FINAL – MS4 PROGRAM PLAN

Arlington National Cemetery
Arlington, Virginia

February 2019

Prepared for:

Contract Number: N40080-17-C-0321

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Washington Navy Yard, DC 20374

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MS4 PROGRAM PLAN

Due April 1, 2019

Arlington National Cemetery

1 Memorial Drive
Arlington, VA 22211

VPDES Permit Number: VAR040139
Permit Effective Date: November 1, 2018
Permit Expiration Date: October 31, 2023

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General Information

Permittee: Arlington National Cemetery
System Name: Arlington National Cemetery
Permit Number: VPDES Permit VAR040139

Authorized Program Signature Certification

Certification, as required by Virginia Administrative Code (9VAC25-890-40):

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: _____ Date: _____

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List of Acronyms

ANC	Arlington National Cemetery
BMP	Best Management Practice
CSA	Contractor Staging Areas
ESC	Erosion and Sediment Control
GIS	Geographic Information System
HUC	Hydrologic Unit Code
IDDE	Illicit Discharge Detection and Elimination
IPMP	Integrated Pest Management Plan
MEP	Maximum Extent Practicable
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NPS	National Park Service
NMP	Nutrient Management Plan
PP	Pervious concrete/Permeable pavement
POL	Petroleum, Oils, and Lubricants
PDF	Portable Document Format
RG	Bioretention and Rain Garden
SPCC	Spill Prevention, Control, and Countermeasure
SOP	Standard Operating Procedure
STC	Stormceptor
STF	StormFilter
SWPPP	Stormwater Pollution Prevention Plan
PT-UTC	Stormwater Pre-Treatment Chamber
TMDL	Total Maximum Daily Load
UTC	Underground Stormwater Chamber
U.S.	United States
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VPDES	Virginia Pollutant Discharge Elimination System

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1.0 INTRODUCTION

Arlington National Cemetery (ANC) is an active cemetery in Arlington County, Virginia, located within the Potomac River Basin. The site is approximately 620 acres with pervious, impervious, and forest land cover. The ANC storm sewer system includes open ditches and piping. Additionally, a natural stream runs through the northwestern portion of the cemetery. The stream receives water from the piped stormwater system and then flows back into the underground piping before discharging on the northeast side of the property. The National Park Service (NPS) owns land located within and adjacent to ANC's property. The NPS-owned land is not managed or maintained by ANC, is not included in ANC's Small Municipal Separate Storm Sewer System (MS4), and is not included in this Program Plan.

ANC's MS4 has 12 discharge points. Eleven interconnections discharge to adjacent MS4s via engineered structures such as pipes or channels. Receiving MS4s include the NPS, Arlington County, and Virginia Department of Transportation (VDOT). One outfall discharges directly to Boundary Channel, which flows to the Potomac River. Stormwater flows onto the ANC property from Joint Base Myer-Henderson Hall, Arlington County, VDOT, and NPS MS4s. **Table 1-1** lists ANC's outfalls and interconnections.

Table 1-1: Outfalls, Interconnections, and Receiving Waterbody or MS4

ID Number	Type	Receiving Waterbody or MS4
MS4 Outfalls		
OF8-SEC74	Underground pipe	Boundary Channel (pipe runs beneath VDOT and NPS property)
Interconnections to Adjacent MS4s		
IN1-SEC52	Culvert	VDOT
IN2-SEC36A	Underground pipe	NPS
IN3-SEC36	Underground pipe	NPS
IN4-SEC31	Underground pipe	NPS
IN5- Tram	Underground pipe	NPS
IN6-PG North	Underground pipe	VDOT
IN7-PG South	Underground pipe	VDOT
IN9-SEC69	Underground pipe	Pentagon Lagoon
IN10-B123	Underground pipe	VDOT
IN11-SEC8	Underground pipe	Arlington County
IN12-SEC29	Pipe daylights to ground surface	NPS

This Program Plan complies with Part I B. of the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from MS4s (9 Virginia Administrative Code [VAC] 25-890-1, et seq.), hereafter referred to as the "General Permit." All stormwater runoff at ANC is regulated under its General Permit.

This Program Plan implements and enforces ANC's MS4 program to reduce the discharge of pollutants in stormwater from its small MS4 to the maximum extent practicable (MEP), protect water quality, ensure compliance with water quality standards, and satisfy the appropriate water quality requirements of the State Water Control Law and its attendant regulations.

This Program Plan supersedes ANC's 2013 Program Plan and includes the following permit-required elements:

- Roles and responsibilities of ANC's divisions and units tasked with implementing the General Permit requirements and ensuring that the requirements are met;
- Any written agreements between ANC and other entities used to implement portions of the MS4 program;
- Specific requirements for each minimum control measure (MCM);
- Descriptions of best management practices (BMPs) or strategies ANC will implement to demonstrate compliance with the General Permit;
- Standard operating procedures (SOPs) and policies needed to implement the BMPs;
- Measurable goals by which ANC will evaluate each BMP or strategy;
- Persons, positions, and units responsible for implementing each BMP or strategy; and
- A list of documents incorporated by reference including version and date.

2.0 ANC'S ROLES AND RESPONSIBILITIES

ANC's Environmental Program implements this Program Plan and ensures the General Permit requirements are met. Roles and responsibilities of the Environmental Program and other units in implementing the permit requirements are as follows:

- Environmental Program – Program Plan implementation, inspections, and reporting
- Horticulture – Nutrient management
- Engineering – Contract requirements and enforcement
- Contracting – Contract language
- Facilities – Grounds and facilities maintenance
- Operations – Grounds

3.0 OTHER ENTITIES USED TO IMPLEMENT PORTIONS OF ANC's MS4 PROGRAM PLAN

ANC does not rely on other entities to implement portions of their Program Plan.

