Tech logo and address: 661 ANDERSEN DRIVE, FOSTER PLAZA 7, PITTSBURGH, PA 15220

CONSTRUCTION PLANS

Form with fields: DRAWN BY: KAL, CHECKED BY: HT, APPROVED BY: RE, DATE: 2/19/2016, SCALE: AS SHOWN, and a REVISION triangle.

