DIVISION 2- SITE WORK

SECTION 02020

EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.01 SCOPE

A. The work in this section shall include, but is not limited to, construction and maintenance of erosion control measures, temporary vegetation covers, removal of dust and sediment from streets and other measures to prevent and control erosion and sedimentation.

B. All work shown on the drawings and specified herein shall be performed in accordance with the *Virginia Erosion and Sediment Control Handbook* (latest edition) and local ordinances.

C. The Contractor shall finalize and implement the Stormwater Pollution Prevention Plan (SWPPP) attached at the end of this specification. The Contractor shall create and maintain all reports required by the SWPPP and shall maintain the reports at the site and as directed under the conditions of the SWPPP.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Materials including silt fence and inlet protection devices used for erosion and sediment control shall be in accordance with the *Virginia Erosion and Sediment Control Handbook* (latest addition).

PART 3 – EXECUTION

3.01 EROSION CONTROL

A. It shall be the Contractor's responsibility to schedule his operations and perform the work in such a manner as to minimize soil erosion, from whatever cause, due to his operations.

B. All construction work shall be conducted with a minimum of disturbance of the land area affected.

C. Erosion control measures shall be placed prior to or as the first step in excavation and grading.

D. All temporary earth berms, diversions, and silt dams shall be machine compacted and seeded and mulched for temporary vegetative cover immediately after being constructed.

E. All underground pipe or utility lines in non-paved areas shall be seeded and mulched for temporary or permanent vegetative cover within 7 calendar days after backfilling. No more than 500 feet of trench are to be open at any one time.

F. Any area denuded after November 1st shall be seeded with oats, Abruzzi rye, or other approved vegetation and mulched within 14 days after completion of grading.

G. No disturbed area will be denuded for more than 14 calendar days.

H. Soil stockpiles that are to remain for more than 14 days shall be seeded and mulched or protected by other temporary cover.

I. All cut and fill slopes shall be seeded and mulched within 7 days of completion of grading.

3.02 SEDIMENT CONTROL

A. It shall be the Contractor's responsibility to perform the work in such a manner as to prevent the washing of any soil, silt or debris into any adjacent water course or onto adjacent properties.

B. Sediment control measures as shown on the drawings and specified herein shall be installed as the first step in construction and shall not be removed until permanent cover is completely established and stabilized. Provide silt fence and other sediment control measures as needed and/or as directed by the Owner in addition to any measures shown on the drawings

C. In general, surface drainage from within the construction site and from borrow, waste and storage areas shall, if turbidity producing materials are present, be contained in suitable sediment catchment basins or ponds. If judged necessary by the Engineer, other temporary erosion and sediment control measures such as berms, dikes and drains shall be provided and maintained by the Contractor.

3.03 MAINTENANCE

A. Erosion and siltation control measures shall be inspected daily by the site superintendent. Any damage to physical measures shall be repaired as soon as possible with temporary repair and protection from further damage completed by the close of the working day.

B. Broom sweep and/or machine sweep streets, sidewalks and other paved surfaces regularly to remove sediment.

3.04 LIABILITY

A. The Contractor agrees to hold the Owner or any of its agents harmless from any and all liability or damage that may arise out of a violation of the Erosion and Sediment Control regulations and agrees to indemnify them against any loss.

END OF SECTION

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Appendix A: **SWPPP Template – Authorized States**

Instructions

To help you develop the narrative section of your construction site SWPPP, the U.S Environmental Protection Agency (EPA) has created this electronic SWPPP template. The template is designed to help guide you through the SWPPP development process and help ensure that your SWPPP addresses all the necessary elements stated in your construction general permit. You should use this template with EPA's guidance on *Developing Your Stormwater Pollution Prevention Plan.* Both are available on EPA's website at www.epa.gov/npdes/swpppguide

This template covers the SWPPP elements that most state construction general permits require, however, **you are strongly encouraged to customize this template. There are two major reasons to customize this template:**

- **To reflect the terms and conditions of your construction general permit; and**
- **To reflect the conditions at your site**

Some states might have their own SWPPP template. If so, use the state-suggested format. In such cases, this document and its template might provide useful background information.

Using the SWPPP Template

Each section of this template includes "instructions" and space for project information. You should read the instructions for each section before you complete that section. This template was developed in Word so that you can easily add tables and additional text. Some sections may require only a brief description while others may require several pages of explanation.

Tips for completing the SWPPP template

- If there is more than one construction operator for your project, consider coordinating development of your SWPPP with the other operators.
- Multiple operators may share the same SWPPP, but make sure that responsibilities are clearly described.
- Modify this SWPPP template so that it addresses the requirements in your construction general permit **and** meets the needs of your project. Consider adding permit citations in the SWPPP when you address a specific permit requirement.

Stormwater Pollution Prevention Plan

for:

East End Water System Improvements Project
301-323 E Washington St.
Middleburg, VA 20117

Operator(s):

Middleburg Town Department of Utilities
10 W. Marshal Street
Woodbridge, VA 20118
540-687-5152

SWPPP Contact(s):

Contractor

Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

SWPPP Preparation Date:

7/01/2015

Estimated Project Dates:

Project Start Date: ___/___/_____ TBD
Project Completion Date: ___/___/_____ TBD

Contents

SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information

Project/Site Name: East End Water System Improvements Project

Project Street/Location: On Washington St. between 301-323 E and on N Pinckney .

City: Middleburg State: VA ZIP Code: 20117

County or Similar Subdivision: Loudoun County

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Latitude:	Longitude:
1. _38_ ° _58_ ' _15_" N (degrees, minutes, seconds)	1._77_ °_43_'_20_" W (degrees, minutes, seconds)
2. _ _ ° _ _. _ _ ' N (degrees, minutes, decimal)	2. _ _ ° _ _. _ _ ' W (degrees, minutes, decimal)
3. _ _ . _ _ _ _ ° N (decimal)	3. _ _ . _ _ _ _ ° W (decimal)

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____) ☐ EPA Web site ☐ GPS

☒ Other (please specify): Google Earth

Is the project located in Indian country? ☐ Yes ☒ No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable."_____

Is this project considered a federal facility? ☐ Yes ☒ No

NPDES project or permit tracking number*:_____

**(This is the unique identifying number assigned to your project by your permitting authority after you have applied for coverage under the appropriate National Pollutant Discharge Elimination System (NPDES) construction general permit.)*

1.2 Contact Information/ Responsible Parties

Operator(s): *PWCSA*
Middleburg Town Department of Utilities
10 W. Marshall Street

Middleburg, VA 20118
540-687-5152

Project Manager(s) or Site Supervisor(s): *Contractor*
Insert Company or Organization Name:
Insert Name:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:
Insert area of control (if more than one operator at site) :
Repeat as necessary

SWPPP Contact(s): *Contractor*
Insert Company or Organization Name:
Insert Name:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:
Insert area of control (if more than one operator at site) :

Middleburg Town Department of Utilities
10 W. Marshall Street
Middleburg, VA 20118
540-687-5152

This SWPPP was Prepared by:

Whitman, Requardt, and Associates, LLP
Dean Westman, P.E.
3701 Pender Dr. Suite 450
Fairfax, VA 22030
703-293-7402
dwestman@wrallp.com

Contractor

Subcontractor(s): *Contractor*

Insert Company or Organization Name:
Insert Name:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:
Repeat as necessary

Emergency 24-Hour Contact: *Contractor*

Insert Company or Organization Name:
Insert Name:
Insert Telephone Number:

1.3 Nature and Sequence of Construction Activity

The purpose of this project is to install 750 feet of 8-inch PVC in the right of way of East Washington Street and the installation of 300 feet of 8-inch PVC in North Pinckney street. For more information refer to Civil Drawings.

What is the function of the construction activity?

☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction ☒ Linear Utility

☐ Other (please specify):

Estimated Project Start Date: ___/___/_____TBD

Estimated Project Completion Date: ___/___/_____TBD

1.4 Soils, Slopes, Vegetation, and Current Drainage Patterns

A review of the Natural Resources Conservation Service (NRCS) Web Soil Survey mapper, reveals that Middleburg silt loam, Tankerville, Philomont, and Udorthent are the soil types present within the project area (NRCS, 2014). These soil types are primarily loam soils that are well drained.

According to the NRCS, erodeability for the soils listed above generally range from slight to moderate. These ratings indicate the hazard of soil loss from disturbance activity that exposes the soil surface. A rating of "slight" indicates that erosion is unlikely under climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; and "severe" indicates that erosion is very likely and that erosion-control measures, including re-vegetation of bare areas is advised.

The slopes within the project area are generally 2-15 percent. Existing site runoff of the project site flows northeast and east into Wancopin Creek. Installation of the PVC water main will not change the grade of the soil within the project limits. Soil will be returned to the existing conditions after construction.

The existing soil conditions support a mix of mature trees and undergrowth vegetation. Residential developments surround the immediate project site area with forested land occurring before the Wancopin Creek and tributary.

1.5 Construction Site Estimates

The following are estimates of the construction site.

Total project area:	0.3 acres
Construction site area to be disturbed:	0.13 acres
Percentage impervious area before construction:	50 %
Runoff coefficient before construction:	0.8
Percentage impervious area after construction:	50 %
Runoff coefficient after construction:	0.8

1.6 Receiving Waters

The East End Water System Improvement project is located within the Upper Goose Creek, hydrological unit code (HUC) 0207000805. The named receiving water is Wancopin Creek, a tributary of Little Creek, which flows north into Goose Creek and then discharges into the

Potomac River. Wancopin Creek is located approximately 850 feet to the east-northeast of the project area.

A search of the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory shows the presence freshwater forested/shrub wetland, freshwater emergent wetland, and freshwater ponds northeast and east of the project site along Wancopin Creek.

A review of the Virginia Department of Environmental Quality's (DEQ) listed Section 305(b) / 303(d) waters for the Middle Potomac-Catoctin subbasin, HUC 02070008, indicates that Wancopin Creek is listed as an impaired for aquatic life due to benthic-macroinvertebrate bioassessments/5A (A05R-01-BEN-Wancopin Creek) beginning just upstream from (south of) Route 50 and continues downstream until the confluence with Goose Creek (DEQ, 2014). No other impairments of streams and tributaries in the project vicinity were found.

1.7 Site Features and Sensitive Areas to be Protected

Site Feature and Sensitive areas: None

Description of unique features that are to be preserved: None

Describe measures to protect these features: Not Applicable

1.8 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:

- Utility trench excavation
- Asphalt and paving.
- Disturbance of unpaved areas
- Seeding of areas
- Stock piles of excavated materials

Potential pollutants and sources, other than sediment, to stormwater runoff:

Trade Name Material	Stormwater Pollutants	Location
Asphalt	Oil, petroleum distillates.	Driveway
Gas	Naphtha	N/A
Diesel Fuel	Petroleum distillate, oil and grease, naphthalene, & xylenes.	Staging area and temporary sewage diversion pumping system operations.

Fertilizers	Nitrogen and phosphorous.	Newly seeded areas.
Lime	Calcium oxide plus magnesium oxide.	Newly seeded areas.

1.9 Endangered Species Certification

Are endangered or threatened species and critical habitats on or near the project area?
☐ Yes ☒ No

The Virginia Department of Conservation and Recreation (DCR) – Natural Heritage Program and the Virginia Department of Game and Inland Fisheries (DGIF) databases were queried and the United States Fish and Wildlife Service (USFWS), Virginia Field Office, Project Reviews in Virginia process was followed to determine the potential for rare, endangered, and threatened species within the project vicinity.

A search of the DGIF database, the Virginia Fish and Wildlife Information Service, determined that the state threatened green floater (*Lasmigona subviridis*) was present within 2-miles of the project area (DGIF, 2015). This freshwater mussel is not expected to be impacted as part of this project since all disturbance is within the VDOT right-of-way. The closest stream, Wancopin Creek, is located approximately 850 feet to the east-northeast of the project area. No stream crossings are proposed. All erosion and sediment control practices will be adhered to in order to prevent release of sediments to waterways.

A search of the DCR Natural Heritage Program database was performed for the Middle Potomac-Catoctin watershed (HUC-8: 02070008), and the Goose Creek-Wancopin Creek subwatershed (HUC-12: 020700080505) (VAHU6: PL10) (DCR, 2015). The DCR Natural Heritage Program database reveals the same state threatened species, the green floater, as the only threatened or endangered species within the subwatershed. No impacts to this freshwater mussel are anticipated as no stream crossings are proposed for this project.

The USFWS, Virginia Field Office, Project Reviews in Virginia database was reviewed in order to determine if federally listed threatened or endangered species are located within the project vicinity. The USFWS lists the northern long-eared bat (*Myotis septentrionalis*) as the only federally listed threatened and endangered species within the project vicinity (USFWS, 2015). The northern long eared bat was listed as federally threatened on April 2, 2015. This species is located throughout Virginia. The habitat of this bat species includes roosting in cavities and underneath bark in the summer and hibernating in caves and mines in the winter. Since no trees or other cavities are anticipated to be impacted as part of this project, no impacts to the northern long-eared bat are anticipated.

1.10 Historic Preservation

Are there any historic sites on or near the construction site?
☒ Yes ☐ No

Based on a search of the Virginia Department of Historic Resources' (DHR) Virginia Cultural Resource Information System four architecture resources (historical districts), four historic district properties, occur within or directly adjacent to the project site (DHR, 2015). Of the historic district property resources, however, three of these resources (259-0162-0068, 259-0162-0069, 259-0162-0144) have not been evaluated for historical listing and the fourth resource (259-0162-0070) is no longer in existence. Four architecture resources, classified as historical districts, were identified. Of the four districts three are listed as potentially eligible for historical listings: Battle of Middleburg (053-5057), Upperville Battle (030-5440), and Aldie Battlefield (053-5056). The Middleburg Historic District is listed as historical under both the National Register of Historic Places (NRHP) and Virginia Landmark Register (VLR).

All of the projected land disturbance associated with this project is anticipated to occur within VDOT right-of-way. The utility line will be installed under and adjacently south of East Washington Street, under North Pinckney Street to East Marshall Street, and under Orange Drive. The utility line is also proposed to cross to the north side of East Washington Street approximately 100 feet east of the intersection of East Washington Street with North Pinckney Street, but construction is proposed to remain in the VDOT right-of-way. All disturbances to private driveways and parking areas will be repaired to match existing conditions.

Because all disturbances are proposed to take place within or adjacent to existing roadways within the existing VDOT right-of-way, and all disturbed private driveways and parking areas will be repaired to match existing conditions, there are no anticipated impacts to historic resources.

1.11 Applicable Federal, Tribal, State or Local Programs

An erosion and sediment control plan was produced for this project that adheres to the Virginia erosion and sediment control laws and regulations and guidelines produced by DCR in the 1992 Virginia Erosion and Sediment Control Handbook. Refer to the Civil Drawings "EROSION AND SEDIMENT CONTROL NOTES AND DETAILS" and to Specification Section 02020 of the project specifications.

1.12 Maps

Engineering drawings are included in Appendix B.

SECTION 2: EROSION AND SEDIMENT CONTROL BMPS

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

BMP Description: During construction of the project, soil stockpiles shall be stabilized or protected with sediment trapping measures. The contractor is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as soil intentionally transported form the project site.	
Installation Schedule:	Prior to work
Maintenance and Inspection:	Daily.
Responsible Staff:	Contractor

2.2 Phase Construction Activity

The project will be constructed in 2 phases. In the first phase, sediment and erosion control measures will be installed. In the second phase, Sediment and Erosion control measures will be adjusted as needed and the streets within the construction zone will be reconstructed.

2.3 Control Stormwater Flowing onto and through the Project

BMP Description: Silt fence, inlet protection, rock check dam, straw bale barrier and other measures will be used to control and divert storm flow as needed.	
Installation Schedule:	Prior to start of work.
Maintenance and Inspection:	Daily and after each storm event.
Responsible Staff:	Contractor

2.4 Stabilize Soils

BMP Description: Temporary seeding and permanent seeding and sodding will be used.	
☒ ***Permanent***	☒ ***Temporary***
Installation Schedule:	As needed
Maintenance and Inspection:	Daily inspection and as needed for maintenance.
Responsible Staff:	Contractor

2.5 Protect Slopes

BMP Description: Seeding	
Installation Schedule:	As needed.
Maintenance and Inspection:	Daily.

Responsible Staff:	Contractor

2.6 Protect Storm Drain Inlets

BMP Description: Culvert inlet protection and other measures will be used as needed.	
Installation Schedule:	Prior to start of work.
Maintenance and Inspection:	Daily and as needed.
Responsible Staff:	Contractor

2.7 Establish Perimeter Controls and Sediment Barriers

BMP Description: Silt fence will be installed.	
Installation Schedule:	At start of work.
Maintenance and Inspection:	Daily and as needed.
Responsible Staff:	Contractor

2.8 Retain Sediment On-Site

***BMP Description*:** Silt fence, rock check dam, diversion dikes, wash rack and silt traps will be installed as needed.	
Installation Schedule:	Prior to start of work.
Maintenance and Inspection:	Daily and as needed.
Responsible Staff:	Contractor

2.9 Establish Stabilized Construction Exits

N/A

BMP Description: Construction entrances will be established as shown on Civil Drawings.	
Installation Schedule:	Prior to start of work.

Maintenance and Inspection:	Daily.
Responsible Staff:	Contractor

2.10 Additional BMPs

Additional BMPs will be added as shown on erosion and sediment control notes and details sheet.

SECTION 3: GOOD HOUSEKEEPING BMPS

3.1 Material Handling and Waste Management

BMP Description: All waste materials will be disposed of in metal dumpsters. Only construction site waste will be disposed into this dumpster. The dumpster will have a water tight lid and will be placed away from stormwater conveyances, streams and meet all local and state solid waste management regulations.	
Installation Schedule:	Prior to start of work.
Maintenance and Inspection:	Daily.
Responsible Staff:	Contractor
BMP Description: All hazardous waste materials will be stored in sealed shipping containers in the hazardous materials storage.	
Installation Schedule:	As needed.
Maintenance and Inspection:	Daily.
Responsible Staff:	Contractor
BMP Description: Temporary portable toilets will be provided on site. The potable toilets will be placed away from traffic flow and concentrated flow path. The toilets will have collection pans as secondary containments.	
Installation Schedule:	TBD – Prior to start of construction.
Maintenance and Inspection:	All sanitary waste will be collected on a weekly basis. Weekly inspections will be conducted to assure no leaks. Leaking toilets shall be replaced with new toilets.
Responsible Staff:	Contractor

3.2 Establish Proper Building Material Staging Areas

BMP Description: Material staging area will be located immediately adjacent to the work or at near-by off-site areas.	
Installation Schedule:	Staging area will be set up prior to construction.
Maintenance and Inspection:	Staging area will be inspected daily and after storm events.
Responsible Staff:	Contractor

3.3 Designate Washout Areas

BMP Description: Designated washout areas will be located at the construction entrances.	
Installation Schedule:	Prior to start of work.
Maintenance and Inspection:	Daily and as needed.
Responsible Staff:	Contractor

3.4 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

BMP Description: Fueling will be conducted on-site as needed	
Installation Schedule:	Equipment, vehicle maintenance, and fueling procedures will be implemented at the beginning of construction.
Maintenance and Inspection:	Inspection of equipment, vehicle storage area and fuel tanks will be conducted on a daily basis and after storm events.
Responsible Staff:	Contractor

3.5 Control Equipment/Vehicle Washing

BMP Description: All equipment vehicle washing will be performed off-site.	
Installation Schedule:	N/A
Maintenance and Inspection:	N/A
Responsible Staff:	Contractor

3.6 Spill Prevention and Control Plan

Spill Prevention and Control Procedure:

BMP Description:

1. Employee Training: All employees will be trained.
2. Vehicle Maintenance: All vehicles and equipment including subcontractors vehicles will be checked for leaking oil and fluids.
3. Hazardous material storage: Hazardous material will be stored in accordance with Section 3, Part 1 and federal, state and local regulations.
4. Spill Kits: Spill kits will be within the material storage area.
5. Spills: All spills will be cleaned up immediately upon discovery. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up for disposal at a landfill.
6. Material safety data sheet, material inventory, and emergency contact information will be maintained at the on-site project trailer.