4.0 MINIMUM CONTROL MEASURES

This section of the Program Plan consists of the MCMs that ANC must develop, implement, and enforce. For the purpose of ANC's General Permit and the Program Plan, and due to ANC's being a single Federal facility, "public" is defined as ANC employees and contractors who, through their job duties, may impact stormwater. ANC will include the "visiting public," defined as people who visit the facility, in MCM BMPs where applicable to augment its Program Plan goals.

4.1 Public Education and Outreach

ANC designed their public education and outreach program to:

1. Increase the public's knowledge of how to reduce stormwater pollution;
2. Increase the public's knowledge of hazards and legal implications associated with illegal discharges and improper disposal of wastes; and
3. Implement a diverse program with targeted strategies towards individuals and groups who are most likely to have significant stormwater impacts.

4.1.1 High-Priority Stormwater Issues at ANC

The General Permit requires ANC to select three or more high-priority stormwater issues on which to educate their public. **Table 4-1** identifies the issues ANC selected.

Table 4-1: High-Priority Stormwater Issues

Issue	Explanation of Importance	Measures/Actions to the Public Can Take to Minimize Impacts	Contact Name and Number for More Information
Illicit Discharge Detection and Elimination	Only stormwater should enter ANC's MS4	• Do not discharge, dump, or spill anything into ANC's MS4 • Report illicit discharges and spills • Follow SOPs	Environmental Program (703) 614-0520
Good Housekeeping	Maintain a clean site to prevent pollutants from entering ANC's MS4	• Follow good housekeeping procedures described in the Stormwater Pollution Prevention Plan (SWPPP) • Collect litter	Environmental Program (703) 614-0520
Minimizing Potential Pollutants	ANC's stormwater ultimately discharges to the Chesapeake Bay	• Nutrient Management • Planting and protecting vegetation that reduce runoff and stormwater pollution • Total Maximum Daily Load (TMDL) pollutant load reductions	Environmental Program (703) 614-0520

4.1.2 Strategies to Communicate High-Priority Stormwater Issues to ANC's Public

ANC will use at least two of the strategies per year listed in **Table 4-2** to communicate high-priority stormwater issues to the public. **Table 4-2**, analogous to Table 1 in the General Permit, lists examples provided by Virginia Department of Environmental Quality (VDEQ) and specific strategies ANC may implement based on its unique mission and historical significance.

Table 4-2: Strategies for Public Outreach and Education at ANC

Strategies	Examples Listed in General Permit	Potential Strategies at ANC
Traditional written materials	Informational brochures, newsletters, fact sheets, utility bill inserts, recreational guides for targeted groups of citizens	• Informational brochures and flyers (English and Spanish) • Flyers posted in employee common areas (e.g., break rooms, restrooms, information bulletin boards) • Facility-wide emails or newsletters
Alternative materials	Bumper stickers, refrigerator magnets, t-shirts, drink koozies	• Printed water bottles for employees • Stickers or magnets distributed at employee training events and/or tours for the visiting public

Table 4-2: Strategies for Public Outreach and Education at ANC		
Strategies	**Examples Listed in General Permit**	**Potential Strategies at ANC**
Signage	Temporary or permanent signage in public places or facilities, vehicle signage, bill boards, or storm drain stenciling	• Storm drains marked with "Dump No Waste Drains to Chesapeake Bay" • Signs posted in employee common areas (e.g., break rooms, restrooms, information bulletin boards) • Temporary signs at construction sites highlighting new stormwater management facilities or strategies
Media materials	Information disseminated through electronic media, radio, televisions, movie theater, newspaper	• N/A
Speaking engagements	Presentations to school, church, industry, trade, special interest, or community groups	• Host educational arboretum and rain garden tours and events for the visiting public and distribute brochures to attendees
Curriculum materials	Materials developed for school-aged children, students at local colleges or universities, or extension classes offered to local citizens	• Host educational arboretum and rain garden tours and events geared toward visiting children and school groups
Training materials	Materials developed to disseminate during workshops offered to local citizens, trade organization, or industrial officials	• Employee training presentations focused on stormwater management, spill response, recognition and reporting of illicit discharges, good housekeeping, and pollution prevention

ANC will use the following strategies to promote stormwater issues during this permit cycle:

- Brochures to inform and educate ANC public on identifying, preventing, and reporting illicit discharges, good housekeeping, and spill reporting
- Flyers describing good housekeeping practices, illicit discharge detection protocols and spill reporting
- Marking storm drains with "Dump No Waste Drains to Chesapeake Bay" to prevent illicit discharges and encourage good housekeeping
- Employee training presentation materials focused on preventing illicit discharges and spill reporting and response
- Arboretum tours and brochures that discuss plants and horticulture practices that help control stormwater runoff and pollution
- Rain garden tours and brochures that include information about how they reduce nutrients and sediment in stormwater runoff

4.1.3 MCM Evaluation and Implementation

ANC will evaluate the Public Outreach and Education MCM using the following measurable goals:

- Number of brochures and flyers distributed
- Number of storm drains marked "Dump No Waste Drains to Chesapeake Bay"
- Number of training sessions and attendees
- Number of tours and attendees

ANC's Environmental Program is responsible for implementing the BMPs in this MCM.

4.1.4 Program Plan Compliance

Table 4-3 summarizes ANC's public education and outreach program and implementation plan.