Installation Schedule: The spill prevention and control procedures will be implemented once construction begins.

Maintenance and Inspection: All personnel will be instructed regarding the correct procedures for spill prevention and control. Notices and that state theses practices will be posted in the office trailer and the individual that manages day to day site operation will be responsible for seeing that these procedures are followed.

3.7 Any Additional BMPs

BMP Description: No additional BMPs have been identified.	
Installation Schedule:	N/A
Maintenance and Inspection:	N/A
Responsible Staff:	Contractor

3.8 Allowable Non-Stormwater Discharge Management

BMP Description: This project is in an area where there is no access to a storm sewer conveyance system or a sanitary sewer system. Construction water discharges will be sent to construction BMP.	
Installation Schedule:	N/A
Maintenance and Inspection:	N/A
Responsible Staff:	Contractor

SECTION 4: SELECTING POST-CONSTRUCTION BMPs

BMP Description: There are no post BMPs.	
Installation Schedule:	N/A
Maintenance and Inspection:	N/A
Responsible Staff:	Contractor

SECTION 5: INSPECTIONS

5.1 Inspections

1. ***Inspection Personnel:*** Identify the person(s) who will be responsible for conducting inspections and describe their qualifications:

   Contractor will be responsible for site compliance with this SWPPP and the commonwealth of Virginia General Permit for discharges of Storm water from construction activities. Contractor will conduct inspections for all areas of the site disturbed by construction activity, areas used for storage of material that are exposed to precipitation, discharge points and construction entrances/exits.

2. ***Inspection Schedule and Procedures:***

   Describe the inspection schedules and procedures you have developed for your site (include frequency of inspections for each BMP or group of BMPs, indicate when you will inspect, e.g., before/during/and after rain events, spot inspections):

   Inspections will be conducted (1) at least every days and within 48 hours following any runoff producing storm event. Where areas have been temporarily stabilized or runoff is unlikely due to winter conditions (e/g/, the site is covered with snow or ice, or frozen ground exists) such inspection will be conducted at least once every month.

   Any correction actions that are identified by the contractor, during the inspection will be reported. All corrective actions will be initiated within 24 hours of the report and maintenance will be completed as soon as possible or before the next storm event.

   Describe the general procedures for correcting problems when they are identified. Include responsible staff and time frames for making corrections:

   Attach a copy of the inspection report you will use for your site.

   See Appendix E – Inspection Report

5.2 Delegation of Authority

Duly Authorized Representative(s) or Position(s):

Contractor:
Project Manager:
Project Superintendent:
Address TBD:

See Appendix K – Delegation of Authority.

5.3 Corrective Action Log

Corrective Action Log:
See Appendix F – Corrective Action Log

SECTION 6: RECORDKEEPING AND TRAINING

6.1 Recordkeeping

Records will be retained for a minimum period of at least 3 years after the permit is terminated.

Date(s) when major grading activities occur:
See Appendix I - Grading and Stabilization Activities Log
Date(s) when construction activities temporarily or permanently cease on a portion of the site:
See Appendix I – Grading and Stabilization Activities Log
Date(s) when an area is either temporarily or permanently stabilized:
See Appendix I – Grading and Stabilization Activities Log

6.2 Log of Changes to the SWPPP

Log of changes and updates to the SWPPP
See Appendix G – SWPPP Amendment Log

6.3 Training

Individual(s) Responsible for Training:
TBD by Contractor

Describe Training Conducted:

- General stormwater and BMP awareness training for staff and subcontractors:

  Contractor will conduct training for all staff, including subcontractors on the site as necessary. The training will focus on avoiding damage to stormwater BMPs and preventing illicit discharges. Training will be conducted as necessary and may address the following topics: Erosion Control BMPs , Sediment Control BMPs, Non-Stormwater BMPs, Waste Management and Material Storage BMPs, and Emergency Procedures specific to the construction site

- Detailed training for staff and subcontractors with specific stormwater responsibilities:

  Contractor will provide formal training for all staff and subcontractors with specific stormwater responsibilities, such as installing and maintaining BMPs. The formal training will cover all design and construction specifications for installing the BMPs and proper procedures from maintaining each BMP. Formal training will occur before any BMPs are installed on the site.

SECTION 7: FINAL STABILIZATION

BMP Description: Final stabilization will be conducted in accordance with Section 02020 of the project specifications.	
Installation Schedule:	TBD
Maintenance and Inspection:	TBD
Responsible Staff:	Contractor

SECTION 8: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Dean Westman Title: Associate

Signature: _____ Date: July 1, 2015

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

Appendix A – Registration Statement

Appendix B – Site Mapping and Engineering Drawings

Appendix C – General Construction Permit

Appendix D – Registration Statement

Appendix E – Inspection Reports

Appendix F – Corrective Action Log (or in Part 5.3)

Appendix G – SWPPP Amendment Log (or in Part 6.2)

Appendix H – Subcontractor Certifications/Agreements

Appendix I – Grading and Stabilization Activities Log

Appendix J – Training Log

Appendix K – Delegation of Authority

Appendix A
Registration Statement

Appendix B
Site Mapping and Engineering Drawings
(To Be Added by Construction Contractor)

Appendix C
Construction General Permit

prev | next

9VAC25-880-70. General permit.

Any operator whose registration statement is accepted by the board will receive the following general permit and shall comply with the requirements contained therein and be subject to all requirements of 9VAC25-870.

General Permit No.: VAR10

Effective Date: July 1, 2014

Expiration Date: June 30, 2019

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the Virginia Stormwater Management Act and regulations adopted pursuant thereto, operators of construction activities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in State Water Control Board regulations that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, Part I - Discharge Authorization and Special Conditions, Part II - Stormwater Pollution Prevention Plan, and Part III - Conditions Applicable to All VPDES Permits as set forth herein.

PART I

DISCHARGE AUTHORIZATION AND SPECIAL CONDITIONS

A. Coverage under this general permit.

1. During the period beginning with the date of coverage under this general permit and lasting until the general permit's expiration date, the operator is authorized to discharge stormwater from construction activities.

2. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:

a. The support activity is directly related to the construction activity that is required to have

general permit coverage for discharges of stormwater from construction activities;

b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;

c. The support activity does not operate beyond the completion of the last construction activity it supports;

d. The support activity is identified in the registration statement at the time of general permit coverage;

e. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and

f. All applicable state, federal, and local approvals are obtained for the support activity.

B. Limitations on coverage.

1. Post-construction discharges. This general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed and the site, including any support activity sites covered under the general permit registration, has undergone final stabilization. Post-construction industrial stormwater discharges may need to be covered by a separate VPDES permit.

2. Discharges mixed with nonstormwater. This general permit does not authorize discharges that are mixed with sources of nonstormwater, other than those discharges that are identified in Part I E (Authorized nonstormwater discharges) and are in compliance with this general permit.

3. Discharges covered by another state permit. This general permit does not authorize discharges of stormwater from construction activities that have been covered under an individual permit or required to obtain coverage under an alternative general permit.

4. Impaired waters and TMDL limitation. Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations. In addition, the

operator shall implement the following items:

a. The impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, shall be identified in the SWPPP;

b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to surface waters identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit.

5. Exceptional waters limitation. Discharges of stormwater from construction activities not previously covered under the general permit issued in 2009 to exceptional waters identified in 9VAC25-260-30 A 3 c are not eligible for coverage under this general permit unless the operator implements the following:

a. The exceptional water(s) shall be identified in the SWPPP;

b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable

storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to exceptional waters.

6. There shall be no discharge of floating solids or visible foam in other than trace amounts.

C. Commingled discharges. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.

D. Prohibition of nonstormwater discharges. Except as provided in Parts I A 2, I C, and I E, all discharges covered by this general permit shall be composed entirely of stormwater associated with construction activities. All other discharges including the following are prohibited:

1. Wastewater from washout of concrete;

2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

4. Oils, toxic substances, or hazardous substances from spills or other releases; and

5. Soaps, solvents, or detergents used in equipment and vehicle washing.

E. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit when discharged in compliance with this general permit:

1. Discharges from firefighting activities;

2. Fire hydrant flushings;

3. Waters used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;

4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;

5. Potable water sources, including uncontaminated waterline flushings;

6. Routine external building wash down where soaps, solvents or detergents have not been

used and the wash water has been filtered, settled, or similarly treated prior to discharge;

7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;

8. Uncontaminated air conditioning or compressor condensate;

9. Uncontaminated ground water or spring water;

10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;

11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and

12. Landscape irrigation.

F. Termination of general permit coverage.

1. The operator of the construction activity shall submit a notice of termination in accordance with 9VAC25-880-60 to the VSMP authority after one or more of the following conditions have been met:

a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long term responsibility and maintenance requirements shall be recorded in the local land records prior to the submission of a notice of termination;

b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

c. Coverage under an alternative VPDES or state permit has been obtained; or

d. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

2. The notice of termination should be submitted no later than 30 days after one of the above conditions in subdivision 1 of this subsection is met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 1 b through 1 d of this subsection. Termination of authorizations to discharge for the conditions set forth in subdivision 1 a of this subsection shall be effective upon notification from the

department that the provisions of subdivision 1 a of this subsection have been met or 60 days after submittal of the notice of termination, whichever occurs first.

3. The notice of termination shall be signed in accordance with Part III K of this general permit.

G. Water quality protection.

1. The operator must select, install, implement and maintain control measures as identified in the SWPPP at the construction site that minimize pollutants in the discharge as necessary to ensure that the operator's discharge does not cause or contribute to an excursion above any applicable water quality standard.

2. If it is determined by the department that the operator's discharges are causing, have reasonable potential to cause, or are contributing to an excursion above any applicable water quality standard, the department, in consultation with the VSMP authority, may take appropriate enforcement action and require the operator to:

a. Modify or implement additional control measures in accordance with Part II B to adequately address the identified water quality concerns;

b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

c. Submit an individual permit application in accordance with 9VAC25-870-410 B 3.

All written responses required under this chapter must include a signed certification consistent with Part III K.

PART II

STORMWATER POLLUTION PREVENTION PLAN

A stormwater pollution prevention plan (SWPPP) shall be developed prior to the submission of a registration statement and implemented for the construction activity, including any support activity, covered by this general permit. SWPPPs shall be prepared in accordance with good engineering practices. Construction activities that are part of a larger common plan of development or sale and disturb less than one acre may utilize a SWPPP template provided by the department and need not provide a separate stormwater management plan if one has been prepared and implemented for the larger common plan of development or sale.

The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans such as a spill prevention control and countermeasure (SPCC) plan developed for the site under

§ 311 of the federal Clean Water Act or best management practices (BMP) programs otherwise required for the facility provided that the incorporated plan meets or exceeds the SWPPP requirements of Part II A. All plans incorporated by reference into the SWPPP become enforceable under this general permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP, the operator must develop the missing elements and include them in the SWPPP.

Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.

A. Stormwater pollution prevention plan contents. The SWPPP shall include the following items:

1. General information.

a. A signed copy of the registration statement, if required, for coverage under the general VPDES permit for discharges of stormwater from construction activities;

b. Upon receipt, a copy of the notice of coverage under the general VPDES permit for discharges of stormwater from construction activities (i.e., notice of coverage letter);

c. Upon receipt, a copy of the general VPDES permit for discharges of stormwater from construction activities;

d. A narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.);

e. A legible site plan identifying:

(1) Directions of stormwater flow and approximate slopes anticipated after major grading activities;

(2) Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed;

(3) Locations of major structural and nonstructural control measures, including sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to filter, settle, or similarly treat sediment, that will be installed between disturbed areas and the undisturbed vegetated areas in order to increase sediment removal and maximize stormwater infiltration;

(4) Locations of surface waters;

(5) Locations where concentrated stormwater is discharged;

(6) Locations of support activities, when applicable and when required by the VSMP authority, including but not limited to (i) areas where equipment and vehicle washing, wheel wash water, and other wash water is to occur; (ii) storage areas for chemicals such as acids, fuels, fertilizers, and other lawn care chemicals; (iii) concrete wash out areas; (iv) vehicle fueling and maintenance areas; (v) sanitary waste facilities, including those temporarily placed on the construction site; and (vi) construction waste storage; and

(7) When applicable, the location of the on-site rain gauge or the methodology established in consultation with the VSMP authority used to identify measurable storm events for inspection purposes.

2. Erosion and sediment control plan.

a. An erosion and sediment control plan approved by the VESCP authority as authorized under the Erosion and Sediment Control Regulations (9VAC25-840), an "agreement in lieu of a plan" as defined in 9VAC25-840-10 from the VESCP authority, or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain erosion and sediment control plan approval from a VESCP authority or does not adopt department-approved annual standards and specifications shall submit the erosion and sediment control plan to the department for review and approval.

b. All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.

c. A properly implemented approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, adequately:

(1) Controls the volume and velocity of stormwater runoff within the site to minimize soil erosion;

(2) Controls stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;

(3) Minimizes the amount of soil exposed during the construction activity;

(4) Minimizes the disturbance of steep slopes;

(5) Minimizes sediment discharges from the site in a manner that addresses (i) the amount,

frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;

(6) Provides and maintains natural buffers around surface waters, directs stormwater to vegetated areas to increase sediment removal, and maximizes stormwater infiltration, unless infeasible;

(7) Minimizes soil compaction and, unless infeasible, preserves topsoil;

(8) Ensures that stabilization of disturbed areas will be initiated immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and

(9) Utilizes outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.

3. Stormwater management plan.

a. New construction activities. A stormwater management plan approved by the VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), or an "agreement in lieu of a stormwater management plan" as defined in 9VAC25-870-10 from the VSMP authority, or a stormwater management plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain stormwater management plan approval from a VSMP authority or does not adopt department-approved annual standards and specifications shall submit the stormwater management plan to the department for review and approval.

b. Existing construction activities. Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall ensure compliance with the requirements of 9VAC25-870-93 through 9VAC25-870-99 of the VSMP Regulation, including but not limited to the water quality and quantity requirements. The SWPPP shall include a description of, and all necessary calculations supporting, all post-construction stormwater management measures that will be installed prior to the completion of the construction process to control pollutants in stormwater discharges after construction

operations have been completed. Structural measures should be placed on upland soils to the degree possible. Such measures must be designed and installed in accordance with applicable VESCP authority, VSMP authority, state, and federal requirements, and any necessary permits must be obtained.

4. Pollution prevention plan. A pollution prevention plan that addresses potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity. The pollution prevention plan shall:

a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater;

b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the site plan, reference the site plan;

c. Identify all nonstormwater discharges, as authorized in Part I E of this general permit, that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity;

d. Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity (if other than the person listed as the qualified personnel);

e. Describe the pollution prevention practices and procedures that will be implemented to:

(1) Prevent and respond to leaks, spills, and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases in accordance with Part III G;

(2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);

(3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants);

(4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash

water, and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters, or using similarly effective controls);

(5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;

(6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, and other trash or building materials;

(7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes; and

(8) Address any other discharge from the potential pollutant-generating activities not addressed above; and

f. Describe procedures for providing pollution prevention awareness of all applicable wastes, including any wash water, disposal practices, and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit. The operator shall implement the procedures described in the SWPPP.

5. SWPPP requirements for discharges to impaired waters, surface waters with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit, and exceptional waters. The SWPPP shall:

a. Identify the impaired water(s), approved TMDL(s), pollutant(s) of concern, and exceptional waters identified in 9VAC25-260-30 A 3 c, when applicable;

b. Provide clear direction that:

(1) Permanent or temporary soil stabilization shall be applied to denuded areas within seven

days after final grade is reached on any portion of the site;

(2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

(3) A modified inspection schedule shall be implemented in accordance with Part I B 4 or Part I B 5.

6. Qualified personnel. The name, phone number, and qualifications of the qualified personnel conducting inspections required by this general permit.

7. Delegation of authority. The individuals or positions with delegated authority, in accordance with Part III K, to sign inspection reports or modify the SWPPP.

8. SWPPP signature. The SWPPP shall be signed and dated in accordance with Part III K.

B. SWPPP amendments, modification, and updates.

1. The operator shall amend the SWPPP whenever there is a change in the design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP.

2. The SWPPP must be amended if, during inspections or investigations by the operator's qualified personnel, or by local, state, or federal officials, it is determined that the existing control measures are ineffective in minimizing pollutants in discharges from the construction activity. Revisions to the SWPPP shall include additional or modified control measures designed and implemented to correct problems identified. If approval by the VESCP authority, VSMP authority, or department is necessary for the control measure, revisions to the SWPPP shall be completed no later than seven calendar days following approval. Implementation of these additional or modified control measures must be accomplished as described in Part II G.

3. The SWPPP must clearly identify the contractor(s) that will implement and maintain each control measure identified in the SWPPP. The SWPPP shall be amended to identify any new contractor that will implement and maintain a control measure.

4. The operator shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:

a. A record of dates when:

(1) Major grading activities occur;

(2) Construction activities temporarily or permanently cease on a portion of the site; and

(3) Stabilization measures are initiated;

b. Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and where modified as soon as possible;

c. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;

d. All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property;

e. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;

f. Measures taken to prevent the reoccurrence of any prohibited discharge; and

g. Measures taken to address any evidence identified as a result of an inspection required under Part II F.

5. Amendments, modifications, or updates to the SWPPP shall be signed in accordance with Part III K.

C. Public Notification. Upon commencement of land disturbance, the operator shall post conspicuously a copy of the notice of coverage letter near the main entrance of the construction activity. For linear projects, the operator shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline crosses a public road). The operator shall maintain the posted information until termination of general permit coverage as specified in Part I F.

D. SWPPP availability.

1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.

2. The operator shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main

entrance of the construction site.

3. The operator shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II C. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.

E. SWPPP implementation. The operator shall implement the SWPPP and subsequent amendments, modifications, and updates from commencement of land disturbance until termination of general permit coverage as specified in Part I F.

1. All control measures must be properly maintained in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. If a site inspection required by Part II F identifies a control measure that is not operating effectively, corrective action(s) shall be completed as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority, to maintain the continued effectiveness of the control measures.

2. If site inspections required by Part II F identify an existing control measure that needs to be modified or if an additional control measure is necessary for any reason, implementation shall be completed prior to the next anticipated measurable storm event. If implementation prior to the next anticipated measurable storm event is impracticable, then alternative control measures shall be implemented as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority.