Table 4-3: ANC's Public Education and Outreach Program Implementation Plan

High-Priority Stormwater Issue	Rationale for Selection	Positive Impact on Stormwater	Intended Public Audience	Strategies for Communicating Message	Time Period for Communicating Message
Illicit Discharge Elimination	Illicit discharges are a significant contributor of pollutants and are prohibited under ANC's permit	Reduce pollutants entering stormwater	ANC facilities and maintenance employees	Training, emails, brochures, flyers; storm drain marking	• Annual training events • Written materials distributed periodically throughout the permit term • Storm drains marked periodically throughout the permit term
Good Housekeeping	ANC takes pride in maintaining a clean facility and this can translate to improving stormwater quality	• Reduce pollutants entering stormwater • Prevent illicit discharges	ANC facilities and maintenance employees	Training, brochures, flyers, signs, emails	• Annual training events • Written materials distributed periodically throughout the permit term
Minimizing Potential Pollutants	ANC is located in the Chesapeake Bay watershed and is committed to helping improve water quality	• Reduce and minimize pollutants entering stormwater	• Visiting Public • ANC facilities and maintenance employees	Tours, brochures, training; flyers, signs, emails	• Tours several times per year • Annual training events • Written materials distributed periodically throughout the permit term

4.1.5 Annual Reporting Requirements

Annual Reports will include the following:

- A list of the high-priority stormwater issues ANC addressed in its public education and outreach program; and
- A list of the strategies ANC used to communicate each high-priority stormwater issue.

4.2 Public Involvement and Participation

ANC's public involvement and participation plan encompasses procedures to address the items listed in **Table 4-4**.

Table 4-4: Procedures to Address Public Reports, Input, and Comments	
Type of Comment or Input	**Procedures**
Public reporting of potential illicit discharges, improper disposal, spills to ANC's MS4, complaints regarding land disturbance activities, and other stormwater pollution concerns	Any employee or contractor who causes or observes a potential illicit discharge, improper disposal, or spill must immediately contact the ANC Environmental Compliance Program Manager at (703) 614-0520 and complete a Spill Reporting Form. Complaints about land disturbance activities and other stormwater pollution concerns can be submitted to ANC's Environmental Compliance Program Manager via email, phone, or in-person.
Public input on ANC's MS4 program	Input on the MS4 program can be submitted to ANC's Environmental Compliance Program Manager via email, phone, or in-person.
Receiving, responding to, and maintaining documentation of public input and complaints, and ANC's response	ANC's Environmental Compliance Program Manager will respond in writing to each input and complaint. For reports of potential illicit discharges, improper disposal, or spills, and concerns about land disturbing activities, an Environmental Program staff member will perform a site visit and follow Illicit Discharge Detection and Elimination (IDDE) written procedures (described in **Section 4.3**). ANC will maintain a copy of any findings and all responses for one year and include them in the Annual Report.

4.2.1 ANC's MS4 and Pollution Prevention Webpage

Within three months of the permit effective date, ANC will develop and maintain a public webpage dedicated to its MS4 program and stormwater pollution prevention. The visiting public can access the website via ANC's main website on any computer or electronic device. The stormwater website will include:

- The effective MS4 permit and coverage letter;
- ANC's most current Program Plan or location where the Program Plan can be accessed;
- The annual report for each year of the permit (within 30 days after submittal to VDEQ);
- A mechanism or guidance on how to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns; and
- Methods for how the public can provide input on ANC's MS4 program.

ANC will develop and maintain a file system on its intranet site dedicated to its MS4 program and stormwater pollution prevention. Employees and contractor can access the intranet site on any computer or electronic device connected to ANC's intranet site.

4.2.2 Public Involvement Opportunities Plan

ANC will conduct at least four public involvement activities from two or more of the categories listed in **Table 4-5**. **Table 4-5** is analogous to Table 2 in the General Permit and lists public involvement categories as listed in the General Permit, examples provided by VDEQ, and specific strategies ANC may implement based on its unique mission and historical significance.

Table 4-5: Public Involvement Opportunities		
Public Involvement Opportunity Categories	**Examples Provided in General Permit**	**How ANC Provides Public Involvement Opportunities and Activities**
Monitoring	Establish or support citizen monitoring group	NA
Restoration	Stream or watershed clean-up day, adopt-a-water way program	• Host voluntary clean-up days along stream channels, outfalls, and interconnections
Educational events	Booth at community fair, demonstration of stormwater control projects, presentation of stormwater materials to schools to meet applicable education Standards of Learning or curriculum requirements, watershed walks, participation on environmental advisory committees	• Host environmental tours and discuss stormwater management at ANC
Disposal or collection events	Household hazardous chemicals collection, vehicle fluids collection	• Hazardous materials inventory calls to determine materials for repurposing or disposing • Hazardous waste collection events to encourage employees to collect and dispose of hazardous wastes
Pollution prevention	Adopt-a-storm drain program, implement a storm drain marking program, promote use of residential stormwater BMPs, implement pet waste stations in public areas, adopt- a-street program.	• Continue a program to install storm drains imprinted with “Dump No Waste Drains to Chesapeake Bay” on new storm sewer inlets • Conduct street sweeping • Install trash receptacles • Promote use of urban stormwater BMPS in addition to those required

The activities ANC will offer to the public during this permit cycle are as follows:

- Host voluntary clean-up day(s) along stream channels, outfalls, and interconnections
- Educational tour(s) for ANC public and/or visiting public
- Hazardous materials inventory call(s) to determine materials for repurposing or disposing
- Hazardous waste collection events to encourage employees to collect and dispose of hazardous wastes
- Implement a program to label storm drains “Dump No Waste Drains to Chesapeake Bay”
- Conduct street sweeping

4.2.3 Coordination of Public Involvement Opportunities

ANC does not coordinate public involvement opportunities with other MS4s; however, the NPS, Arlington County, VDOT, Pentagon, and Joint Base Myers-Henderson Hall, all of which are regulated MS4s, either contribute to or receive stormwater from ANC’s MS4. ANC may consider opportunities to combine public outreach events in the future.

4.2.4 MCM Evaluation and Implementation

ANC will evaluate the Public Involvement and Participation MCM using the following measurable goals:

- Number of participants and number of trash bags filled during restoration clean-up days
- Number of attendees
- Amount of hazardous materials repurposed or disposed
- Amount of hazardous wastes collected and disposed
- Number of new storm drains labeled "Dump No Waste Drains to Chesapeake Bay" installed

ANC's Environmental Program is responsible for implementing the BMPs in this MCM.

4.2.5 Program Plan Compliance

Table 4-6 provides a summary of ANC's public involvement opportunities and activities.

Table 4-6: Public Involvement and Participation		
Public Involvement Webpages		
ANC's website address where the public can provide input on ANC's MS4 program and report potential illicit discharges, improper disposal, spills to the MS4; report complaints regarding land disturbing activities; or report other concerns about potential stormwater pollution: https://www.arlingtoncemetery.mil/. A stormwater-specific subpage will be established within 3 months of permit effective date, as described in Section 4.2.1)		
Public Involvement Opportunities Plan		
Public Involvement Activity	**Anticipated Time Period for Activity to Occur**	**Metric to Determine if the Activity Is Beneficial To Water Quality**
Voluntary clean-up days along stream channels, outfalls, and interconnections	At least once during permit term	• Number of participants • Number of trash bags filled
Educational events and tours for ANC public and/or visiting public	At least twice during permit term	• Reduction in illicit discharge and spill reports • Number of attendees • Number of brochures distributed
Hazardous materials call to determine materials that can be repurposed or disposed	At least once during permit term	Amount of hazardous materials repurposed or disposed
Hazardous waste collection	At least once during permit term	Amount of hazardous wastes collected and disposed
Pollution prevention activity focused on storm drain marking	Storm drain marking conducted at least twice during the permit term	Number of labeled storm drains installed
Removal of sediment and debris blocking stormwater inlets	Annually	Number of stormwater inlets cleaned

4.2.6 Annual Reporting Requirements

Annual Reports will include:

- A summary of all public input, including stormwater complaints, received on ANC's MS4 program and ANC's response;
- A link to ANC's MS4 program and stormwater website;

- A description of public involvement activities implemented by ANC;
- A report of the metric as defined for each activity and an evaluation as to whether or not the activity is beneficial to improving water quality; and
- The names of other MS4 permittees who participated in ANC's public involvement opportunities.

4.3 Illicit Discharge Detection and Elimination

ANC's IDDE program includes maintaining a storm sewer system map and information table, mechanisms to prohibit unauthorized nonstormwater discharges, and IDDE written procedures.

4.3.1 MS4 Map and Information Table

ANC will provide VDEQ with an MS4 map in geographic information system (GIS) format or portable document format (PDF), if GIS is not available, no later than July 1, 2019. ANC maintains an accurate storm sewer system map depicting the following:

- ANC's location within the 2010 Census Urbanized Area;
- MS4 outfalls, interconnections to adjacent MS4s, and known discharge points;
- A unique identifier for each item mapped;
- Name and location of all receiving waters for MS4 outfalls;
- MS4 regulated service area; and
- Stormwater management facilities owned or operated by ANC.

ANC's storm sewer system information table includes the following:

- Unique identifier for each item, corresponding to the MS4 map;
- Latitude and longitude of each outfall or interconnection;
- Regulated acreage draining to each MS4 outfall and interconnection;
- Receiving water bodies or adjacent MS4s;
- 6th Order Hydrologic Unit Code (HUC) for the receiving water bodies;
- Impairment of the receiving water bodies as listed in the Virginia 2016 305(b)/303(d) Water Quality Assessment Integrated Report;
- Predominant land use for each outfall discharging to an impaired water (none of ANC's outfalls discharge to an impaired water); and
- EPA-approved TMDL and wasteload allocations assigned to ANC.

ANC will update its storm sewer system map and information table with new outfalls and interconnections constructed and/or newly approved TMDLs by October 1st of each permit year. **Appendix A** includes a copy of the latest map and information table. ANC will also provide written notification to downstream or adjacent MS4s of any known physical interconnections established or discovered after the effective date of this permit. Copies of such notifications will be included in **Appendix A**.

4.3.2 Legal Mechanisms to Prohibit Nonstormwater Discharges

ANC's existing legal authority provides adequate authority to prohibit nonstormwater discharges. ANC is a United States (U.S.) Army facility with direct legal authority over the use and condition of the land and infrastructure it owns and operates within its legal boundaries. According to Army Regulation 600-20 (U.S. Army, revised 2014), which prescribes the policies and responsibilities for the U.S. Army Command, and Edition Fourteen of The Military Commander and Law (Watson, 2017), ANC's Commanders have the authority to ensure the property is operated in accordance with the applicable regulations including the General Permit.

ANC prohibits nonstormwater discharges into its MS4 using the following information:

- MS4 Program Plan including written IDDE procedures;
- SWPPP; and
- Nonstormwater discharge prohibition language incorporated into contracts.