F. SWPPP Inspections.

1. Personnel responsible for on-site and off-site inspections. Inspections required by this general permit shall be conducted by the qualified personnel identified by the operator in the SWPPP. The operator is responsible for insuring that the qualified personnel conduct the inspection.

2. Inspection schedule.

a. Inspections shall be conducted at a frequency of:

(1) At least once every five business days; or

(2) At least once every 10 business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted no later than the next business day.

b. Where areas have been temporarily stabilized or land-disturbing activities will be suspended due to continuous frozen ground conditions and stormwater discharges are unlikely, the inspection frequency may be reduced to once per month. If weather conditions (such as above freezing temperatures or rain or snow events) make discharges likely, the operator shall immediately resume the regular inspection frequency.

c. Representative inspections may be utilized for utility line installation, pipeline construction, or other similar linear construction activities provided that:

(1) Temporary or permanent soil stabilization has been installed and vehicle access may compromise the temporary or permanent soil stabilization and potentially cause additional land disturbance increasing the potential for erosion;

(2) Inspections occur on the same frequency as other construction activities;

(3) Control measures are inspected along the construction site 0.25 miles above and below each access point (i.e., where a roadway, undisturbed right-of-way, or other similar feature intersects the construction activity and access does not compromise temporary or permanent soil stabilization); and

(4) Inspection locations are provided in the report required by Part II F.

3. Inspection requirements.

a. As part of the inspection, the qualified personnel shall:

(1) Record the date and time of the inspection and when applicable the date and rainfall amount of the last measurable storm event;

(2) Record the information and a description of any discharges occurring at the time of the inspection;

(3) Record any land-disturbing activities that have occurred outside of the approved erosion and sediment control plan;

(4) Inspect the following for installation in accordance with the approved erosion and sediment control plan, identification of any maintenance needs, and evaluation of effectiveness in

minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used:

(a) All perimeter erosion and sediment controls, such as silt fence;

(b) Soil stockpiles, when applicable, and borrow areas for stabilization or sediment trapping measures;

(c) Completed earthen structures, such as dams, dikes, ditches, and diversions for stabilization;

(d) Cut and fill slopes;

(e) Sediment basins and traps, sediment barriers, and other measures installed to control sediment discharge from stormwater;

(f) Temporary or permanent channel, flume, or other slope drain structures installed to convey concentrated runoff down cut and fill slopes;

(g) Storm inlets that have been made operational to ensure that sediment laden stormwater does not enter without first being filtered or similarly treated; and

(h) Construction vehicle access routes that intersect or access paved roads for minimizing sediment tracking;

(5) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for initiation of stabilization activities;

(6) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for completion of stabilization activities within seven days of reaching grade or stopping work;

(7) Inspect for evidence that the approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications has not been properly implemented. This includes but is not limited to:

(a) Concentrated flows of stormwater in conveyances such as rills, rivulets or channels that have not been filtered, settled, or similarly treated prior to discharge, or evidence thereof;

(b) Sediment laden or turbid flows of stormwater that have not been filtered or settled to remove sediments prior to discharge;

(c) Sediment deposition in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediments controls due to

improper installation, lack of maintenance, or inadequate design are considered unprotected;

(d) Sediment deposition on any property (including public and private streets) outside of the construction activity covered by this general permit;

(e) Required stabilization has not been initiated or completed on portions of the site;

(f) Sediment basins without adequate wet or dry storage volume or sediment basins that allow the discharge of stormwater from below the surface of the wet storage portion of the basin;

(g) Sediment traps without adequate wet or dry storage or sediment traps that allow the discharge of stormwater from below the surface of the wet storage portion of the trap; and

(h) Land disturbance outside of the approved area to be disturbed;

(8) Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance and effectiveness of the procedures and practices;

(9) Identify any pollutant generating activities not identified in the pollution prevention plan; and

(10) Identify and document the presence of any evidence of the discharge of pollutants prohibited by this general permit.

4. Inspection report. Each inspection report shall include the following items:

a. The date and time of the inspection and when applicable, the date and rainfall amount of the last measurable storm event;

b. Summarized findings of the inspection;

c. The location(s) of prohibited discharges;

d. The location(s) of control measures that require maintenance;

e. The location(s) of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location;

f. The location(s) where any evidence identified under Part II F 3 a (7) exists;

g. The location(s) where any additional control measure is needed that did not exist at the time of inspection;

h. A list of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection or to maintain permit compliance;

i. Documentation of any corrective actions required from a previous inspection that have not been implemented; and

j. The date and signature of the qualified personnel and the operator or its duly authorized representative.

The inspection report and any actions taken in accordance with Part II must be retained by the operator as part of the SWPPP for at least three years from the date that general permit coverage expires or is terminated. The inspection report shall identify any incidents of noncompliance. Where an inspection report does not identify any incidents of noncompliance, the report shall contain a certification that the construction activity is in compliance with the SWPPP and this general permit. The report shall be signed in accordance with Part III K of this general permit.

G. Corrective actions.

1. The operator shall implement the corrective action(s) identified as a result of an inspection as soon as practicable but no later than seven days after discovery or a longer period as approved by the VSMP authority. If approval of a corrective action by a regulatory authority (e.g., VSMP authority, VESCP authority, or the department) is necessary, additional control measures shall be implemented to minimize pollutants in stormwater discharges until such approvals can be obtained.

2. The operator may be required to remove accumulated sediment deposits located outside of the construction activity covered by this general permit as soon as practicable in order to minimize environmental impacts. The operator shall notify the VSMP authority and the department as well as obtain all applicable federal, state, and local authorizations, approvals, and permits prior to the removal of sediments accumulated in surface waters including wetlands.

PART III

CONDITIONS APPLICABLE TO ALL VPDES PERMITS

NOTE: Discharge monitoring is not required for this general permit. If the operator chooses to monitor stormwater discharges or control measures, the operator must comply with the requirements of subsections A, B, and C, as appropriate.

A. Monitoring.

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.

2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this general permit. Analyses performed according to test

procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46).

3. The operator shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

B. Records.

1. Monitoring records and reports shall include:

a. The date, exact place, and time of sampling or measurements;

b. The individual(s) who performed the sampling or measurements;

c. The date(s) and time(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

2. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the registration statement for this general permit, for a period of at least three years from the date of the sample, measurement, report or request for coverage. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the operator, or as requested by the board.

C. Reporting monitoring results.

1. The operator shall update the SWPPP to include the results of the monitoring as may be performed in accordance with this general permit, unless another reporting schedule is specified elsewhere in this general permit.

2. Monitoring results shall be reported on a discharge monitoring report (DMR); on forms provided, approved or specified by the department; or in any format provided that the date, location, parameter, method, and result of the monitoring activity are included.

3. If the operator monitors any pollutant specifically addressed by this general permit more frequently than required by this general permit using test procedures approved under 40 CFR Part

136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this general permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the department.

4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this general permit.

D. Duty to provide information. The operator shall furnish, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this general permit or to determine compliance with this general permit. The board, department, EPA, or VSMP authority may require the operator to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of surface waters, or such other information as may be necessary to accomplish the purposes of the CWA and the Virginia Stormwater Management Act. The operator shall also furnish to the board, department, EPA, or VSMP authority, upon request, copies of records required to be kept by this general permit.

E. Compliance schedule reports. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this general permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a construction activity.

G. Reports of unauthorized discharges. Any operator who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302, or § 62.1-44.34:19 of the Code of Virginia that occurs during a 24-hour period into or upon surface waters or who discharges or causes or allows a discharge that may reasonably be expected to enter surface waters, shall notify the Department of Environmental Quality of the discharge immediately upon discovery of the discharge, but in no case later than within 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department and the VSMP authority within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;

2. The cause of the discharge;

3. The date on which the discharge occurred;

4. The length of time that the discharge continued;

5. The volume of the discharge;

6. If the discharge is continuing, how long it is expected to continue;

7. If the discharge is continuing, what the expected total volume of the discharge will be; and

8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this general permit.

Discharges reportable to the department and the VSMP authority under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of unusual or extraordinary discharges. If any unusual or extraordinary discharge including a "bypass" or "upset," as defined herein, should occur from a facility and the discharge enters or could be expected to enter surface waters, the operator shall promptly notify, in no case later than within 24 hours, the department and the VSMP authority by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The operator shall reduce the report to writing and shall submit it to the department and the VSMP authority within five days of discovery of the discharge in accordance with Part III I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;

2. Breakdown of processing or accessory equipment;

3. Failure or taking out of service of some or all of the facilities; and

4. Flooding or other acts of nature.

I. Reports of noncompliance. The operator shall report any noncompliance which may adversely affect surface waters or may endanger public health.

1. An oral report to the department and the VSMP authority shall be provided within 24 hours from the time the operator becomes aware of the circumstances. The following shall be included as information that shall be reported within 24 hours under this subdivision:

a. Any unanticipated bypass; and

b. Any upset that causes a discharge to surface waters.

2. A written report shall be submitted within five days and shall contain:

a. A description of the noncompliance and its cause;

b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and

c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The department may waive the written report on a case-by-case basis for reports of noncompliance under Part III I if the oral report has been received within 24 hours and no adverse impact on surface waters has been reported.

3. The operator shall report all instances of noncompliance not reported under Part III I 1 or 2 in writing as part of the SWPPP. The reports shall contain the information listed in Part III I 2.

NOTE: The reports required in Part III G, H and I shall be made to the department and the VSMP authority. Reports may be made by telephone, email, or by fax. For reports outside normal working hours, leaving a recorded message shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

4. Where the operator becomes aware of a failure to submit any relevant facts, or submittal of incorrect information in any report, including a registration statement, to the department or the VSMP authority, the operator shall promptly submit such facts or correct information.

J. Notice of planned changes.

1. The operator shall give notice to the department and the VSMP authority as soon as possible of any planned physical alterations or additions to the permitted facility or activity. Notice is required only when:

a. The operator plans an alteration or addition to any building, structure, facility, or installation that may meet one of the criteria for determining whether a facility is a new source in 9VAC25-870-420;

b. The operator plans an alteration or addition that would significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not

subject to effluent limitations in this general permit; or

2. The operator shall give advance notice to the department and VSMP authority of any planned changes in the permitted facility or activity, which may result in noncompliance with state permit requirements.

K. Signatory requirements.

1. Registration statement. All registration statements shall be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

2. Reports, etc. All reports required by this general permit, including SWPPPs, and other information requested by the board or the department shall be signed by a person described in Part III K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part III K 1;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

c. The signed and dated written authorization is included in the SWPPP. A copy must be provided to the department and VSMP authority, if requested.

3. Changes to authorization. If an authorization under Part III K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization satisfying the requirements of Part III K 2 shall be submitted to the VSMP authority as the administering entity for the board prior to or together with any reports or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Part III K 1 or 2 shall make the following certification:

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to comply. The operator shall comply with all conditions of this general permit. Any state permit noncompliance constitutes a violation of the Virginia Stormwater Management Act and the Clean Water Act, except that noncompliance with certain provisions of this general permit may constitute a violation of the Virginia Stormwater Management Act but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for state permit termination, revocation and reissuance, or modification; or denial of a state permit renewal application.

The operator shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these

standards or prohibitions or standards for sewage sludge use or disposal, even if this general permit has not yet been modified to incorporate the requirement.

M. Duty to reapply. If the operator wishes to continue an activity regulated by this general permit after the expiration date of this general permit, the operator shall submit a new registration statement at least 90 days before the expiration date of the existing general permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing general permit.

N. Effect of a state permit. This general permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State law. Nothing in this general permit shall be construed to preclude the institution of any legal action under, or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in general permit conditions on "bypassing" (Part III U) and "upset" (Part III V), nothing in this general permit shall be construed to relieve the operator from civil and criminal penalties for noncompliance.

P. Oil and hazardous substance liability. Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law or § 311 of the Clean Water Act.

Q. Proper operation and maintenance. The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the operator to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the operator only when the operation is necessary to achieve compliance with the conditions of this general permit.

R. Disposal of solids or sludges. Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering surface waters and in compliance with all applicable state and federal laws and

regulations.

S. Duty to mitigate. The operator shall take all steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to halt or reduce activity not a defense. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

U. Bypass.

1. "Bypass," as defined in 9VAC25-870-10, means the intentional diversion of waste streams from any portion of a treatment facility. The operator may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part III U 2 and 3.

2. Notice.

a. Anticipated bypass. If the operator knows in advance of the need for a bypass, the operator shall submit prior notice to the department, if possible at least 10 days before the date of the bypass.

b. Unanticipated bypass. The operator shall submit notice of an unanticipated bypass as required in Part III I.

3. Prohibition of bypass.

a. Except as provided in Part III U 1, bypass is prohibited, and the board or department may take enforcement action against an operator for bypass unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred

during normal periods of equipment downtime or preventive maintenance; and

(3) The operator submitted notices as required under Part III U 2.

b. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three conditions listed in Part III U 3 a.

V. Upset.

1. An "upset," as defined in 9VAC25-870-10, means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based state permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based state permit effluent limitations if the requirements of Part III V 4 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.

3. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:

a. An upset occurred and that the operator can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The operator submitted notice of the upset as required in Part III I; and

d. The operator complied with any remedial measures required under Part III S.

5. In any enforcement proceeding, the operator seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and entry. The operator shall allow the department as the board's designee, the VSMP authority, EPA, or an authorized representative of either entity (including an authorized contractor), upon presentation of credentials and other documents as may be required by law to:

1. Enter upon the operator's premises where a regulated facility or activity is located or conducted,

or where records must be kept under the conditions of this general permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;

3. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and

4. Sample or monitor at reasonable times, for the purposes of ensuring state permit compliance or as otherwise authorized by the Clean Water Act or the Virginia Stormwater Management Act, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. State permit actions. State permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the operator for a state permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any state permit condition.

Y. Transfer of state permits.

1. State permits are not transferable to any person except after notice to the department. Except as provided in Part III Y 2, a state permit may be transferred by the operator to a new operator only if the state permit has been modified or revoked and reissued, or a minor modification made, to identify the new operator and incorporate such other requirements as may be necessary under the Virginia Stormwater Management Act and the Clean Water Act.

2. As an alternative to transfers under Part III Y 1, this state permit may be automatically transferred to a new operator if:

a. The current operator notifies the department at least 30 days in advance of the proposed transfer of the title to the facility or property;

b. The notice includes a written agreement between the existing and new operators containing a specific date for transfer of state permit responsibility, coverage, and liability between them; and

c. The department does not notify the existing operator and the proposed new operator of its intent to modify or revoke and reissue the state permit. If this notice is not received, the transfer

is effective on the date specified in the agreement mentioned in Part III Y 2 b.

3. For ongoing construction activity involving a change of operator, the new operator shall accept and maintain the existing SWPPP, or prepare and implement a new SWPPP prior to taking over operations at the site.

Z. Severability. The provisions of this general permit are severable, and if any provision of this general permit or the application of any provision of this state permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this general permit shall not be affected thereby.

Statutory Authority

§ 62.1-44.15:25 of the Code of Virginia.

Historical Notes

Former 4VAC50-60-1170 derived from Virginia Register Volume 21, Issue 3, eff. January 29, 2005; amended, Virginia Register Volume 25, Issue 16, eff. May 13, 2009; Volume 29, Issue 4, eff. November 21, 2012; amended and renumbered, Virginia Register Volume 30, Issue 2, eff. October 23, 2013; amended, Virginia Register Volume 30, Issue 13, eff. July 1, 2014; Volume 30, Issue 24, eff. July 1, 2014; Errata 31:1 VA.R. 68 September 8, 2014.

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prev | next | new search | table of contents | home

Appendix D
(See Appendix A)

Appendix E
Inspection Reports

Inspection Report Template

Purpose
This Inspection Report Template (or "template") was designed to assist you in preparing inspection reports for EPA's 2012 Construction General Permit (CGP). If you are covered under the 2012 CGP, this template will enable you to create an inspection report form that is customized to the specific circumstances of your project and that complies with the minimum reporting requirements of Part 4.1.7 of the permit. Note that the use of this form is optional; you may use your own inspection report form provided it includes the minimum information required in Part 4.1.7 of the CGP.

If you are covered under a state CGP, this template may be helpful in developing a form that can be used for that permit; however it will need to be modified to meet the specific requirements of that permit. If your permitting authority requires you to use a specific inspection report form, you should not use this form.

Notes:
While EPA has made every effort to ensure the accuracy of all instructions and guidance contained in the Inspection Report Template, the actual obligations of regulated construction activities are determined by the relevant provisions of the permit, not by the template. In the event of a conflict between the Inspection Report Template and any corresponding provision of the 2012 CGP, you must abide by the requirements in the permit. EPA welcomes comments on the Inspection Report Template at any time and will consider those comments in any future revision of this document. You may contact EPA for CGP-related inquiries at cgp@epa.gov.

Overview of Inspection Requirements
Construction operators covered under the 2012 CGP are subject to the following requirements in Part 4:

Inspection Frequency (see Part 4.1.4)
You are required to conduct inspections either:
- Once every 7 calendar days; or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Your inspection frequency is increased if the site discharges to a sensitive water. See Part 4.1.3. Your inspection frequency may be decreased to account for stabilized areas, or for arid, semi-arid, or drought-stricken conditions, or for frozen conditions. See Part 4.1.4.

Areas That Need to Be Inspected (see Part 4.1.5)
During each inspection, you must inspect the following areas of your site:
- Cleared, graded, or excavated areas of the site;
- Stormwater controls (e.g., perimeter controls, sediment basins, inlets, exit points etc.) and pollution prevention practices (e.g., pollution prevention practices for vehicle fueling/maintenance and washing, construction product storage, handling, and disposal, etc.) at the site;
- Material, waste, or borrow areas covered by the permit, and equipment storage and maintenance areas;
- Areas where stormwater flows within the site;
- Stormwater discharge points; and
- Areas where stabilization has been implemented.

What to Check For During Your Inspection (see Part 4.1.6)
During your site inspection, you are required to check:
- Whether stormwater controls or pollution prevention practices require maintenance or corrective action, or whether new or modified controls are required;
- For the presence of conditions that could lead to spills, leaks, or other pollutant accumulations and discharges;
- Whether there are visible signs of erosion and sediment accumulation at points of discharge and to the channels and streambanks that are in the immediate vicinity of the discharge;
- If a stormwater discharge is occurring at the time of the inspection, whether there are obvious, visual signs of pollutant discharges; and
- If any permit violations have occurred on the site.

Inspection Reports (see Part 4.1.7)
Within 24 hours of completing each inspection, you are required to complete an inspection report that includes:
- Date of inspection;

- Names and titles of persons conducting the inspection;
- Summary of inspection findings;
- Rain gauge or weather station readings if your inspection is triggered by the 0.25 inch storm threshold; and
- If you determine that a portion of your site is unsafe to access for the inspection, documentation of what conditions prevented the inspection and where these conditions occurred on the site

Instructions for Using This Template

This Electronic Version of the Inspection Report Template is intended to be filled out electronically. If you will be filling out the Inspection Report Template by hand (i.e., you will be filling this form out in the field), please use the Field Version of the Inspection Report Template available at www.epa.gov/npdes/stormwater/swppp.