4.3.3 Illicit Discharge Detection and Elimination Written Procedures

ANC developed and implemented written procedures to detect, identify, and address nonstormwater discharges to its MS4 in accordance with the General Permit. **Appendix B** includes written IDDE procedures. ANC conducts annual dry weather field screening of all MS4 outfalls and interconnections to adjacent MS4s; inspections in response to complaints; and follow-up investigations as needed to ensure that corrective actions are completed. ANC uses the Dry-Weather Outfall and Interconnection Inspection and Suspect Illicit Discharge checklists, included in **Appendix B.**

4.3.4 MCM Evaluation and Implementation

ANC will evaluate the IDDE MCM using the following measurable goals:

- Accuracy of ANC's storm sewer system map and information table;
- Number of illicit discharges reported, investigated, and corrected, if needed; and
- Number of dry-weather inspections.

ANC's Environmental Program is responsible for implementing the BMPs in this MCM.

4.3.5 Program Plan Compliance

Appendix A contains the following IDDE MCM information required by the General Permit:

- A copy of ANC's current MS4 map;
- A copy of ANC's current storm sewer system information table; and
- Copies of written notification of new physical interconnections given to other MS4s by ANC.

Appendix B contains ANC's IDDE written procedures and checklists.

ANC will provide the MS4 map and information table within 14 days should VDEQ request it. Changes at ANC resulting in revisions to the written IDDE procedures and/or MS4 map will be incorporated into the document(s) and included in **Appendix A** and **Appendix B**.

4.3.6 Annual Reporting Requirements

Annual Reports will include:

- A confirmation statement indicating the MS4 map and information table are current as of June 30 of the reporting year;
- The total number of outfalls and interconnections ANC screened during the reporting period as part of the dry weather screening program; and
- A list of illicit discharges to ANC's MS4, including spills reaching ANC's MS4, with the following information:
  - The source of illicit discharge;
  - The date that the discharge was observed, reported, or both;
  - Whether the discharge was discovered by ANC during dry weather screening, reported by the public, or other method (describe);
  - How the investigation was resolved;
  - A description of any follow-up activities; and
  - The date the investigation was closed.

4.4 Construction Site Stormwater Runoff Control

ANC requires implementation of erosion and sediment control (ESC) measures associated with stormwater runoff from land disturbing activities greater than 2500 square feet. ANC uses their legal authority, described in **Section 4.3.2**, and contract requirements to require contractor compliance with VDEQ standards, specifications, and permits. ANC confirms compliance by performing construction site inspections.

4.4.1 Legal Authority

ANC's legal authority, described in **Section 4.3.2**, provides authority to address stormwater discharges to its MS4 from land disturbing activities. Furthermore, ANC develops project-specific contract language to address discharges from land disturbing activities. ANC requires contractors to comply with 9VAC25-880, 9VAC25-870, and VDEQ-approved ESC plans.

4.4.2 Standards, Specifications, and Inspections

ANC, as a federal entity, has not developed their own standards and specifications in accordance with Virginia Erosion and Sediment Control Law (§ 62.144.15:51 et seq. of the Code of Virginia) and Virginia Erosion and Sediment Control Regulations (9VAC25-840). ANC requires contractors to perform inspections for land-disturbing activities as defined in § 62.144.15:51 of the Code of Virginia that result in disturbance activities greater than 2500 square feet. These inspections will occur as follows:

- During or immediately following initial installation of erosion and sediment controls;
- At least once per every two-week period;

- Within 48 hours following any runoff producing storm event; and
- At the completion of the project prior to the release of any performance bond.

ANC requires contractors to provide a Responsible Land Disturber Certificate with which the contractor will comply. ANC periodically confirms compliance with the contractor's construction stormwater permit through visual inspection of the land-disturbing activity. ANC's construction inspection procedures include an inspection report and checklist included in **Appendix C**. If corrective action is required, ANC will use contracts between ANC and the contractor to enforce compliance.

Contractors must implement appropriate controls to prevent nonstormwater discharges to the MS4. These prohibited discharges include, but are not limited to, wastewater, concrete washout, fuels and oils, and other illicit discharges identified during either ANC's or the contractors' inspections. Nonstormwater discharges, other than those identified in 9VAC25-890-20 D and described in the Illicit Discharge Detection and Elimination Written Procedures (**Appendix B)** are not authorized by ANC's permit.

4.4.3 MCM Evaluation and Implementation

ANC will evaluate the Construction Site Runoff Control MCM using the following measurable goals:

- Number of ESC inspections performed by ANC; and
- Number compliance issues found and corrected.

Roles and responsibilities of ANC's units in implementing the construction site stormwater runoff control requirements include:

- Contracting – Develop and enforce contracts
- Engineering – Develop and incorporate stormwater language into construction contracts
- Environmental Program – Develop and incorporate stormwater language into construction contracts; inspect land disturbing activities for compliance with ESC plans and minimum standards; continue certification as ESC Combined Administrator.

4.4.4 Program Plan Compliance

Section 4.4.1 describes the legal authorities ANC uses to ensure control of stormwater runoff associated with land disturbing activities.

Section 4.4.2 describes ANC's written inspection procedures, documents, and schedule for inspection of ESC and how ANC requires compliance.

4.4.5 Annual Reporting Requirements

Annual Reports will include:

- Total number of inspections conducted; and
- Total number of enforcement actions implemented and the type of enforcement actions.

4.5 Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands

ANC addresses stormwater runoff entering its MS4 from newly constructed development by implementing a post-construction stormwater runoff management program that includes compliance with VDEQ regulations, an inspection and maintenance program consistent with the General Permit, and an electronic spreadsheet of stormwater management facilities and BMPs installed.