Keep in mind that this document is a template and not an "off-the-shelf" inspection report that is ready to use without some modification. You must first customize this form to include the specifics of your project in order for it to be useable for your inspection reports. The template includes text fields that direct you to populate the form with your specific site information (e.g., specific BMPs installed at your site, specific locations where they are installed). Once you have entered all of your site-specific information into these fields, you may use the completed form to complete inspection reports.

The following tips for using this template will help you ensure that the minimum permit requirements are met:

- **Review the inspection requirements.** Before you start developing your inspection report form, read the CGP's Part 4 inspection requirements. This will ensure that you have a working understanding of the permit's underlying inspection requirements.
- **Complete all required text fields.** Fill out all text fields (marked with blue font). Only by filling out all fields will the template be compliant with the requirements of the permit. (Note: Where you do not need the number of rows provided in the template form for your inspection, you may delete these as you see fit. Or, if you need more space to document your findings, you may insert additional rows.) Specific instructions on what information to include in each text field is included in each text field. The fields were developed so that the instructions disappear once you start typing.
- **Use your site map to document inspection findings.** In several places in the template, you are directed to specify the location of certain features of your site, including where stormwater controls are installed and where you will be stabilizing exposed soil. You are also asked to fill in location information for unsafe conditions and the locations of any discharges occurring during your inspections. Where you are asked for location information, EPA encourages you to reference the point on your SWPPP site map that corresponds to the requested location on the inspection form. Using the site map as a tool in this way will help you conduct efficient inspections, will assist you in evaluating problems found, and will ensure proper documentation.
- **Sign and certify each inspection report.** Each inspection report must be signed and certified by the permittee to be considered complete. Where your inspections are carried out by a contractor or subcontractor, it is recommended that you also have the form signed and certified by the inspector, in addition to the signature and certification required of the permitted operator. The template includes a signature block for both parties.
- **Include the inspection form with your SWPPP.** Once your form is complete, make sure to include a copy of the inspection form in your SWPPP in accordance with Part 7.2.12.4 of the CGP.
- **Retain copies of all inspection reports with your records.** You must also retain in your records copies of all inspection reports in accordance with the requirements in Part 4.1.7.3 of the 2012 CGP. These reports must be retained for at least 3 years from the date your permit coverage expires or is terminated.

Section-by-Section Instructions

You will find specific instructions corresponding to each section of the report form at the end of this template. These instructions provide you with more details in terms of what EPA expects to be documented in these reports.

Appendix E – *Sample* Inspection Reports

Project Name: East End Water System Improvements Project
CGP Tracking No.:
Inspection Date:

General Information	
Inspector Name, Title & Contact Information	
Present Phase of Construction	
Inspection Location	

Inspection Frequency *(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply.)*

Standard Frequency: ☐ Weekly ☐ Every 14 days and within 24 hours of a 0.25" rain

Increased Frequency: ☐ Every 7 days and within 24 hours of a 0.25" rain (for areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3)

Reduced Frequency:
- ☐ Once per month (for stabilized areas)
- ☐ Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)
- ☐ Once per month (for frozen conditions where earth-disturbing activities are being conducted)

Was this inspection triggered by a 0.25" storm event? ☐ Yes ☐ No

If yes, how did you determined whether a 0.25" storm event has occurred?

☐ Rain gauge on site ☐ Weather station representative of site. Specify weather station source:

Total rainfall amount that triggered the inspection:

Unsafe Conditions for Inspection

Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.1.5? ☐ Yes ☐ No

If "yes", complete the following:
- Describe the conditions that prevented you from conducting the inspection in this location:
- Location where conditions were found:

Project Name: East End Water System Improvements Project
CGP Tracking No.:
Inspection Date:

Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.1)				
Type/Location of E&S Control	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?**	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes:**
1.	☐Yes ☐No	☐Yes ☐No		
2.	☐Yes ☐No	☐Yes ☐No		
3.	☐Yes ☐No	☐Yes ☐No		
4.	☐Yes ☐No	☐Yes ☐No		
5.	☐Yes ☐No	☐Yes ☐No		
6.	☐Yes ☐No	☐Yes ☐No		
7.	☐Yes ☐No	☐Yes ☐No		
8.	☐Yes ☐No	☐Yes ☐No		
9.	☐Yes ☐No	☐Yes ☐No		

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 3) One of the prohibited discharges in Part 2.3.1 is occurring or has occurred; or 4) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.2. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at www.epa.gov/npdes/stormwater/swppp. See Part 5 of the permit for more information.

Appendix E – *Sample* Inspection Reports

Project Name: East End Water System Improvements Project
CGP Tracking No.:
Inspection Date:

Condition and Effectiveness of Pollution Prevention (P2) Practices (CGP Part 2.3)				
Type/Location of P2 Practices [insert additional rows if applicable]	**Repairs or Other Maintenance Needed?**	**Corrective Action Required?**	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes**
1.	☐Yes ☐No	☐Yes ☐No		
2.	☐Yes ☐No	☐Yes ☐No		
3.	☐Yes ☐No	☐Yes ☐No		
4.	☐Yes ☐No	☐Yes ☐No		
5.	☐Yes ☐No	☐Yes ☐No		
6.	☐Yes ☐No	☐Yes ☐No		
7.	☐Yes ☐No	☐Yes ☐No		
8.	☐Yes ☐No	☐Yes ☐No		
9.	☐Yes ☐No	☐Yes ☐No		

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 3) One of the prohibited discharges in Part 2.3.1 is occurring or has occurred; or 4) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.2. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at www.epa.gov/npdes/stormwater/swppp. See Part 5 of the permit for more information.

Project Name: East End Water System Improvements Project
CGP Tracking No.:
Inspection Date:

Stabilization of Exposed Soil (CGP Part 2.2)			
Stabilization Area:	**Stabilization Method**	**Have You Initiated Stabilization?**	**Notes:**
1.		☐ YES, Date: ☐ NO	
2.		☐ YES, Date: ☐ NO	
3.		☐ YES, Date: ☐ NO	
4.		☐ YES, Date: ☐ NO	
5.		☐ YES, Date: ☐ NO	

Description of Discharges (CGP Part 4.1.6.6)	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? ☐ Yes ☐ No **If "yes", provide the following information for each point of discharge:**	
Discharge Location [insert additional discharge locations if applicable]	**Observations**
1.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
1.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

Project Name: East End Water System Improvements Project
CGP Tracking No.:
Inspection Date:

Contractor or Subcontractor Certification and Signature
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
Signature of Contractor or Subcontractor: _____ **Date:**
Printed Name and Affiliation: _____

Certification and Signature by Permittee
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
Signature of Permittee or "Duly Authorized Representative": _____ **Date:**
Printed Name and Affiliation: _____

Instructions for Filling Out "General Information" Section on Page 1

Inspector Name, Title & Contact Information
Provide the name of the person(s) (either a member of your company's staff or a contractor or subcontractor) that conducted this inspection. Provide the inspector's name, title, and contact information as directed in the form.

Present Phase of Construction
If this project is being completed in more than one phase, indicate which phase it is currently in.

Inspection Location
If your project has multiple locations where you conduct separate inspections, specify the location where this inspection is being conducted. If only one inspection is conducted for your entire project, enter "Entire Site." If necessary, complete additional inspection report forms for each separate inspection location.

Inspection Frequency
Check the box that describes the inspection frequency that applies to you. Note that you may be subject to different inspection frequencies in different areas of your site. If your project does not discharge to a "sensitive water" (i.e., impaired for sediment or nutrients, or listed as Tier 2, 2.5, or 3 by your state or tribe) and you are not affected by any of the circumstances described in CGP Part 4.1.4, then you can choose your frequency based on CGP Part 4.1.2 – either weekly, or every other week and within 24 hrs of a 0.25 in storm event. For any portion of your site that discharges to a sensitive water, your inspection frequency is fixed under CGP Part 4.1.3 at weekly and within 24 hrs of a 0.25 in storm event. If portions of your site are stabilized, are located in arid, semi-arid, or drought-stricken areas, or are subject to frozen conditions, consult CGP Part 4.1.4 for the applicable inspection frequency. Check all the inspection frequencies that apply to your project.

Was This Inspection Triggered by a 0.25 Inch Storm Event?
If you were required to conduct this inspection because of a 0.25 inch (or greater) rain event, indicate whether you relied on an on-site rain gauge or a nearby weather station (and where the weather station is located). Also, specify the total amount of rainfall for this specific storm event.

Unsafe Conditions for Inspection
Inspections are not required where a portion of the site or the entire site is subject to unsafe conditions. See CGP Part 4.1.5. These conditions should not regularly occur, and should not be consistently present on a site. Generally, unsafe conditions are those that render the site (or a portion of it) inaccessible or that would pose a significant probability of injury to applicable personnel. Examples could include severe storm or flood conditions, high winds, and downed electrical wires.

If your site, or a portion of it, is affected by unsafe conditions during the time of your inspection, provide a description of the conditions that prevented you from conducting the inspection and what parts of the site were affected. If the entire site was considered unsafe, specify the location as "Entire site"

Instructions for Filling Out the "Erosion and Sediment Control" Table on Page 2

Type and Location of E&S Controls
Provide a list of all erosion and sediment (E&S) controls that your SWPPP indicates will be installed and implemented at your site. This list must include at a minimum all E&S controls required by CGP Part 2.1.2. Include also any natural buffers established under CGP Part 2.1.2.1. Buffer requirements apply if your project's earth-disturbing activities will occur within 50 feet of a surface water. You may group your E&S controls on your form if you have several of the same type of controls (e.g., you may group "Inlet Protection Measures", "Perimeter Controls", and "Stockpile Controls" together on one line), but if there are any problems with a specific control, you must separately identify the location of the control, whether repairs or maintenance or corrective action are necessary, and in the notes section you must describe specifics about the problem you observed.

Repairs or Other Maintenance Needed?
Answer "yes" if the E&S control requires a repair of any kind (due to normal wear and tear, or as a result of damage) or requires maintenance in order for the control to continue operating effectively. At a minimum, maintenance is required in the following specific instances: (1) for perimeter controls, whenever sediment has accumulated to ½ or more the above-ground height of the control (CGP Part 2.1.2.2.b); (2) where sediment has been tracked-out onto the surface of off-site streets or other paved areas (CGP Part 2.1.2.3.d); (3) for inlet protection measures, when sediment accumulates, the filter becomes clogged, and/or performance is compromised (CGP Part 2.1.2.9.b); and (4) for sediment basins, as necessary to maintain at least ½ of the design capacity of the basin (CGP Part 2.1.3.2.b). Note: In many cases, "yes" answers are expected and indicate a project with an active operation and maintenance program. You should also answer "yes" if work to fix the problem is still ongoing from the previous inspection.

Corrective Action Needed?
Answer "yes" if during your inspection you found any of the following conditions to be present (CGP, Part 5.2.1): (1) a required E&S control was never installed, was installed incorrectly or not in accordance with the corresponding CGP Part 2 or 3 requirement; (2) you become aware that the inadequacy of the E&S control has led to an exceedance of an applicable water quality standard; or (3) EPA requires corrective action for an E&S control as a result of a permit violation found during an inspection carried out under Part 4.2. If you answer "yes", you must take corrective action and complete a corrective action report, found at www.epa.gov/npdes/stormwater/swppp. Note: You should answer "yes" if work to fix the problem from a previous inspection is still ongoing.

Date on Which Maintenance or Corrective Action First Identified?
Provide the date on which the condition that triggered the need for maintenance or corrective action was first identified. If the condition was just discovered during this inspection, enter the inspection date. If the condition is a carryover from a previous inspection, enter the original date of the condition's discovery.

Notes
For each E&S control and the area immediately surrounding it, note whether the control is properly installed and whether it appears to be working to minimize sediment discharge. Describe any problem conditions you observed such as the following, and why you think they occurred as well as actions (e.g., repairs, maintenance, or corrective action) you will take or have taken to fix the problem:

1. Failure to install or to properly install a required E&S control
2. Damage or destruction to an E&S control caused by vehicles, equipment, or personnel, a storm event, or other event
3. Mud or sediment deposits found downslope from E&S controls
4. Sediment tracked out onto paved areas by vehicles leaving construction site
5. Noticeable erosion at discharge outlets or at adjacent streambanks or channels

6. Erosion of the site's sloped areas (e.g., formation of rills or gullies)
7. E&S control is no longer working due to lack of maintenance

For buffer areas, make note of whether they are marked off as required, whether there are signs of construction disturbance within the buffer, which is prohibited under the CGP, and whether there are visible signs of erosion resulting from discharges through the area.

If repairs, maintenance, or corrective action is required, briefly note the reason. If repairs, maintenance, or corrective action have been completed, make a note of the date it was completed and what was done. *If corrective action is required, note that you will need to complete a separate corrective action report describing the condition and your work to fix the problem.*

Instructions for Filling Out the "Pollution Prevention (P2) Practice" Table on Page 3

Type and Location of P2 Controls
Provide a list of all pollution prevention (P2) practices that are implemented at your site. This list must include all P2 practices required by Part 2.3.3, and those that are described in your SWPPP.

Repairs or Other Maintenance Needed?
Answer "yes" if the P2 practice requires a repair of any kind (due to normal wear and tear, or as a result of damage) or requires maintenance in order for the control to continue operating effectively. Note: In many cases, "yes" answers are expected and indicate a project with an active operation and maintenance program.

Corrective Action Needed?
Answer "yes" if during your inspection you found any of the following conditions to be present (CGP, Part 5.2.1): (1) a required P2 practice was never installed, was installed incorrectly or not in accordance with the corresponding CGP Part 2 requirement; (2) you become aware that the inadequacy of the P2 practice has led to an exceedance of an applicable water quality standard; (3) one of the "prohibited discharges" listed in CGP Part 2.3.1 is occurring or has occurred, or (4) EPA requires corrective action for a P2 practice as a result of a permit violation found during an inspection carried out under Part 4.2. If you answer "yes", you must take corrective action and complete a corrective action report, found at www.epa.gov/npdes/stormwater/swppp. Note: You should answer "yes" if work to fix the problem from a previous inspection is still ongoing.

Date on Which Maintenance or Corrective Action First Identified?
Provide the date on which the condition that triggered the need for maintenance or corrective action was first identified. If the condition was just discovered during this inspection, enter the inspection date. If the condition is a carryover from a previous inspection, enter the original date of the condition's discovery.

Notes
For each P2 control and the area immediately surrounding it, note whether the control is properly installed, whether it appears to be working to minimize or eliminate pollutant discharges, and whether maintenance or corrective action is required. Describe problem conditions you observed such as the following, and why you think they occurred, as well as actions you will take or have taken to fix the problem:

1. Failure to install or to properly install a required P2 control
2. Damage or destruction to a P2 control caused by vehicles, equipment, or personnel, or a storm event
3. Evidence of a spill, leak, or other type of pollutant discharge, or failure to have properly cleaned up a previous spill, leak, or other type of pollutant discharge

4. Spill response supplies are absent, insufficient, or not where they are supposed to be located
5. Improper storage, handling, or disposal of chemicals, building materials or products, fuels, or wastes
6. P2 practice is no longer working due to lack of maintenance

If repairs, maintenance, or corrective action is required, briefly note the reason. If repairs, maintenance, or corrective action have been completed, make a note of the date it was completed and what was done. *If corrective action is required, note that you will need to complete a separate corrective action report describing the condition and your work to fix the problem.*

Instructions for Filling Out the "Stabilization of Exposed Soil" Table on Page 4

Stabilization Area
List all areas where soil stabilization is required to begin because construction work in that area has permanently stopped or temporarily stopped (i.e., work will stop for 14 or more days), and all areas where stabilization has been implemented.

Stabilization Method
For each area, specify the method of stabilization (e.g., hydroseed, sod, planted vegetation, erosion control blanket, mulch, rock).

Have You Initiated Stabilization
For each area, indicate whether stabilization has been initiated.

Notes
For each area where stabilization has been initiated, describe the progress that has been made, and what additional actions are necessary to complete stabilization. Note the effectiveness of stabilization in preventing erosion. If stabilization has been initiated but not completed, make a note of the date it is to be completed. If stabilization has been completed, make a note of the date it was completed. If stabilization has not yet been initiated, make a note of the date it is to be initiated, and the date it is to be completed.

Instructions for Filling Out the "Description of Discharges" Table on Page 4

You are only required to complete this section if a discharge is occurring at the time of the inspection.

Was a Stormwater Discharge Occurring From Any Part of Your Site At The Time of the Inspection?
During your inspection, examine all points of discharge from your site, and determine whether a discharge is occurring. If there is a discharge, answer "yes" and complete the questions below regarding the specific discharge. If there is not a discharge, answer "no" and skip to the next page.

Discharge Location (repeat as necessary if there are multiple points of discharge)
Location of discharge. Specify the location on your site where the discharge is occurring. The location may be an outlet from a stormwater control or constructed stormwater channel, a discharge into a storm sewer inlet, or a specific point on the site. Be as specific as possible; it is recommended that you refer to a precise point on your site map.

Describe the discharge. Include a specific description of any noteworthy characteristics of the discharge such as color; odor; floating, settled, or suspended solids; foam; oil sheen; and other obvious pollution indicators.

Are there visible signs of erosion or sediment accumulation? At each point of discharge and the channel and streambank in the immediate vicinity, visually assess whether there are any obvious signs of erosion and/or sediment accumulation that can be attributed to your discharge. If you answer "yes", include a description in the space provided of the erosion and sediment deposition that you have found, specify where on the site or in the surface water it is found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue.

Instructions for Signature/Certification on Page 5

Each inspection report must be signed and certified to be considered complete.

Contractor or Subcontractor Signature and Certification
Where a contractor or subcontractor is relied on to carry out the inspection and complete the inspection report, you should require the inspector to sign and certify each report. Note that this does not relieve the permitted operator of the requirement to sign and certify the inspection report as well.

Signature and Certification by Permittee
At a minimum, the inspection report must be signed by either (1) the person who signed the NOI, or (2) a duly authorized representative of that person. The following requirements apply to scenarios (1) and (2):

If the signatory will be the person who signed the NOI for permit coverage, as a reminder, that person must be one of the following types of individuals:

- *For a corporation*: A responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- *For a partnership or sole proprietorship*: A general partner or the proprietor, respectively.
- *For a municipality, state, federal, or other public agency*: Either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

If the signatory will be a duly authorized representative, the following requirements must be met:

- The authorization is made in writing by the person who signed the NOI (see above);
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

Appendix F
Corrective Action Log

Appendix F – *Sample* Corrective Action Log

Project Name: East End Water System Improvements Project
SWPPP Contact:

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible person

Appendix G
SWPPP Amendment Log

Appendix G – *Sample* SWPPP Amendment Log

Project Name: East End Water System Improvements Project
SWPPP Contact:

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix H

Subcontractor Certifications/Agreements

Appendix H – *Sample* Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: East End Water System Improvements Project

Operator(s): Town of Middleburg Department of Utilities

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix I

Grading and Stabilization Activities Log

Appendix I – *Sample* Grading and Stabilization Activities Log

Project Name: East End Water System Improvements Project
SWPPP Contact:

Date Grading Activity Initiated	Description of Grading Activity	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures are Initiated	Description of Stabilization Measure and Location

Appendix J
Training Log

Appendix J – *Sample* SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name: East End Water System Improvements Project

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Erosion Control BMPs**
- ❑ **Emergency Procedures**
- ❑ **Sediment Control BMPs**
- ❑ **Good Housekeeping BMPs**
- ❑ **Non-Stormwater BMPs**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix K
Delegation of Authority

Appendix K – *Sample* Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in _____ (Reference State Permit), and that the designee above meets the definition of a "duly authorized representative" as set forth in _____ (Reference State Permit).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

SECTION 02200

EARTHWORK, EXCAVATION, TRENCHING AND BACKFILLING

PART 1 – GENERAL

1.01 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the preparation of the site, excavating, trenching, drainage, pumping, sheeting, bracing, proof rolling, compacting, backfilling, grading, top soiling, seeding, mulching and protection of the work as shown on the Drawings, as herein specified, and in accordance with the STANDARD SPECIFICATIONS.

B. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.

C. The Engineer will determine whether materials that are to be used in the work are suitable or unsuitable. All excess or unsuitable materials excavated shall be removed from the site by the Contractor and disposed of at a permitted off-site disposal location of his own choosing, at his expense. Disposal shall be in accordance with State and Federal regulations, and disposition shall be "legal".

D. Related Sections:

Section 01330 SUBMITTALS
Section 02700 PAVING

1.02 QUALITY ASSURANCE

A. Codes and Standards

1. Standard Specifications

Reference in this Section to STANDARD SPECIFICATIONS or STANDARD DETAILS shall mean the following, along with the latest revision thereto, and are hereby made part of this specification. In case of conflict between the STANDARD SPECIFICATIONS or STANDARD DETAILS and this contract specification, this contract specification shall govern.

a. Virginia Department of Transportation "Road and Bridge Specifications", dated 2007, and "Road and Bridge Standards", dated 2008, with the latest incorporated revisions.

b. "Virginia Erosion and Sediment Control Handbook", dated 1993, with the latest incorporated revisions.

c. Loudoun Water Standards Specifications and Details.

2. The following American Association of State Highway and Transportation Officials (AASHTO) Standards in effect on the date bids are received form a part of this specification to the extent indicated by the following references:

M145	Classification of Soils and Soil-Aggregate Mixtures
T89	Determining the Liquid Limit of Soils
T90	Determining the Plastic Limit and Plasticity Index of Soils
T119	Slump of Portland Cement Concrete
T180	Moisture-Density Relations of Soils Using a 10-lb. Rammer and an 18-inch Drop.
T191	Density of Soil In-Place by the Sand-Cone Method
T206	Penetration Test and Split-Barrel Sampling of Soils
T238	Density of Soil and Soil-Aggregate In-Place by Nuclear Methods
T239	Moisture Content of Soil and Soil-Aggregate In Place by Nuclear Methods
T265	Laboratory Determination of Moisture Contents of Soils

3. All work shall comply with Occupational Safety and Health Regulations for Construction of the Code of Federal Regulations.

B. Supervision and Testing

1. Construction of controlled fills shall be done under continuous supervision of the Engineer. No controlled fills shall be constructed unless the Engineer or his qualified representative is on the site. Engineering testing services will be provided and paid for by the Contractor.

2. Field density tests of the compaction of fill will be made by the Contractor. Upon completion of each layer of fill in a designated area, the Contractor shall be required to allow time to perform the tests. Test results will be reported immediately to the Engineer. Where

sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests will be taken in the compacted material below the disturbed surface. In this case the Contractor shall be required to use his equipment (such as bulldozer blade) to cut out a smooth surfaced spot at any point requested by the Engineer on which to perform the test.

3. When the tests indicate that the density or moisture of any layer of fill or portion thereof is below the specified dry density or outside the specified moisture range, the particular layer or portion shall be reworked by rolling or by scarifying, wetting or drying, and rerolling as required until the required dry density and moisture content has been obtained.

4. The Contractor shall allow safe access for the Engineer to all parts of the project at all times. The Contractor shall keep the Engineer informed of all construction activity on the project and the Contractor's anticipated daily schedules.

1.03 SUBMITTALS

A. Sources of common borrow, select borrow, porous fill, furnished topsoil and flowable fill shall be submitted to the Engineer for approval.

B. Gradation curves for all common borrow, select borrow and porous fill to be used shall be submitted to the Engineer for approval.

C. Modified Proctor (AASHTO T180), Natural Moisture Content (AASHTO T265), and Atterberg Limits (AASHTO T89 and T90) test results for all proposed on-site material, common borrow material and select borrow material shall be submitted to the Engineer for approval.

D. Delivery Tickets

The Contractor shall submit delivery tickets with each load of common borrow, select borrow, porous fill and furnished topsoil brought to the site under the authorization of the Engineer showing the following information:

1. Name and location of supplier or source.
2. Type and amount of material delivered by volume and weight.
3. Test information on the material as required by the specifications.

E. Excavation Support Systems

1. For all excavations requiring sheeting and shoring, the Contractor shall submit working drawings and calculations for the design of the sheeting and shoring. The working drawings and calculations shall be certified by a professional engineer licensed to practice in the State of Virginia.

2. The Contractor shall be responsible for determining the existing subsurface conditions for the excavation support system. The Owner does not guarantee or warrant the conditions actually encountered on this project. The Owner will not be held responsible for the basis of claims by the Contractor or any other parties in the execution of the excavation support system. The Contractor's submittal of the Excavation Support System is for information purposes only.

1.04 JOB CONDITIONS

A. Subsurface Investigations

1. The Contractor shall determine to his own satisfaction the ground water conditions and character and type of soil, decomposed rock, rock and other material to be encountered in the work to be done under this Contract.

2. If the bidder wishes to have test borings for bid preparation, the bidder may make his own investigation and tests, at a time acceptable to the Owner.

B. Existing Utilities

1. The existing utilities shown on the Drawings are from available records and field surveys, including test hole information. The Contractor shall verify all information to his own satisfaction. The Contractor shall test pit existing utilities which impact construction two weeks in advance of excavation.

2. Should uncharted piping or other utilities be encountered during excavation, the Contractor shall notify the Engineer and Miss Utility immediately. The Contractor shall cooperate with the Engineer, Miss Utility, and the appropriate utility companies in keeping services and facilities in operation.

3. Utilities designated to remain in place or which serve adjacent structures are to be protected and maintained at all times during construction. Active utility lines damaged in the course of construction operations shall be repaired or replaced immediately at no cost to the Owner, the Engineer, or utility Owner.

4. The Contractor shall demolish and abandon or remove from the site existing underground utilities that are designated to be abandoned or removed in the drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Common borrow material shall meet the requirements of the AASHTO Specification Description M145 for soil groups A-1, A-2-4 or A-2-6, and shall be furnished from a specific source or sources approved in writing by the Engineer. Common borrow shall be considered as equivalent to select backfill for use in trenches in non-paved areas.

B. Select borrow material shall meet the following requirements and shall be used only where specified on the Drawings or as required by the Engineer, and shall be furnished from a specific source or sources approved in writing by the Engineer:

1. VDOT No. 21A, Type I or Type II (Dense Graded Aggregate)

C. Porous fill material shall meet the following requirements and shall be used only where specified on the Drawings or as required by the Engineer, and shall be furnished from a specific source or sources approved in writing by the Engineer:

1. VDOT No. 68 or 78 Aggregate
2. VDOT No. 21A Aggregate

D. Suitable material for fills or backfills may be from the excavations or from other sources. The material shall be free from vegetable matter, organic material, sludge, grit, trash, muck, roots, logs, stumps, frozen material or other deleterious substances. Material shall be basically earth. Rubber, ashes, cinders and other miscellaneous inorganic fill substances removed from required excavations within the project and which in the judgment of the Engineer will decompose, consolidate further, or shrink appreciably within the fill may not be incorporated in the fill. Except as otherwise specified or approved, the material shall not contain rocks or lumps larger than 6 inches in greatest dimension. No rocks or lumps larger than 3

inches in greatest dimension will be permitted within 12 inches of subgrade, or within 12 inches of pipes in all directions, or within 24 inches of any structure during backfill. The material shall not contain mica in quantities which, in the judgment of the Engineer, are sufficient to affect compaction characteristics. Materials having a maximum dry density of less than 100 pounds per cubic foot (AASHTO T180) shall not be used unless specifically approved in writing by the Engineer. Cinders, ashes, rubble and construction debris shall not be used in the work.

E. Flowable fill shall consist of a mixture of fly ash, Portland cement, fine aggregate and water and have a compressive strength of 50-200 psi.

F. Suitable material is any material meeting the quality requirements specified above, for the particular location and application specified, which is not frozen and which has a moisture content at the time it is placed that enables the material to be compacted to the density specified.

G. Unsuitable material is any material not meeting all the requirements for suitable material.

H. Topsoil shall conform to the requirements of Section 602 of the VDOT Standards as described in Part 1.02Aa. of this specification.

I. Salvaged topsoil shall be existing topsoil stripped from the site within the prescribed limits.

J. Furnished topsoil shall be the Contractor's responsibility to obtain from approved off-site sources.

PART 3 - EXECUTION

3.01 SITE PREPARATION

A. All rubble, trash, unusable and unsuitable material, pavements, concrete structures, piping, sludge, grit, etc. within areas required to be filled, excavated or graded, except as otherwise specified or shown, shall be fully removed from the site and disposed of by and at the expense of the Contractor. Such material may exist on the site. The Contractor shall obtain and pay for all necessary permits related to this disposal.

B. Set aside existing on-site materials such as topsoil for use in restoring areas over trenches and excavations.

3.02 PAVING

A. Paving shall conform to Section 02700, PAVING, of these specifications.

3.03 EXCAVATION AND SUBGRADE PREPARATION

A. Excavation for grading, pavements, trenches, utility systems and their appurtenances shall be unclassified and shall consist of the excavation of whatever material is encountered to the lines, grades, and sections shown on the Drawings and specified, including such excavation as is necessary for all ditches, curbs and other features.

B. Suitable material removed from the excavation shall be reused in the grading, filling, backfilling and preparation of subgrade for pavements, structures, and trenches and at such other places as directed, to the extent required to complete the work. The Contractor shall properly store or stockpile and protect in approved manner, all materials that are to be reused in the work. The Contractor shall replace, at his own expense, material that was suitable when excavated, which has subsequently become unsuitable because of careless, neglectful, wasteful or unprotected storage. All unsuitable or excess material removed from the excavation shall be removed from the site and disposed of by and at the expense of the Contractor except where disposal on the site is specifically provided for and approved in writing by the Engineer.

C. During construction, the grading operations shall be performed in such a manner that the excavations shall be well drained at all times. When necessary, sumps shall be provided and pumped continuously. The Contractor shall maintain and keep all ditches open and free from soil and debris while in service or until final acceptance of the work and all grading shall be done on neat, regular lines. All work shall be done in proper sequence with all other associated operations. Before any slab or surfacing is placed, all utilities to be covered shall be installed and all drainage facilities shall be installed which are required to permit free and uninterrupted flow of the surface and ground water from the site or to pumping sumps, etc.

D. Preparation of the surface: Before depositing fill material, the surface of the ground shall be cleared of all refuse, rubble, and other debris. All vegetable matter, mud, muck, sludge and unsuitable soils shall be removed from the surfaces upon which fills are to be placed and the surface shall be leveled. Openings, animal burrows, stump holes, old pipes and other holes and depressions shall be eliminated, filled or cleaned as required.

E. Where fills are made on hillsides or slopes, the slope of the original ground or rock upon which the fill is to be placed shall be plowed or scarified deeply or where the slope ratio of the original ground or rock surface is steeper than five horizontal to one vertical, the ground or rock shall be stepped or benched.

F. The areas shall then be proof rolled with a minimum of 10 passes of a large vibratory roller capable of exerting a dynamic force of at least 15 tons. Proof rolling shall be performed to densify the areas and to locate soft areas. Soft areas shall be removed, under direction of the Engineer, and replaced with controlled, compacted fill as hereinafter specified.

G. Where, in the opinion of the Engineer, unsuitable subgrade conditions are encountered under foundations, slabs, footings, pavements, structures, or utilities, a determination will be first made by the Engineer whether the condition is due to the in-situ condition, or is caused by the Contractor's construction methods.

1. Unsuitable foundation materials, which in the judgment of the Engineer are due to in-situ conditions, shall be excavated when ordered in writing by the Engineer, to the extent directed by the Engineer. All unsuitable material shall be removed to a firm bottom below subgrade elevations. The excavation below subgrade shall be refilled using suitable material as defined in PART 2 - PRODUCTS, and compacted in accordance with Paragraph 3.11, COMPACTED FILLS AND BACKFILLS. Under these conditions, payment for excavation below subgrade and backfill will be made in the manner stated in the Proposal.

2. Unsuitable foundation conditions or areas disturbed or rendered unstable, which in the judgment of the Engineer are caused by the Contractor's construction methods or equipment, shall be corrected by the Contractor to the satisfaction of the Engineer, at the expense of the Contractor. These corrections shall include the necessary excavations and backfills.

H. Where excavations for foundations, slabs, footings, pavements, structures or utilities are made to a depth below the subgrade elevations shown on the Drawings without authorization, the excess excavation shall be filled at the expense of the Contractor to the required level as described above.

I. Subgrade for all foundations, slabs, footings, pavements, structures, and utility excavations, except where otherwise noted, shall be firm, undisturbed earth/rock except where drainage courses or compacted fills

are specified or are required in areas where unsuitable material has been removed.

J. Subgrade for pipe trenches shall be 6 inches below the underside of the pipe barrel in soil and 10 inches below the pipe barrel in rock. Subgrade for structures, unless otherwise noted, shall be 6 inches below the underside of the slab. Subgrade for pavement shall be in accordance with the pavement cross-section specified on the Drawings, in Section 02700, PAVEMENT, or in the STANDARD SPECIFICATIONS.

K. Whenever a condition is encountered where subgrade is at the bottom of a structure and subgrade is part rock and part soil, the rock shall be removed to a depth of 6 inches below subgrade and replaced with suitable material as directed by the Engineer and as defined in PART 2 - PRODUCTS, and compacted in accordance with Paragraph 3.11, COMPACTED FILLS AND BACKFILLS.

3.04 DEWATERING, DRAINAGE AND PUMPING

A. The Contractor shall provide and continuously operate and maintain all temporary dewatering, drainage and pumping systems required to satisfactorily perform all work under the Contract.

B. Should soil, ground water or local conditions require dewatering systems other than ditches, sumps, and pumps, such systems shall be provided, operated and maintained at no additional cost.

C. The Contractor shall exercise every precaution to prevent flotation of any of the work constructed under this Contract, and the Contractor shall be responsible for all damage due to flotation.

D. Such grading shall be done as necessary to prevent surface water from flowing into trenches or other utility excavations, and any water accumulating therein shall be continuously removed and properly filtered to remove sediment.

E. Methods of dewatering excavations shall be at the Contractor's discretion. Continuous investigations and checks shall be made by the Contractor to assure that the dewatering system employed is functioning properly, not causing damage or settlement to adjacent surfaces or structures. Temporary pipes or flumes shall be used to carry surface water across open and/or unstabilized construction areas. The system shall be modified as required and repairs for damage caused by the system shall be the responsibility of the Contractor.

F. Portable sediment tanks, suitably sized to produce discharge that is visibly clarified from the inlet water and is in accordance with the handbook, shall be used by the Contractor as an optional method to dewater the utility trenches. The outflow shall enter a stabilized discharge course.

3.05 TEMPORARY EXCAVATION SUPPORT SYSTEM

A. The Contractor shall temporarily support the sides and ends of all excavations, where necessary or where directed by the Engineer, with braces, sheeting, shoring, stringers, trench boxes or other methods of the type, size and quality required. The Contractor will not necessarily be permitted to use any particular type of excavation support system he selects. The Contractor shall be entirely responsible for the design and adequacy of the excavation support system.

B. The temporary excavation support systems shall be removed as refilling proceeds, in a manner so as not to damage any structures, roadbed, fill or private property. If, in the judgment of the Engineer, removal of temporary excavation support systems will jeopardize any of the work performed under this Contract, or any existing facilities, the Engineer may direct the Contractor to leave all or part of the temporary excavation support systems in place.

C. There will be no extra compensation to the Contractor for use of the required temporary excavation support systems.

D. Pile driving hammers or vibratory hammers, used to drive or extract temporary excavation support systems, shall only be used when approved in writing by the Engineer. However, the Contractor shall be responsible for any damage caused by his operations involving vibrations.

3.06 RESPONSIBILITY FOR CONDITION OF EXCAVATIONS

A. The Contractor shall be entirely responsible for the condition of all excavations made by him, for the entire period of the Contract. All slides, caves or other unacceptable conditions shall be promptly corrected whenever they occur, without extra compensation.

B. The neglect, failure or refusal of the Engineer to order or approve any excavation support system shall not in any way or to any extent relieve the Contractor of any responsibility concerning the conditions of excavations or of any of his obligations under the Contract; nor shall any delay whether caused by an action or want of action on the part of the Contractor or by any action or want of action of the Owner or its agents or employees, or the Engineer, resulting in the keeping of an excavation open longer than

would otherwise have been necessary, relieve the Contractor from the necessity of properly and adequately protecting the excavation from caving or slipping, nor from any of his obligations under the Contract relating to injury of persons or property nor entitle him to any claim for extra compensation.

3.07 PROTECTION OF PROPERTY, STRUCTURES AND UTILITIES

A. The Contractor shall, at his own expense and risk, maintain, support-in-place, and protect all pipes, poles, cables, utilities, walls, buildings, and other structures or property in the vicinity of his work to the satisfaction of the Engineer and Owner, whether above or below ground, or that may appear in the excavation. The Contractor shall at all times have available on site sufficient quantity of timber, planks, beams, chains, ropes, etc., and shall use them as necessary for supporting any structures and utilities that are uncovered, undermined, endangered, threatened or weakened. The Contractor shall be responsible for all damage, shall take all risks, and shall assume all expense for injury or damage, to any person or property of every kind and description, caused directly or indirectly by the Contractor's work, whether such structures or utilities are or are not shown on the Drawings.

B. In the event that the Contractor damages any existing utility lines report thereof shall be made immediately to the Engineer. If it is determined that repairs are to be made by the Contractor, such repairs will be ordered under the appropriate clause of the STANDARD SPECIFICATIONS. Repairs shall be made to the satisfaction of the Agency.

3.08 TRENCH EXCAVATION

A. Subgrade for trenches shall be as defined in Paragraph 3.03, EXCAVATION AND SUBGRADE PREPARATION.

B. Trenches shall be excavated to the necessary widths and depths as may be shown on the Drawings. The maximum clearance between each face of trench and external surface of barrel of pipe or hubs, however, shall not be greater than indicated in the Loudoun Water STANDARD DETAILS or on the Drawings.

C. The sides of the trenches from trench subgrade to an elevation 12 inches above the crown of the pipe shall be practically plumb and under no circumstances will they be permitted to be sloped.