ANC assumes ownership of new BMPs when one of the following occurs:

- For projects larger than 1 acre that require a construction stormwater permit: Notice of Termination for is filed; or
- For projects less than 1 acre that do not require a construction stormwater permit: ANC receives notice of Beneficial Occupancy Determination.

4.5.1 ANC's Post-Construction Stormwater Runoff Control Compliance

ANC has not developed their own standards and specifications in accordance with the Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and Virginia Stormwater Management Regulations (9VAC25-870). ANC addresses post-construction stormwater runoff control by requiring compliance with 9VAC25-870. ANC confirms compliance through the maintenance and inspection program described in **Section 4.5.2**.

4.5.2 Stormwater Management Facilities Inspection and Maintenance Program

ANC owns and is responsible for all post-construction stormwater management facilities on its property and performs annual inspections, required maintenance, and as-needed maintenance discovered during inspections. **Appendix D** documents ANC's *Stormwater Management Facility Inspection and Maintenance Procedures* included in ANC's inspection and maintenance program for stormwater management facilities. The procedures contain the following:

- ANC's stormwater management facility inventory including BMP ID, type, and location;
- Annual inspection schedule;
- Maintenance activities and procedures; and
- Inspection checklists for each type of stormwater facility.

4.5.3 Stormwater Management Facilities Spreadsheet and Electronic Reporting

ANC maintains an electronic spreadsheet to track all stormwater management facilities. The spreadsheet includes all post-construction stormwater management facilities. The spreadsheet includes the following information:

- Stormwater management facility type;
- Stormwater management facility or BMP location as latitude and longitude;
- Acres treated by the stormwater management facility or BMP including total, pervious, and impervious acreage;
- Date (MM/YYYY) the facility was brought online or June 30, 2005, if unknown;

- The 6th Order HUC in which the stormwater management facility is located;
- Whether the stormwater management facility or BMP is owned or operated by the permittee or privately owned;
- Whether or not the stormwater management facility is part of the ANC's Chesapeake Bay TMDL Action Plan;
- If the facility is privately owned, whether a maintenance agreement exists; and
- The date of ANC's most recent inspection of the stormwater management facility or BMP.

ANC will update its spreadsheet no later than 30 days after a new stormwater management facility is brought online, a new BMP is implemented to meet TMDL load reductions, or an existing stormwater management facility is discovered. The latest version of the spreadsheet is included in **Appendix D.**

ANC uses the VDEQ Construction Stormwater Database, or other application as specified by VDEQ to report each stormwater management facility installed after July 1, 2014, to address the control of post-construction runoff from land disturbing activities for which ANC is required to obtain a General VPDES Permit for Discharges of Stormwater from Construction Activities.

By October 1st of each year, ANC will electronically report the stormwater management facilities and BMPs implemented between July 1 and June 30 for any practices not reported in accordance with General Permit Part I E 5 f. These include stormwater management facilities installed to control post-development stormwater runoff from land disturbing activities greater than 2500 square feet in accordance with the Chesapeake Bay Preservation Act regulations (9VAC25-830) and for which a General VPDES Permit for Discharges of Stormwater from Construction Activities was not required. ANC will use the DEQ BMP Warehouse and associated reporting template to complete the reporting.

4.5.4 MCM Evaluation and Implementation

ANC will evaluate the Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands MCM using the following measurable goals:

- Number of stormwater management facility inspections performed; and
- Stormwater facility database updates submitted to VDEQ.

Roles and responsibilities of ANC's units in implementing the post-construction stormwater runoff control program include:

- Contracting – Develop and enforce contracts
- Engineering – Develop and incorporate stormwater language into construction contracts; implement and enforce contracts
- Environmental Program – Develop and incorporate stormwater language into construction contracts; inspect stormwater management facilities and BMPs for compliance with contract drawings and documents using inspection checklists; coordinate maintenance
- Facilities Maintenance – Perform routine and as-needed maintenance of stormwater management facilities and BMPs.

4.5.5 Program Plan Compliance

Section 4.5.1 and **Section 4.3.2** include a description of ANC's legal authorities to ensure compliance with the Virginia Stormwater Management Act and Virginia Stormwater Management Program Regulation. Furthermore, ANC develops project-specific contract language to address design and construction of post-construction stormwater management facilities. Each contract is considered a new legal authority. ANC requires contractors to comply with 9VAC25-870.

ANC uses the Stormwater Management Facility Inspection and Maintenance Procedures and inspection checklists in **Appendix D** to inspect its stormwater management facilities.

Appendix D includes a copy of ANC's Stormwater Management Facility Spreadsheet.

4.5.6 Annual Reporting Requirements

Annual Reports will include the following:

- Total number of inspections conducted on stormwater management facilities owned or operated by ANC;
- A description of the significant activities (maintenance, repair, or retrofit) performed on each of ANC's stormwater management facilities to ensure it continues to perform as designed. (This does not include activities such as grass mowing or trash collection);
- A confirmation statement that ANC verified contractor submittal of stormwater management facility information through the Virginia Construction Stormwater General Permit database or other application as specified by VDEQ for those land disturbing activities for which the contractor was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part I E 5 f or a statement that neither ANC nor their contractors completed any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities during the reporting period; and
- A confirmation statement that ANC electronically reported BMPs using the VDEQ BMP Warehouse in accordance with Part I E 5 g and the date on which the information was submitted.