D. No trench length greater than 100-feet at any location shall be left open in advance of the complete pipe placed therein. The Engineer shall be

empowered, at any time, to require the backfilling of open trenches over completed pipelines or structures if, in his judgment, such action is necessary. The Contractor shall have no claim for extra compensation, even though to accomplish this backfilling, he is compelled temporarily to stop excavation or other work at any place. If work is stopped on any trench for any reasons except by order of the Engineer, and the excavation is left open for an unreasonable length of time in advance of construction, the Contractor shall, if so directed, backfill such trench at his own cost, and shall not again open this trench until he is ready to complete the construction therein. If the Contractor shall refuse or fail to backfill such trench completely within 48 hours after said notice, the Engineer shall be authorized to have the work done and the Owner shall charge the expense thereof to the Contractor and retain the same out of any moneys due or to become due him under the Contract.

E. Length of open trench shall be limited to only that length sufficient to advance the trench box or sheeting ahead of the pipe construction operation and to provide a minimum safe working distance between the backfilling operation and the pipe construction operation. No trenches are to be left open while the sight is unattended. Trenches shall be backfilled in such a manner as to not impede pedestrians or vehicles.

3.09 TRENCH BACKFILL FOR WATER MAINS

A. During backfilling, great care shall be taken not to disturb the pipes by dropping or throwing anything on them from the bank above, or by walking on top or alongside of them.

B. Trench backfill material shall meet the requirements of PART 2 - PRODUCTS.

C. Pipe bedding depth for water mains shall be from trench subgrade, 6 inches below the underside of the pipe barrel, to the centerline of the pipeline. Pipe bedding material shall be porous fill, as defined in PART 2 - PRODUCTS, and shall be thoroughly compacted by hand before laying the pipe to provide a uniform and continuous bearing and support for the pipe. Bell holes shall be excavated in the bottoms wherever necessary to permit the proper making of joints.

D. Unless otherwise noted, the backfill, from the top of the pipe bedding to one foot above the crown of the pipe, shall be compacted by hand in 6-inch layers. The backfill may include suitable material equivalent to common borrow as defined in PART 2 - PRODUCTS. However, the backfill shall not include slag. Compaction shall be in accordance with Paragraph 3.11, COMPACTED FILLS AND BACKFILLS.

E. Where full trench compaction is specified in this Section, on the Drawings, or in the Standard Specifications, backfill, from one foot above the crown of the pipe to subgrade, shall be compacted in accordance with Paragraph 3.12, COMPACTED FILLS AND BACKFILLS, and as specified in the STANDARD SPECIFICATIONS. The backfill may include suitable material originating on the site equivalent to common borrow as defined in PART 2 - PRODUCTS.

F. Trench backfills under all areas and drainage swales shall be placed using full trench compaction, as described above.

3.10 CHANGE OF TRENCH LOCATION

A. In case the Engineer shall direct that the location of a trench be changed from that shown on the Drawings on account of the presence of an obstruction or from other cause, or if changed location shall be authorized upon the Contractor's request, the Contractor shall not be entitled to extra compensation or to a claim for damage provided that the change is made before the excavation is begun. If however, the change in trench location is directed by the Engineer after the excavation has begun but before the trench has been excavated to its ultimate depth, the abandoned portion of the excavation shall be measured and paid at the appropriate stipulated price in the Proposal for the depth actually excavated. If the abandonment is ordered after the trench has been excavated to its ultimate depth, payment will be made, as stated above, to a depth called for on the Drawings or as directed by the Engineer. In both instances, the payment width shall be as indicated on the Drawings or in the STANDARD DETAILS for the size pipe to be installed.

B. If an obstruction occurs within the trench in such manner that the trench has to be excavated to extra width in order that sheeting or bracing may be properly placed, or in order that the structure to be placed in the trench may be properly built, such extra width of trench shall be measured and paid for under the appropriate item in the Proposal. No sloping of sides of excavations, for the purposes of avoiding the necessity of placing sheeting or bracing, either in the presence or absence of obstruction, will be paid for.

3.11 COMPACTED FILLS AND BACKFILLS

A. Prior to placing any fill or backfill, notice shall be given the Engineer so that the work may be inspected, and filling or backfilling shall not proceed without his approval.

B. Placing, spreading and compacting suitable material for fills and backfills:

1. Fill and backfill material shall be placed in approximately horizontal layers, which before compaction, shall not exceed 8 inches in thickness. Fill and backfill material within 5 feet of structures shall be placed in approximately horizontal layers which, before compaction, shall not exceed 6 inches in thickness. Each layer shall be spread uniformly and evenly. All rocks shall be distributed throughout the earth materials and all voids shall be carefully filled and the material properly compacted by rolling, tamping, vibratory compactors, or other methods specified herein and approved by the Engineer. Compaction by heavy rollers or other heavy equipment is prohibited within 5 feet of any structure.

2. Moisture content of the fill material shall be within 3% above or below the optimum moisture content for the material while placing and during compaction. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 95% of maximum dry density for cohesionless soils and not less than 92% of maximum dry density for cohesive soils. Unless otherwise noted, fills and backfills within 12 inches of slab or pavement subgrade shall be compacted to not less than 95% of maximum dry density. Cohesionless soils are defined as granular soils containing less than 15% by weight passing the No. 200 sieve. Optimum moisture content and maximum dry density shall be determined by AASHTO T180. Weaving or creeping of the soil beneath the roller shall be sufficient evidence that the moisture content of the fill or subsoils is excessive, and that required compaction has not been achieved.

3. The fill or backfill shall be constructed in such a manner that the surface will be sloped to drain at all times and shall be sealed by rolling at the completion of each day or prior to rain. No fill or backfill shall be placed, spread or rolled while it is frozen or thawing or be placed upon frozen or thawing ground or during unfavorable weather conditions. Any compacted layer which has been previously frozen shall be reworked or removed before the next layer is placed. Materials containing free water or having a moisture content higher than specified shall not be deposited upon the fill or backfill until after they have been dried to the specified moisture content.

3.12 BORROW

In the event that sufficient suitable material is not available from the required excavations on site to perform the work as specified on the Drawings or in the

STANDARD SPECIFICATIONS, suitable borrow material shall be furnished by the Contractor from approved off-site sources.

3.13 CONTINGENT COMMON BORROW, SELECT BORROW AND POROUS FILL

A. The Engineer may direct the use of any additional quantity of common borrow, select borrow and porous fill as specified in PART 2 - PRODUCTS, to be used below subgrade or at locations other than as specified on the Drawings or in the STANDARD SPECIFICATIONS.

B. Placement and compaction of these materials shall be in accordance with Paragraph 3.11, COMPACTED FILLS AND BACKFILLS.

3.14 BLASTING

Blasting is prohibited on this project.

3.15 GRADING

A. Prior to placing any fill or backfill, notice shall be given the Engineer so that the work may be inspected, and filling or backfilling shall not proceed without his approval.

B. Sufficient grading shall be performed during the progress of the work so that no water, at any time, is allowed to flow towards the walls of the structures or trenches. The entire site shall be well drained and free from water pockets.

C. Upon completion of grading, all debris shall be cleaned up and removed from the premises.

D. Fine grading shall conform to Section 02930, FINE GRADING AND SEEDING Specifications.

3.16 TOPSOIL, SOLID SODDING, SEEDING AND MULCHING

Furnishing and placing topsoil, solid sodding, seeding and mulching shall conform to VDOT Standard Specifications.

END OF SECTION

ACCUMARK
Subsurface Utility Services

TEST HOLE INVENTORY REPORT - QUALITY LEVEL "A"

Middleburg Test Holes

Whitman, Requardt & Associates, LLP, 3701 Pender Drive, Ste. 450, Fairfax, Virginia, 22030

Date	TH#	Utility Requested	Utility Found	Existing Grade Depth	Material Type	Utility Elevation	Pavement Thickness	Utility Owner
12/15/14	1	Water	3" Water	4.17'	Cast Iron (Black)	430.88'	0.6' Asphalt	MBG
12/15/14	2	Water	3" Water	4.25'	Cast Iron (Black)	424.65'	N/A (Gravel)	MBG
12/15/14	3	Water	6" Water Tee	4.32'	Cast Iron (Black)	423.08'	N/A (Grass)	MBG
12/15/14	4	Fiber Optic	1.5" FO Cable	1.85'	Direct Buried (Black)	417.92'	0.4' Asphalt	VZN
12/15/14	5	Water	6" Water	3.15'	Plastic (White)	417.30'	0.7' Asphalt	MBG

WRA - Point of Contact: Vijay N. Dindigal, PE, LS GISP (703) 293-9717x235
Accumark - Point of Contact: Aaron Blow (703) 635-3074

Sheet 1 of 1

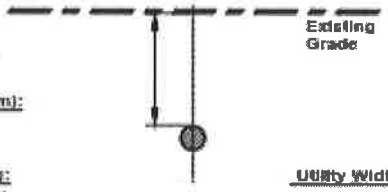
ACCUMARK
Subsurface Utility Services

Utility Test Hole Report - Quality Level "A"

Test Hole #:	1	**Project Numbers:**	NV14-129
		Project Location:	E. Washington Street
Project Name:	Middleburg Test Holes		Middleburg, Virginia
		Utility Owner:	MBG
Requested By:	WRA		
Point of Contact:	Vijay Dindigal, PE, LS, GISP	**Work Type:**	Infrastructure
	(703) 293-9717x235		Improvements
Utility Requested:	Water	**Test Hole Date:**	12/15/14
Utility Found:	Water	**Soil Conditions:**	Soft Clay
Material Makeup:	Cast Iron (Black)	**Utility Condition:**	Good
Size Utility Found:	3"	**Pavement Cond:**	Good
			0.6' Asphalt

Test Hole Information:

Elevation at hub & tack / Pk:	435.05'
Existing grade depth @ top of utility:	4.17'
Elevation at top of utility:	430.88'
Elevation at bottom of utility:	N/A



Cover (Top): 4.17'

Cover (Bottom): N/A

Drawn Facing: Northeast

Utility Width: 3"±

Elevation / Survey Information:

Located By: Accumark, Inc.

Benchmark Elevation: See Note Below

Northing:	Easting:	Elevation:
475991.9224	3499932.6281	435.05'

Station:	Offset:
N/A	N/A

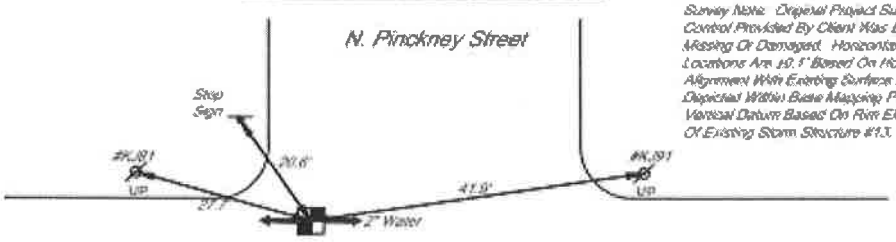
Notes:

PK set over crown of utility. Records show a 2" water in this area.

Site Diagram / Location Details:

Scale: (NTS)

Survey Note: Original Project Survey Control Provided By Client Was Either Missing Or Damaged. Horizontal Locations Are ±0.1' Based On Horizontal Alignment With Existing Surface Features Depicted Within Base Mapping Provided. Vertical Datum Based On Rim Elevation Of Existing Storm Structure #13.



LMB 12/17/14

ACCUMARK, INC. (800) 542-2990

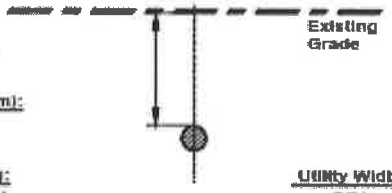
ACCUMARK
Subsurface Utility Services

Utility Test Hole Report - Quality Level "A"

Test Hole #:	2	**Project Numbers:**	NV14-129
		Project Location:	E. Washington Street
Project Name:	Middleburg Test Holes		Middleburg, Virginia
		Utility Owner:	MBG
Requested By:	WRA		
Point of Contact:	Vijay Dindigal, PE, LS, GISP	**Work Type:**	Infrastructure
	(703) 293-9717x235		Improvements
Utility Requested:	Water	**Test Hole Date:**	12/15/14
Utility Found:	Water	**Soil Conditions:**	Soft Clay & Rock
Material Makeup:	Cast Iron (Black)	**Utility Condition:**	Good
Size Utility Found:	3"	**Pavement Cond:**	N/A (Gravel)

Test Hole Information:

Elevation at hub & tack / Pk: 428.90'
Existing grade depth @ top of utility: 4.25'
Elevation at top of utility: 424.65'
Elevation at bottom of utility: N/A



Cover (Top): 4.25'
Cover (Bottom): N/A
Drawn Facing: Northeast
Utility Width: 3"±

Elevation / Survey Information:

Located By: Accumark, Inc.
Benchmark Elevation: See Note Below

Northing:	Easting:	Elevation:
476077.8503	3500110.2180	428.90'

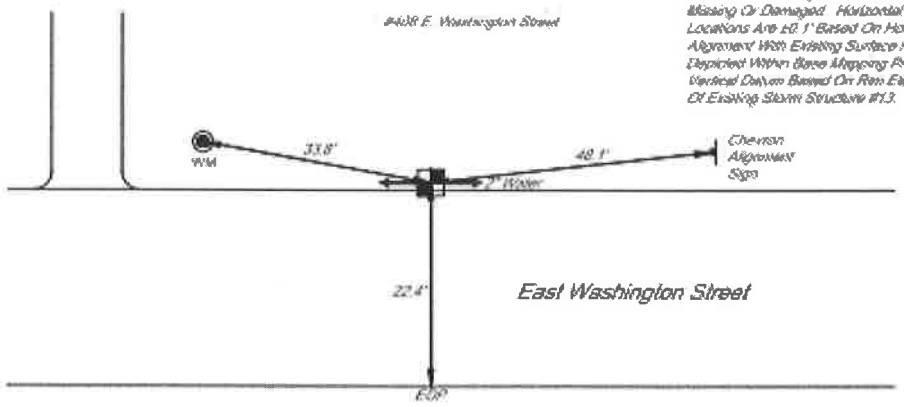
Station: N/A
Offset: N/A

Notes:
PK set over crown of utility. Records show a 2" water in this area.

Site Diagram / Location Details:

Scale: (NTS)

Survey Note: Original Project Survey Control Provided By Client Was Either Missing Or Damaged. Horizontal Locations Are ±0.1' Based On Horizontal Alignment With Existing Surface Features Depicted Within Base Mapping Provided. Vertical Datum Based On Rim Elevation Of Existing Storm Structure #13.



LMB 12/17/14

ACCUMARK, INC. (800) 542-2990

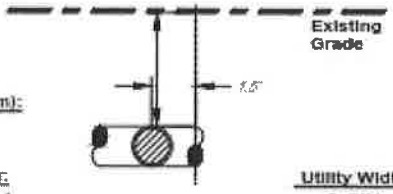
ACCUMARK
Subsurface Utility Services

Utility Test Hole Report - Quality Level "A"

Test Hole #:	3	**Project Numbers:**	NV14-129
		Project Location:	N. Pinckney Street
Project Name:	Middleburg Test Holes		Middleburg, Virginia
		Utility Owner:	MBG
Requested By:	WRA		
Point of Contact:	Vijay Dindigal, PE, LS, GISP	**Work Type:**	Infrastructure
	(703) 293-9717x235		Improvements
Utility Requested:	Water	**Test Hole Date:**	12/15/14
Utility Found:	Water Tee	**Soil Conditions:**	Clay & Gravel
Material Makeup:	Cast Iron (Black)	**Utility Condition:**	Good
Size Utility Found:	8"	**Pavement Cond:**	N/A (Grass)

Test Hole Information:

Elevation at hub & tack / Pk:	427.40'
Existing grade depth @ top of utility:	4.32'
Elevation at top of utility:	423.08'
Elevation at bottom of utility:	N/A



Cover (Top): 4.32'

Cover (Bottom): N/A

Drawn Facing: Northwest

Utility Width: 8.5"±

Elevation / Survey Information:

Located By: Accumark, Inc.

Benchmark Elevation: See Note Below

Northing:	Easting:	Elevation:
476113.8688	3499861.9925	427.40'

Station: N/A

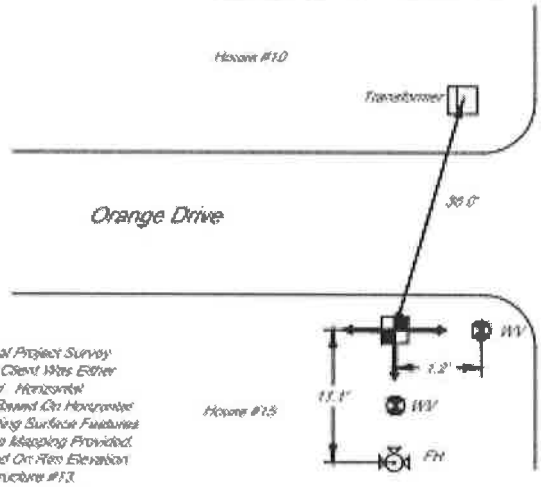
Offset: N/A

Notes:

PK set over crown of utility. Records show 6" line in this area.

Site Diagram / Location Details:

Scale: (NTS)



Survey Note: Original Project Survey Control Provided By Client Was Either Missing Or Damaged. Horizontal Locations Are ±0.1' Based On Horizontal Alignment With Existing Surface Features Depicted Within Base Mapping Provided. Vertical Datum Based On Rim Elevation Of Existing Storm Structure #13.

LMB 12/17/14

ACCUMARK, INC. (800) 542-2990

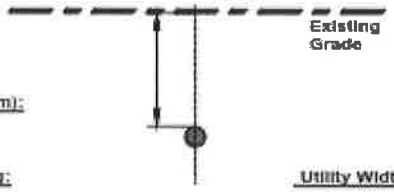
ACCUMARK
Subsurface Utility Services

Utility Test Hole Report - Quality Level "A"

Test Hole #:	4	**Project Numbers:**	NV14-129
		Project Location:	N. Pinckney Street
Project Name:	Middleburg Test Holes		Middleburg, Virginia
		Utility Owner:	VZN
Requested By:	WRA		
Point of Contact:	Vijay Dindigal, PE, LS, GISP	**Work Type:**	Infrastructure
	(703) 293-9717x235		Improvements
Utility Requested:	Fiber Optic	**Test Hole Date:**	12/15/14
Utility Found:	Fiber Optic Cable	**Soil Conditions:**	Soft Clay
Material Makeup:	Direct Buried (Black)	**Utility Condition:**	Good
Size Utility Found:	1.5"	**Pavement Cond:**	Poor
			0.4' Asphalt

Test Hole Information:

Elevation at hub & tack / Pk:	419.77'
Existing grade depth @ top of utility:	1.85'
Elevation at top of utility:	417.92'
Elevation at bottom of utility:	N/A



Cover (Top): 1.85'

Cover (Bottom): N/A

Drawn Facing: East

Utility Width: 1.5"±

Elevation / Survey Information:

Located By: Accumark, Inc.

Benchmark Elevation: See Note Below

Northing:	Easting:	Elevation:
476228.0874	3499826.4938	419.77'

Station: N/A

Offset: N/A

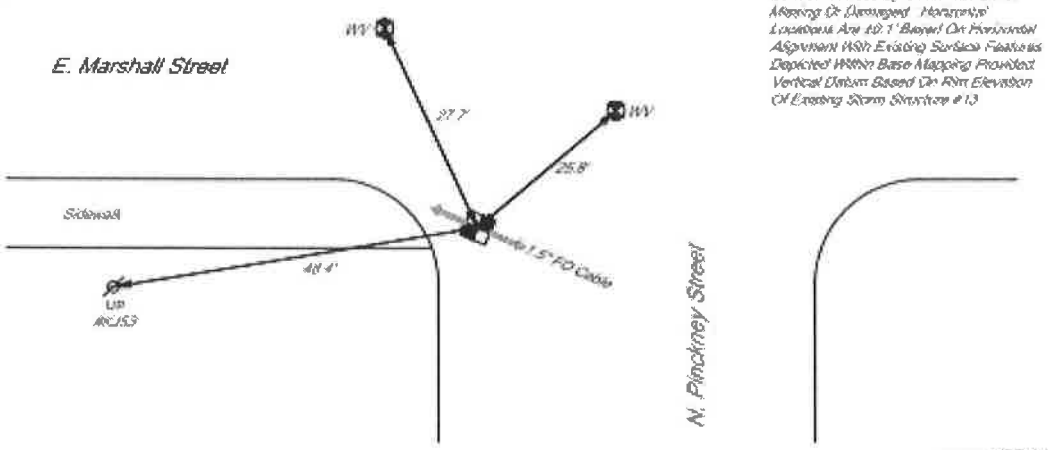
Notes:

PK set over crown of utility.

Site Diagram / Location Details:

Scale: (NTS)

Survey Note: Original Project Survey Control Provided By Client Was Either Missing Or Damaged. Horizontal Locations Are ±0.1' Based On Horizontal Alignment With Existing Surface Features Depicted Within Base Mapping Provided. Vertical Datum Based On Rim Elevation Of Existing Storm Structure # 13



LMB 12/17/14

ACCUMARK, INC. (800) 542-2990

ACCUMARK
Subsurface Utility Services

Utility Test Hole Report - Quality Level "A"

Test Hole #:	5	**Project Numbers:**	NV14-129
		Project Location:	N. Pinckney Street
Project Name:	Middleburg Test Holes		Middleburg, Virginia
		Utility Owner:	MBG
Requested By:	WRA		
Point of Contact:	Vijay Dindigal, PE, LS, GISP	**Work Type:**	Infrastructure
	(703) 293-9717x235		Improvements
Utility Requested:	Water	**Test Hole Date:**	12/15/14
Utility Found:	Water	**Soil Conditions:**	Rock & Clay
Material Makeup:	Plastic (White)	**Utility Condition:**	Good
Size Utility Found:	6"	**Pavement Cond:**	Fair 0.7' Asphalt

Test Hole Information:

Elevation at hub & tack / Pk: 420.45'
Existing grade depth @ top of utility: 3.15'
Elevation at top of utility: 417.30'
Elevation at bottom of utility: N/A

Cover (Top): 3.15'
Cover (Bottom): N/A
Drawn Facing: Northeast
Utility Width: 7"±

Elevation / Survey Information:

Located By: Accumark, Inc.
Benchmark Elevation: See Note Below

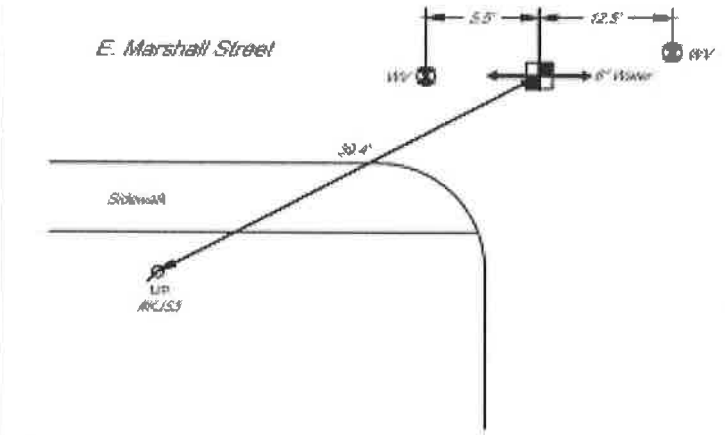
Northing:	Easting:	Elevation:
476244.2467	3499806.7834	420.45'

Station: N/A
Offset: N/A

Notes:
PK set over crown of utility.

Site Diagram / Location Details:

Scale: (NTS)



Survey Note: Original Project Survey Control Provided By Client Was Either Missing Or Damaged. Horizontal Locations Are ±0.1' Based On Horizontal Alignment With Existing Surface Features Depicted Within Base Mapping Provided. Vertical Datum Based On Rim Elevation Of Existing Storm Structure #13.

LMB 12/17/14

ACCUMARK, INC. (800) 542-2990

SECTION 02519

FILLING, TESTING, DISINFECTION, AND FLUSHING OF WATER MAINS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section specifies the general requirements for disinfecting and testing the piping systems shown on the Drawings and specified elsewhere in these Specifications.

1.02 RELATED WORK

A. Piping materials and systems are included in other Sections of Division 15.

B. Section 02530 Piping, Valving and Appurtenances.

1.03 SUBMITTALS

A. Test records.

1. Maintain records of all tests performed.

2. Test records shall include:

a. Date of testing.

b. Identification of piping tested.

c. Test fluid.

d. Test pressure.

e. Signature of contractor.

3. If leaks are found, they shall be noted on the record, and then repaired. After repair, retest as specified for original test.

4. Submit test records to Owner within 24 hours of testing.

1.04 GENERAL REQUIREMENTS

A. General.

1. Test all piping except as otherwise authorized by the Owner.

2. All testing will be performed in accordance with ANSI/AWWA C600 and C651. The Contractor shall notify the Owner 48 hours in advance of testing.

3. Provide all testing apparatus, including pumps, hoses, gauges, and fittings.

4. Unless otherwise noted, pipelines shall hold specified test pressure for two (2) hours.

5. Repair and retest pipelines that fail to hold specified test pressure or which exceed the allowable leakage rate.

6. Unless otherwise specified, test pressures required are at the lowest elevation of the pipeline section being tested.

7. Conduct all tests in the presence of the Owner's representative.

1.05 TEST PRESSURE

A. Hydrostatic test. Test pressure shall be 200 psi unless otherwise specified in the respective piping system section.

PART 2 - PRODUCTS

2.01 TEST FLUIDS

A. Hydrostatic test. Potable water shall be used as the test fluid for all potable water line testing.

2.02 TEST EQUIPMENT

A. Hydrostatic test. Testing shall be performed in accordance with AWWA C600

1. Water: Of sufficient capacity to deliver the required test pressure.

2. Strainer: On inlet side of the pump to prevent foreign matter from entering the system.

3. Valves: Shall be provided on the suction and discharge side of the pump.

4. Heater: To allow heating of the test fluid when elevated temperatures are required for test.

5. Relief valve: Set at a pressure to relieve at 20 to 25 percent above the required test pressure.

6. Pressure gauge(s): Capable of reaching 50 percent over the test pressure. These should be located at the pump discharge and any other place deemed convenient by the Contractor.

7. Pressure gauges and relief valves shall be checked for accuracy before use in test procedures.

PART 3 - EXECUTION

3.01 SAFETY

A. All tests shall be performed under the direct supervision of the Contractor and in the presence of a representative of the Owner.

B. Restrict personnel in the test area to those involved in the test.

C. Safety glasses must be worn throughout testing.

3.02 HYDROSTATIC TEST

A. The Contractor shall schedule all tests with the Engineer at least 48 hours in advance, and shall conduct all acceptance testing in the presence of the Engineer.

B. Coordinate with the Town of Middleburg for obtaining water for hydrostatic testing.

C. Hydrostatic testing shall be performed in accordance with AWWA C605. This test specification shall be used to hydrostatically test piping systems for structural integrity and leaks. The test shall be performed at ambient temperature unless otherwise specified.

D. Hydrostatic pressure test.

1. All newly installed water mains or any valved section thereof shall be hydrostatically tested. Backfilling and compaction shall be completed before testing unless otherwise required or approved by the Owner.

2. Each valved section of pipe shall be slowly filled with potable water expelling all air. If necessary, Contractor shall install corporation stops to assist in air removal. Backflow prevention device where required by Owner shall be in accordance with AWWA C510 and used whenever non-disinfected pipelines are being filled from a potable water source or main.

3. Specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Owner. The water and container used in pressurizing the main to be tested shall be properly disinfected in accordance with AWWA C651.

4. All exposed pipe, fittings, and appurtenances shall be examined after pressurization of pipeline. Any visible leaks shall be repaired.

5. The section of pipeline under test will be considered to have successfully completed this test if applied pressure does not vary by more than five (5) psi during the two-hour test duration.

E. Leakage test.

1. All newly installed water mains or any valved portion thereof shall be subjected to a leakage test conducted concurrently with the hydrostatic pressure test.

2. Leakage shall be defined as the quantity of water that must be supplied to a newly installed pipeline, or valved section thereof, to maintain pressure within five (5) psi of the test pressure specified.

3. Allowable leakage in gallons per hour for PVC pressure pipe shall be determined by the most recent AWWA Standard C605. Current formula is as follows:

$$L = \frac{S\,D\,P^{1/2}}{148{,}000}$$

L = Allowable leakage (gal./hr.)
S = Length of pipe being tested (ft.)
D = Nominal pipe diameter (in.)
P = Average test pressure (lbs./in.^{2})

4. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0075 gal./hr./in. of nominal valve size will be allowed.

5. All hydrants, air relief valves, meters, or other appurtenances within the test section shall be valved-off during testing to prevent possible damage.

6. If any test of installed pipe discloses leakage greater than that allowed, the Contractor shall, at his own expense, determine the sources of leaks and remedy all deficiencies as necessary. The installed pipe shall be retested in accordance with the test procedures above until leakage is within acceptable limits.

3.03 DISINFECTION OF POTABLE WATER PIPING

A. All newly installed water piping shall be disinfected in accordance with Virginia Department of Health Waterworks Regulations, latest revision and AWWA C651. Disinfection method shall be by the continuous feed method. The tablet method shall not be used. Contractor shall be responsible for all aspects of disinfection, sampling, and testing at his own expense.

1. Continuous feed method.

a. Potable water shall be introduced into the pipeline at a constant flow rate protected by an approved backflow prevention device. Chlorine shall be added at a constant rate to this flow so that the chlorine concentration in the water in the pipe is at least 50 mg/l.

b. The chlorinated water shall remain in the pipeline at least 24 hours, after which the chlorine concentration in the water shall be at least 10 mg/l.

c. Pipes shall be flushed prior to the disinfection with a velocity of at least 2.5 ft/sec and valves, hydrants, and other appurtenances shall be operated during this flushing. Valves and hydrants and other appurtenances need to be operated during the disinfection process to be sure that they are disinfected as well. However, flushing should not be done if the tablet method is used.

B. Following the chlorination period, flush the disinfectant from the piping with potable water. All treated water flushed from the lines shall be disposed of by discharging to the sanitary sewer system (only with prior approval of the Owner) or other approved means. No discharge to any storm sewer or natural watercourse will be allowed without first dechlorinating the flushed water to a chlorine residual of 1 mg/l or less.

C. Following final flushing, two (2) water samples for bacteriological test shall be collected Samples shall be taken 24 hours apart. All tested samples must indicate the absence of coliform contamination. Should the tests indicate the presence of coliform contamination, the Contractor will be allowed to resample and test. Should the retesting still indicate the presence of coliform contamination, the Contractor shall repeat the entire disinfection procedure until tests indicate the absence of coliform contamination. All cost for re-disinfection, sampling, and testing will be at Contractor's expense.

D. Disinfection shall also include hydrants, fittings, taps, tubing, and all other specials used at connections to existing water mains. These shall be thoroughly disinfected immediately prior to installation by emersion or spraying with a water solution containing 250 mg/l chlorine.

END OF SECTION

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SECTION 02731

WATER MAINS AND APPURTENANCES

PART 1 - GENERAL

1.01 DESCRIPTION

The Contractor shall furnish all labor and provide all materials and equipment necessary for the complete and satisfactory installation of all pipe, fittings and appurtenances to the lines, grades and elevations shown on the Contract Drawings and as specified herein.

1.02 SUBMITTALS

Shop drawings, shall be submitted for items specified herein as specified under section 01300 SUBMITTALS. Shop drawings shall be submitted for, but not limited to, the following materials, and shall include the following information:

A. All pipe and fittings: Product information and dimensions; DR, pressure class and operating pressure rating; storage, handling and installation recommendations, manufacturer's recommended testing procedures, and jointing methods and procedures.

B. MJ and HDPE adapters for connecting the different pipe materials shown on the drawings; for connecting pipes with different outside diameters; or for connecting pipes, fittings or valves with different end conditions.

C. All isolation valves, valve boxes, and other fittings.

D. Other items to be used in the work that is not specifically identified above shall be subject to shop drawing review at the option of the Owner.

1.03 MANUFACTURER'S CERTIFICATES

Certificates of Compliance and certified test results shall be submitted for all pipe and fittings stating the item supplied is in accordance with the requirements specified herein.

1.04 QUALITY ASSURANCE

A. The Engineer will inspect all materials before, during and after installation to ensure compliance with these Contract Documents. When specific material tests are called for in the referenced standards and specifications,

the Owner shall have the option of requiring that any or all of these tests be performed on materials furnished for a specified project.

B. The Contractor shall schedule all tests with the Engineer at least 48 hours in advance, and shall conduct all acceptance testing in the presence of the Engineer.

C. Field Tests

1. After installation, the Engineer will initially inspect outside piping and shall be Contractor tested for compliance with these Specifications. The contractor shall furnish all labor, tools, materials, water, and equipment, including pumps, compressors, stopwatch, gauges, and meters, for testing in accordance with these specifications.

2. All defects revealed by the tests shall be corrected without cost to the Owner. Tests and repairs shall be continued until test requirements are met. Repairs to the various systems shall be made with new materials. No caulking of threaded joints, cracks, or holes will be acceptable. When it is necessary to replace any piece of pipe, fitting, valve, etc., the replacement shall be of the same material and thickness as the defective piece. Tests shall be repeated after defects disclosed thereby have been made good.

3. All piping shall be adequately braced and supported during the tests so that no movement, displacement or damage will result from the application of the test pressure. Relief devices in the various systems shall be capped or plugged during the tests.

4. All equipment used in testing shall be provided by the Contractor and subject to the approval of the Engineer, and shall be such as to properly develop, maintain and measure hydrostatic test pressures and leakage rates. Where devices such as meters, recorders, charts, plugs, caps, blind flanges, corporation stops or bulkheads are required to develop, maintain and measure test pressures these devices shall be furnished and installed by the Contractor.

5. All required testing will be witnessed by the Engineer.

1.05 GENERAL NOTES - PIPING

A. Miscellaneous piping systems which may not be described specifically by any section of these specifications shall be of the type of pipe and fittings as shown on the drawings.

B. The Contractor shall verify all dimensions of valves, special castings and fittings, pipe equipment, etc., so that all of the pipe work performed will fit together properly and will conform to the arrangement as shown on the drawings. In selecting laying lengths of fittings, the Contractor shall be guided by the indicated dimensions on the drawings. All pipe and specials shall be accurate to the dimensions shown.

1.06 GENERAL NOTES - FITTINGS

A. All fittings shall be of the type indicated on the drawings unless otherwise specified. Ferrous piping shall be provided with ferrous fittings.

B. All flanges shall come fairly (regularly and evenly) face to face with the pipe in perfect alignment. The pipes shall not be sprung to make a joint. Gaskets for flanged joints shall be as specified under "Joints." All joints shall be made neatly and with great care.

1.07 REFERENCES

A. Ductile Iron Pipe

1. ANSI/AWWA C104/A21.4-95 Standard for Cement Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water.

2. ANSI/AWWA C110/A21.10-98 Standard for Ductile Iron and Gray Iron Fittings, 3 through 48 inches, for Water and Other Liquids.

3. ANSI/AWWA C111/A21.11-95 Standard for Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings.

4. ANSI/AWWA C115/A21.15-99 Standard for Flanged Ductile Iron Pipe with Threaded Flanges.

5. ANSI/AWWA C150/A21.50-96 Standard for the Thickness Design of Ductile Iron Pipe.

6. ANSI/AWWA C151/A21.51-96 Standard for Ductile Iron Pipe, Centrifugally Cast for Water or Other Liquids.

7. ANSI/AWWA C153/A21.53-94 Standard for Ductile Iron Compact Fittings, 3 Inches Through 12 Inches (75 MM through 300 MM), and 54-inches through 64-inches (1400 mm through 1600 mm) for Water Service

8. ANSI/AWWA C600-99 Standard for Installation of Ductile Iron Water Mains and Their Appurtenances.

9. AWWA C504-94 Standard for Rubber-Seated Butterfly Valves.

10. AWWA C507-99 Standard for ball valves 6-inch through 48-inch (150mm through 1200 mm).

11. ANSI/AWWA C512-99, Standard for Air Release, Air Vacuum, and Combination Air Valves for Waterworks Service.

12. ASTM A536-84 Standard Specification for Ductile Iron Castings

B. Polyvinyl Chloride Pipe (PVC)

1. ANSI/AWWA C900-97 AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4 through 12 inches for water.

2. ANSI/AWWA C905-97 AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 through 48 inches for Water Transmission and Distribution.

3. AWWA Manual M23; PVC Pipe - Design and Installation.

4. ASTM D1784 Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.

5. ASTM D2241 - Standard Specification for Polyvinyl Chloride (PVC) Pressure Rated Pipe (SDR Series).

6. ASTM D2412 - Test Methods for Determination of External loading Characteristics of Plastic Pipe by Parallel Plate Loading.

7. ASTM D2321 - Standard Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.

8. ASTM D2466 - Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40.

9. ANSI/ASTM D2774 - Recommended Practice for Underground Installation of Thermoplastic Pressure Piping.

10. ASTM D3139 Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

11. ASTM D3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes using flexible elastomeric seals.

12. ASTM F477-93 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

PART 2 - PRODUCTS

2.01 GENERAL

All pipe and fittings shall be new, of the sizes indicated on the drawings or as specified.

2.02 PIPE SCHEDULE

Service	Pipe Material	Installation
Water Main	DR-25, Pressure Class 165	Open Cut
Water Main Fittings	DIP Class 53 Restrained Joint	Open Cut
Water Service Tubing	Type K, Soft Copper	Open Cut

2.03 DUCTILE IRON PIPE AND FITTINGS

A. Ductile iron pipe for buried service shall be furnished in accordance with ANSI/AWWA C151/A21.51-96 or latest revision thereof. All ductile iron pipe shall be double cement mortar lined with a bituminous coated exterior. The pipe thickness shall be Special Thickness Class 52.

B. Joints for buried pipe, fittings and specials shall conform to ANSI/AWWA C-111/A21.11-95 or latest revision thereof and may be either a "Mechanical Joint" or a "Push-On Joint." Push-on joints shall be the "Tyton" joints of the U.S. Pipe and Foundry Company, the "Fastite" joint of American Cast Iron Pipe Company, the Tyton joint of Griffin Pipe Products Company, "or equal". All pipe furnished with push on joints shall be jointed in accordance with the manufacturer's recommendations.