4.6 Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by ANC within the MS4 Service Area

ANC implements pollution prevention and good housekeeping practices throughout its facility to minimize and prevent pollutants from discharging to its MS4. Written procedures, a SWPPP, a Nutrient Management Plan (NMP), and training are key parts of ANC's pollution prevention and good housekeeping program.

4.6.1 Written Procedures for Pollution Prevention and Good Housekeeping

ANC maintains and implements a variety of written pollution prevention and good housekeeping procedures for activities such as road, street, and parking lot maintenance; equipment maintenance; and application, storage, disposal of pesticides, herbicides, and fertilizers. **Table 4-7** provides a list of ANC's written procedures and how they prevent stormwater pollution.

Table 4-7: Written Procedures for Pollution Prevention and Good Housekeeping		
Pollution Prevention Method	**Written Procedure**	**Location in Program Plan or at ANC**
Prevention of illicit discharges	IDDE Procedures (2018)	Appendix B
Ensure the proper disposal of waste materials including landscape wastes	SWPPP (2018)	Appendix E and ANC's intranet
	Internal SOPs (various versions and dates)	Various
Prevention of discharge of wastewater or vehicle wash water into ANC's MS4 without authorization under a separate VPDES permit	SWPPP (2018)	Appendix E and ANC's intranet
	IDDE Procedures (2018)	Appendix B
Require implementation of BMPs when discharging water pumped from utility construction and maintenance activities	SWPPP (2018)	Appendix E and ANC's intranet
	Utility and Maintenance Contracts	Contracting Department
	Internal SOPs (various versions and dates)	Various
	IDDE Procedures (2018)	Appendix B
Minimization of pollutants in stormwater runoff from bulk storage areas by using BMPs	SWPPP (2018)	Appendix E and ANC's intranet
	Spill Prevention, Control, and Countermeasure (SPCC) (2013)	Engineering Office
Prevention of pollution discharge into the MS4 from leaking automobiles and equipment	SWPPP (2018)	Appendix E and ANC's intranet
Ensure the application of materials, including fertilizers and pesticides is conducted in accordance with manufactures' recommendations	SWPPP (2018)	Appendix E and ANC's intranet
	NMP (2018)	Horticulture Department
	Integrated Pest Management Plan (IPMP) (2011)	Horticulture Department

Section 4.6.6 discusses ANC's employee training program with the written procedures outlined in **Table 4-7**.

4.6.2 High-Priority Areas with High Potential of Discharging Pollutants at ANC

Table 4-8 lists the high-priority activities, as defined in the General Permit, and areas where these activities occur at ANC.

Table 4-8: High-Priority Activities at ANC	
High-Priority Activity	**Applicable Area at ANC**
Composting Facilities	N/A
Equipment Storage and Maintenance Facilities	Operations Complex, Spoils Area, Contractor Staging Areas (CSA)
Materials Storage Yards	Operations Complex, Spoils Area, CSA
Pesticide Storage Facilities	Operations Complex, CSA
Public Works Yards	Operations Complex, Spoils Area, CSA
Recycling Facilities	N/A
Salt Storage Facilities	Operations Complex
Solid Waste Handling and Transfer Facilities	Operations Complex, Spoils Area, CSA, facility-wide
Vehicle Storage and Maintenance Yards	Operations Complex, Spoils Area, CSA, facility-wide

Table 4-9 lists high-priority activities with a high potential of discharging pollutants, as defined in the General Permit and the applicability to ANC.

Table 4-9: High-Priority Activities with High Potential of Discharging Pollutants at ANC	
High-Priority Activity with High Potential of Discharging Pollutants	**Applicability to ANC**
Areas where residuals from using, storing, or cleaning machinery or equipment remain and are exposed to stormwater	ANC stores and uses equipment outside at the Operations Complex, Spoils Area, and CSA in areas exposed to stormwater.
Materials or residuals on the ground or in stormwater inlets from spills or leaks	Materials and residuals may be present on the ground at the Operations Complex, Spoils Area, CSA, and facility-wide.
Material handling equipment	ANC stores material handling equipment outside at the Operations Complex, Spoils Area, and CSA. ANC operates material handling equipment at the Spoils Area, CSA, and facility-wide.
Materials or products that would be expected to be mobilized in stormwater runoff during loading/ unloading or transporting activities (e.g., rock, salt, fill dirt)	ANC conducts materials loading/unloading activities at the Operations Complex, Spoils Area, CSA, and facility-wide. Materials or products from these activities are likely to be mobilized in stormwater.
Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants)	ANC stores bulk materials (e.g., soil, green waste, mulch, top soil, etc.) outdoors at the Spoils Area and CSA.
Materials or products expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers	ANC does not store materials or products in open, deteriorated, or leaking storage drums, barrels, tanks, and similar containers.
Waste material except waste in covered, non-leaking containers (e.g., dumpsters)	ANC stores green and landscape waste in uncovered, non-leaking dumpsters at the Spoils Area and CSA.
Application or disposal of process wastewater (unless otherwise permitted)	ANC does not apply or dispose of process wastewater.
Particulate matter or visible deposits of residuals from roof stacks, vents, or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.	ANC does not have air emission sources resulting in particulate matter or visible deposits of residuals.

4.6.3 Stormwater Pollution Prevention Plan

Appendix E includes ANC's SWPPP.

ANC conducts a Comprehensive Site Compliance Evaluation, as described in its SWPPP, no later than June 30th of each year. As part of this evaluation, ANC assesses the entire facility to determine if any new high-priority areas with high potential to discharge pollutants must be added to the SWPPP. ANC will add any newly identified areas to the SWPPP by December 31st of the same year. If activities change at ANC such that the area no longer meets the criteria of a high-priority facility with a high potential to discharge pollutants, ANC may remove the facility, area, or activity from the SWPPP. ANC documents all annual SWPPP reviews and updates as part of the Comprehensive Site Compliance Evaluation.