C. Joint restraints for gasketed push on joint shall be "TR-Flex" of U.S. Pipe and Foundry Company, "Flex-Ring" or "LOK RING" of American Cast Iron Pipe Company, "Snap-Lok" or "Bolt-Lok" by Griffin Pipe Products Company, "or equal," designed for a maximum water working pressure of 250 psi.

D. Mechanical joint restraints for use with mechanical joint pipe and fittings shall be EBAA Iron Megalug 1100 Series, "or approved equal." The restraining mechanism shall consist of individually actuated wedges that

increase their resistance to pull-out as pressure or external forces increase. The device shall be capable of full mechanical joint deflection during assembly and the flexibility of the joint shall be maintained after burial. The joint restraint and its wedging components shall be made of grade 60-42-10 ductile iron conforming to ASTM A536. The wedges shall be ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell conforming to ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53. Torque limiting twist off nuts shall be provided to insure proper actuation of the restraining wedges. The mechanical joint restraint shall have a rated working pressure of 350 psi in sizes 16" and smaller and 250 psi in sizes 18" and larger. The device shall be listed by Underwriters Laboratory through the 24" size and approved by Factory Mutual up through the 12" size. All wedge assemblies shall be coated with a minimum of two coats of liquid Xylan flouropolymer coating with heat cure to follow each coat. All wedge assemblies and related parts shall be processed through a phosphate wash, rinse and drying operation prior to coating application. All casting surfaces shall be surface pretreated with a phosphate wash, rinse and sealer before drying. The coating shall be electrostatically applied and heat cured. The coating shall be a polyester based powder to provide corrosion, impact an UV resistance. The coating system for all mechanical joint restraints shall be mega-bond by Ebba Iron "or approved equal".

E. Fittings and specials shall be manufactured in accordance with ANSI/AWWA C110/A21.10-98 or latest revision thereof and shall be pressure rated for 250 psi for ductile iron. The ductile iron used in the manufacture of ductile iron fittings and specials shall have a minimum tensile strength of 70,000 psi. Compact fittings manufactured in accordance with ANSI/AWWA C153/A21.53-94 or latest revision thereof will be permitted.

F. Unless otherwise specified, the inside of pipe and fittings shall be cement-lined in accordance with ANSI Specifications A21.4 (AWWA C-104). Thickness of cement lining shall be twice the standard thickness specified in the paragraph, "Thickness of Lining," in Section 4.8 of ANSI Specifications A21.4 (AWWA C104) and the curing shall be effected by means of a seal coating. The outside of buried pipe and fittings shall be bituminous coated. All exposed ductile iron pipe and fittings shall be shop primed (with primer compatible with field painting) on exterior surfaces and given required finish coats in the field.

G. The curing shall be effected by the application of a petroleum base bituminous seal coating which shall continuously cover and seal the cement mortar. After drying for 48 hours, such bituminous seal coating shall have no deleterious effect upon the quality, color, taste, or odor of

potable water which has been standing for 48 hours in the pipe. The bituminous seal coating shall be applied to the lining as soon as it is sufficiently dry. No pipe or fittings shall be shipped in less than 12 hours after the lining is thoroughly set and hard

H. Where required or shown, the Contractor shall provide ductile iron specials. Specials shall in general, consist of spool pieces, less than standard lengths of flanged, spigot end, or bell end pipe, or combination of ends, and non-standard fittings. The specials shall conform in material, thickness and finish to the pipe in which they are installed. Tapped reinforced bosses shall be provided as an integral part of fittings when shown or specified.

I. Each piece of pressure ductile iron pipe shall have the weight and class designation conspicuously painted on it as near as possible to the flanged or bell end of the pipe and these designations shall be clearly legible.

J. The Mechanical Joint shall consist of a rubber or composition tapered gasket, a cast iron gland ring and cast iron T- Head bolts. The joint shall be affected in accordance with AWWA C600-99 or latest revision thereof.

K. Bell joint clamps shall be style 60 as manufactured by Dresser Industries, "or equal," for push on type joints

2.04 PVC WATER MAIN AND FITTINGS

A. All PVC pressure pipe shall be unplasticized polyvinyl chloride normal impact type in conformance with ASTM D-1784. All 4-inch and greater PVC pressure pipe shall be a minimum of DR25 and conform to AWWA C-900/C-905. All pipe shall be rated for a working pressure of at least 165 psi plus a surge allowance of at least 35 psi and shall have a minimum hydrostatic strength of 600 psi when tested in accordance with AWWA C-900/C-905.

B. All PVC pipe shall be manufactured with integral wall bell and spigot which shall utilize a flexible O-ring gasket conforming to ASTM F-477. All pipe ends shall be beveled to accept the gasketed fittings. Gaskets for push on joints and compression type joints, and mechanical joints for joint connections between pipe and metal fittings, valves and other accessories shall be as specified in AWWA C111/A21.11 for push on joints and mechanical joints.

C. All fittings for PVC pressure pipe 4-inches and greater shall be ductile iron conforming to AWWA C110/A21.10 or AWWA C153/A21.53 and shall be rated for 250 psi working pressure. Fittings shall be provided with mechanical joint retainer glands in accordance with ANSI A 21.11, except

where noted on the plans. All fittings shall have a double cement mortar lining conforming to AWWA C104/A21.4.

D. Each pipe section including bell or coupling shall be subjected to a hydrostatic test of more than 500 psi for at least five seconds. Pipe shall be tested in accordance with conditions in ASTM D618. Any pipe that leaks or is unable to withstand the test pressure shall be rejected. The test shall be conducted at the factory and certification stating that the operation has been conducted as specified and the pipe meets all conditions of this specification shall be submitted to the Engineer.

E. Pipe shall be manufactured in lengths not exceeding 20 feet.

F. Mechanical joint restraint gland for use with PVC AWWA C900/C905 pipe shall be EBAA Iron Sales, Inc., Series 2000 PV mechanical joint restraint, "or equal." The restraint mechanism shall consist of a plurality of individually activated gripping surfaces to maximize restraint capability. Glands shall be manufactured of ductile iron conforming to ASTM A536-80. The gland shall be such that it can replace the standard mechanical joint gland and be used with a standard mechanical joint bell conforming to ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53. Twist off nuts, sized same as t-head bolts, shall be used to insure proper actuating of the restraining device. The restraining gland shall be pressure rated equal to that of the pipe on which it is used. The restraining glands shall have been tested to and meet the requirements of ASTM F1674-96, be listed by Underwriters Laboratories, and be approved by Factory Mutual. All wedge assemblies shall be coated with a minimum of two coats of liquid Xylan flouropolymer coating with heat cure to follow each coat. All wedge assemblies and related parts shall be processed through a phosphate wash, rinse and drying operation prior to coating application. All casting surfaces shall be surface pretreated with a phosphate wash, rinse and sealer before drying. The coating shall be electrostatically applied and heat cured. The coating shall be a polyester based powder to provide corrosion, impact an UV resistance. The coating system for all mechanical joint restraints shall be mega-bond by Ebba Iron "or equal".

G. Restraint for PVC pipe bells (AWWA C900) for C900 pipe 4"-12" shall be EBAA Iron Sales, Inc., Series 1600, "or equal." Restraint for PVC bells (AWWA C900) for C905 pipe shall be EBAA Iron Sales, Inc., Series 2800, "or equal." All such restraints shall have the same coating system as the described for the mechanical joint restraint gland.

H. Gasketed 5-degree bends as manufactured by Ipex (Blue Brute) may be used to maintain the alignment as shown on the drawings. Fabricated gasketed 5-degree bends shall meet all the requirements of AWWA C900.

2.05 PIPELINE DETECTION SYSTEM

A. Pipeline warning tape shall be installed 2 feet below grade continuously over the center of the water main. The tape shall be a minimum of three (3) inches wide, blue in color, imprinted with the words, "CAUTION – WATER MAIN BELOW" and be capable of being detected with inductive methods.

B. The Contractor shall install a pipeline detection system over the interceptor. Marker system shall be 3M EMS Markers with passive ball marker or full range marker suitable for depths up to 15 feet. Marker system shall be blue in color. Provide all detection system equipment necessary for a complete system.

2.06 CONCRETE THRUST BLOCKS

The Contractor shall provide concrete thrust blocks on all unrestrained bends, tees, plugs and caps in accordance with the contract drawings. The Contractor shall also provide concrete anchors immediately prior to transitions from PVC to other pipe materials or structures, as well as all locations where PVC segments of pipe terminate at non-flanged, non-threaded or non-fusion bonded valves, fittings or couplings to resist thermal expansion and contraction.

2.07 CORPORATE STOPS, SERVICE LINES AND VALVE BOXES

A. Corporate stops shall meet or exceed the requirements of AWWA C800 and shall be pressure rated for 300 psi.

B. Copper tubing shall conform to ASTM B88 type K.

C. Air release valves shall be APCO 143C 04r 145C Combination Air Vacuum valve.

D. Valve boxes for air release valves shall be Loudoun Water standard water meter box 18-inch diameter with traffic loadable A32HH-T meter box cover as shown on the drawings the requirements of ASTM A48.

E. The shaft diameter shall not be less than 5 ¼ inches. The valve boxes shall have a minimum range of extension to fit 2-inch to 12-inch valves inclusive, placed on mains at depths of 3 to 5 feet of cover in order that the top cover of the valve box is set to finished grade.

F. Valve boxes shall have a round head marked "WATER".

G. All valves in which the operating nut is greater than five feet below the normal ground or road surface shall be provided with extension stems to bring the operating nut to within five feet of the finished grade.

H. The extension stem shall be provided with a 2-inch square operating nut on top and a coupling to connect the extension to the existing nut of the valve.

I. A stem guide shall be provided to keep the valve stem extensions concentric with the valve box.

J. Extension stems shall be of the same diameter as the valve stem unless otherwise specified.

2.08 GATE VALVES

A. Gate valves shall be of superior quality cast iron body with double parallel seat and full bronze mount.

B. Valves shall operate with a minimum working pressure rating of 250 psi and shall be manufactured to meet and/or exceed the requirements of ANSI/AWWA C509-01 or ANSI/AWWA C515 Standard for resilient wedge ductile iron gate valves.

C. Valves shall open left (counterclockwise).

D. All ferrous components shall be ductile iron, body, wrench nut, stuffing box, and valve wedge.

E. Valve ends shall be mechanical joint in accordance with AWWA C111.

F. Valve wedge shall be ductile iron, encapsulated with nitrile rubber. The wedge shall be symmetrical and seal equally well with flow in either direction. Gate valves shall be Mueller A2361 or American Flow Control AFC 2500 and shall conform to AWWA C515.

G. Valve body will be fusion bonded epoxy coated in accordance with AWWA C550.

H. Valve box shall be provided for each buried valve. Boxes shall be screw type. Extension stems shall be provided for valves where the operating nut is 4-ft or more below grade.

PART 3 - EXECUTION

3.01 PIPE INSTALLATION - GENERAL

A. Contractor shall adhere to the manufacturer's recommended installation procedures.

B. The pipe and accessories shall be inspected for defects prior to installation. Any defective, damaged or unsound material shall be repaired or replaced as directed by the Owner.

C. The pipes shall be thoroughly cleaned before they are laid and shall be kept clean until the acceptance of the completed work. The open ends of all pipelines shall be covered to keep dirt and other substances from entering. The cover shall be kept in the end of the pipelines at all times when laying is not in actual progress.

D. When pipe laying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of debris into the line. If water enters the trench, the Contractor shall prevent the pipe from floating. Any pipe that has floated shall be removed from the trench and the bedding restored. No pipe shall be laid when the trench conditions or the weather are unsuitable for proper installation as determined by the Owner.

E. The pipe shall be cut in accordance with the manufacturer's recommended procedures. Cuts shall be completed in a neat and workmanlike manner without damage to the pipe so as to have a smooth end at right angles to the axis of the pipe.

F. No pipe shall be laid upon the foundation into which frost has penetrated nor at any time when the Engineer shall deem that there is danger of formation of ice or the penetration of frost at the bottom of the excavation.

G. Pipe bedding shall be in accordance with Section 02200, EARTHWORK, EXCAVATION, TRENCHING AND BACKFILLING.

3.02 DUCTILE IRON BURIED PIPE INSTALLATION

A. Ductile iron pipe, fittings, valves and appurtenances shall be handled, stored and installed in accordance with AWWA C600-99 or the latest version thereof.

B. All piping and restrained joints shall be joined in full conformance with the manufacturer's recommendations. The rubber gasket shall be the sole element depended upon to make the joint watertight.

C. The maximum joint deflection allowed shall not exceed 70% of the values shown in Table 4, AWWA 600-99 for mechanical joint pipe and 70% of the manufacturer's maximum allowable deflection for restrained joint push on pipe.

D. Before joints are made, such pipe shall be well bedded on a solid foundation in compliance with the trench details and no pipe shall be brought into position until the preceding length has been thoroughly embedded and secure in place. Any defects due to settlement shall be made good by the Contractor at his own expense. Bell holes shall be dug large enough to insure the making of proper joints.

E. Couplings or sleeves are to be placed as needed.

F. Whenever ductile iron pipe requires cutting in the field, the work shall be done in a satisfactory manner which will leave a smooth end and not otherwise damage the pipe or lining.

3.03 PVC PIPE INSTALLATION

A. PVC pipe shall be installed in accordance with the Standard Details and AWWA Manual M23: PVC Pipe-Design and Installation. All pipe, fittings, valves and accessories shall be carefully lowered into the trench using suitable equipment in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall the pipe or accessories be dropped or dumped into the trench.

B. The pipe and accessories shall be inspected for defects prior to lowering into trench. Bowed sections of PVC pipe will not be acceptable. Any installation of pipe which has been bowed, whether or not the bow has been corrected, will not be allowed. Any defective, damaged or unsound material shall be repaired or replaced as directed by the Engineer.

C. The sealing surface of the pipe, the bell to be joined, and the elastomeric gaskets shall be cleaned immediately before assembly, and assembly shall be made as recommended by the manufacturer. When pipe laying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of trench water into the line. Whenever water is excluded from the interior of the pipe, enough backfill shall be placed on the pipe to prevent floating. Any pipe that has floated shall be removed from the trench and the bedding restored. No pipe shall be laid when the trench conditions or the weather are unsuitable for proper installation as determined by the Engineer.

D. The pipe shall be cut in a neat and workmanlike manner without damage to the pipe so as to have a smooth end at right angles to the axis of the pipe.

E. The push on joint is assembled by positioning the elastomeric gasket(s) in the annular groove(s) of the bell or coupler and inserting the spigot end of the pipe into the bell compressing the gasket radially to form a positive seal. The gasket and annular groove are designed, sized and shaped so that the gasket will resist displacement. Care shall be taken so that only the correct elastomeric gasket compatible with the annular groove(s) of the bell or coupler is used. Insertion of the elastomeric gasket in the annular groove must be in accordance with the manufacturer's recommendations.

F. PVC pipe shall be delivered and stockpiled in unit pallets. No stacking of pallets above 5-feet will be allowed. If pipe is stockpiled for more than 30 days prior to installation, it must be suitably covered with reflective material to protect the pipe from ultraviolet rays resulting from sunlight. Plastic sheets shall not be used for protection. Air circulation shall be allowed under any covering.

3.04 COPPER WATER SERVICE LINES

A. Install water service lines using services saddles on the PVC pipe.

B. Connect water services to existing water meters as shown on the drawings.

3.05 TESTING AND DISINFECTION

A. Hydrostatic testing and disinfection shall be in accordance with Section 02519 Filling Testing Disinfection and Flushing of Water Mains.

B. The Contractor shall schedule all tests with the Engineer at least 48 hours in advance, and shall conduct all acceptance testing in the presence of the Engineer.

C. Coordinate with the Town of Middleburg for obtaining water for hydrostatic testing.

3.06 DEFECTS TO BE MADE GOOD

If at any time before the expiration of the guarantee period under this contract, any broken pipes or any other defects are found in any of the lines or in any of their appurtenances, the Contractor shall cause the same to be removed and replaced by proper material and workmanship, without extra compensation for the labor and material required, even though such injury or damage may not have

been due to any act, default, or negligence on the part of the Contractor. All materials shall be carefully examined by the Contractor for defects just before placing and any found to be defective shall not be placed in the line.

3.07 EXISTING UTILITIES

A. Existing utilities have been indicated on the drawings in accordance with the information shown on record drawings. The Owner expressly disclaims any responsibility for the accuracy or completeness of information shown. It shall be the Contractor's responsibility to verify the location and size of existing piping.

B. Existing utilities and service shall be carefully protected; all damage to utilities by the work shall be immediately repaired by the Contractor to the satisfaction of the Engineer, using materials of the kinds damaged. No additional payment will be made for such repair work. The Owner assumes no responsibility for damages or downtime for the Contractor or their subcontractors resulting form the inadequate or negligent performance by utility locators.

C. The Contractor shall bear the entire cost of all monetary penalties which may be assessed by utility companies whose facilities are damaged and/or put out of service by the Contractor during the prosecution of the work.

D. Where new piping is to be connected to existing piping, the Contractor shall drain or purge the existing piping, cut, grind and prepare the existing piping in every respect in order that it be suitable for connecting to the new piping.

E. Where existing piping is to be abandoned and removed, the Contractor shall not reuse the piping on the project. Abandoned piping remaining in place shall be plugged and capped using retainer glands or concrete plugs. Piping that has been removed shall be hauled offsite and disposed by the Contractor.

3.08 LAYING FITTINGS, VALVES AND VALVE BOXES

A. Fittings, valves, and valve boxes shall be placed along the water main where shown on the drawings or where designated by the Engineer.

B. A valve box shall be carefully placed over the bonnet of each gate valve with the top at finished grade and it shall be set exactly plumb. In tamping and backfilling around the box, special care shall be taken to keep the box plumb and to have it firmly supported so as to avoid settlement. Any box

which is found out of plumb, or which is not firmly supported, shall be dug up and reset in a satisfactory manner, at the Contractor's expense.

END OF SECTION

SECTION 02910

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This section includes requirements for environmental protection throughout the project alignment.

1.02 REGULATIONS

A. The Standard Specifications (Virginia Department of Highways and Transportation, Road and Bridge Specifications), latest edition, and the latest edition of the Virginia Erosion and Sediment Control Handbook shall govern material and construction methods, unless otherwise specified.

B. Payment for all Environmental Protection measures included in this Specifications Section shall be considered incidental to the project.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 SPADE CUTTING OF ROOTS

A. Cut roots along the edges of the trench prior to excavation using mechanical means. During excavation, do not pull roots that have not been completely separated from the roots outside of the trench zone. Recut roots as needed

B. Recut roots as needed to ensure complete separation of roots in the excavation area from roots outside of the trench excavation area.

3.02 RESTORATION OF SWALES

A. Swales and drainage channels that cross the Limits of Disturbance shall be kept in service to allow existing drainage flow patterns to continue to operate during construction.

B. Survey swale thalwegs as needed to properly reset drainage and swale channels.

C. Conduct fine grading in accordance with Specifications Section 02200 to re-establish drainage patterns.

D. Line swales and channels with coir matting to prevent erosion. Where swales and channels cross the permanent access road, use stone as described in Specifications Section 02200, but restore channel thalweg to original elevations.

E. Stone shall be placed to adjust flow characteristics as required by the Engineer.

END OF SECTION