ANC will review the contents of the SWPPP no later than 30 days after any unauthorized discharge, release, or reportable spill to determine if additional measures are necessary to prevent future releases. ANC will make any necessary SWPPP updates within 90 days of the discharge.

Employees and contractors can access the SWPPP in electronic format on any computer or electronic device connected to ANC's intranet site. Additionally, ANC uses the SWPPP as part of its training.

4.6.4 Turf and Landscape Nutrient Management Plan

ANC maintains and implements a turf and landscape NMP wherever nutrients are applied to a contiguous area greater than 1 acre. The NMP was developed by ANC's Horticulture Department planner who is certified in accordance with § 10.1-104.2 of the Code of Virginia. The plan requires all applications follow manufacturer recommendation, including nutrients applied to achieve final stabilization of a land disturbance project.

4.6.5 Deicing

ANC does not apply deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, sidewalks, or other paved surfaces.

4.6.6 Training

Table 4-10 describes ANC's training plan.

Table 4-10: SWPPP Training at ANC

Training Topic	Attendees	Frequency
Recognition and reporting of illicit discharges	Facility personnel	Annually and New Comers Training
Pollution prevention and good housekeeping associated with road, street, and parking lot maintenance	Employees performing road, street, and parking lot maintenance	Annually and New Comers Training
Pollution prevention and good housekeeping associated with maintenance, public works, or recreational facilities	Employees working in or around maintenance, public works, or recreational facilities	Annually and New Comers Training
Virginia Pesticide Control Act	Contractors hired by ANC who apply pesticides and herbicides	As required
Virginia Erosion and Sediment Control Law	Employees and contractors serving as plan reviewers, inspectors, program administrators, or construction site operators	As required
Virginia Stormwater Management Act	Employees implementing the stormwater program	As required
Spill response	Employees who could cause or respond to Petroleum, Oils, and Lubricants (POL) spills	Annually and New Comers Training

ANC maintains documentation of each training event for a minimum of 3 years, including date, number of attendees, and objective.

4.6.7 MCM Evaluation and Implementation

ANC will evaluate the Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by ANC MCM using the following measurable goals:

- SWPPP effectiveness at preventing illicit discharges and promoting good housekeeping;
- NMP effectiveness; and
- Number of attendees at training program events.

Roles and responsibilities of ANC's units in implementing the Pollution Prevention and Good Housekeeping MCM include:

- Contracting – Develop and enforce contracts
- Environmental Program – Enforce the SWPPP, perform Comprehensive Site Compliance Evaluation, and training
- Horticulture – Implement NMP
- Facilities Maintenance – Follow SWPPP procedures
- Grounds – Follow SWPPP procedures

4.6.8 Program Plan Compliance

Table 4-7 lists ANC's written procedures for the operations and maintenance activities required in Part I E 6 a and the document locations.

Section 4.6.2 describes ANC's high-priority facilities and whether the facility has a high potential to discharge pollutants into stormwater.

Table 4-11 lists lands for which turf and landscape nutrient management plans are required, total acreage for each area, and the number of individual turf areas within each unit. The Turf and Nutrient Management Plan, dated June 1, 2008, is available in the Horticulture Department Office.

Table 4-11: Turf and Landscape Nutrient Management Plan

List of Lands for Which the Plans Are Required	Total Acreage on Which Nutrients Are Applied (acres)	Number of Individual Turf Areas
Turf Mgmt Unit 1	35.4	8
Turf Mgmt Unit 2	60.1	9
Turf Mgmt Unit 3	192.7	28
Turf Mgmt Unit 4	159.6	20
Turf Mgmt Unit 5	28.7	4
Turf Mgmt Unit 6	29.9	4
Total	**506.4**	**73**

ANC uses the following mechanisms to ensure contractors working on their behalf implement good housekeeping procedures, pollution prevention procedures, and SWPPP:

- All written procedures included in **Table 4-7**;
- Specific contract language; and
- Compliance with VDEQ regulations including VPDES permits.

Section 4.6.6 discusses ANC's written training plan with details provided in **Table 4-10.**

4.6.9 Annual Reporting Requirements

Annual Reports will include the following:

- Summary of any daily operational procedures developed or modified in accordance with Part I E 6 a during the reporting period;
- Summary of any new SWPPPs developed in accordance Part I E 6 c during the reporting period;
- Summary of any SWPPPs modified in accordance with Part I E 6 f during the reporting period;
- Summary of any new turf and landscape NMPs developed including the following:
  - Location and total acreage of each area; and
  - Date of approval
- List of training events conducted at ANC including the following information:
  - Date;
  - Number of employees attending; and
  - Objective(s).

5.0 ANNUAL REPORTING AND REVISIONS

ANC will revise this Program Plan throughout the life of the General Permit as part of the process to reduce pollutant loading and protect water quality to the MEP. ANC will summarize revisions to the Program Plan in its Annual Reports for submittal to the VDEQ on October 1st of each permit year, covering the previous permit period from July 1 through June 30.

APPENDIX A

STORM SEWER SYSTEM MAP
STORM SEWER SYSTEM INFORMATION TABLE
WRITTEN NOTIFICATION OF ANY KNOWN PHYSICAL MS4 INTERCONNECTIONS

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Arlington National Cemetery - MS4 Map

0 0.125 0.25 0.5 Miles

N W E S

Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet

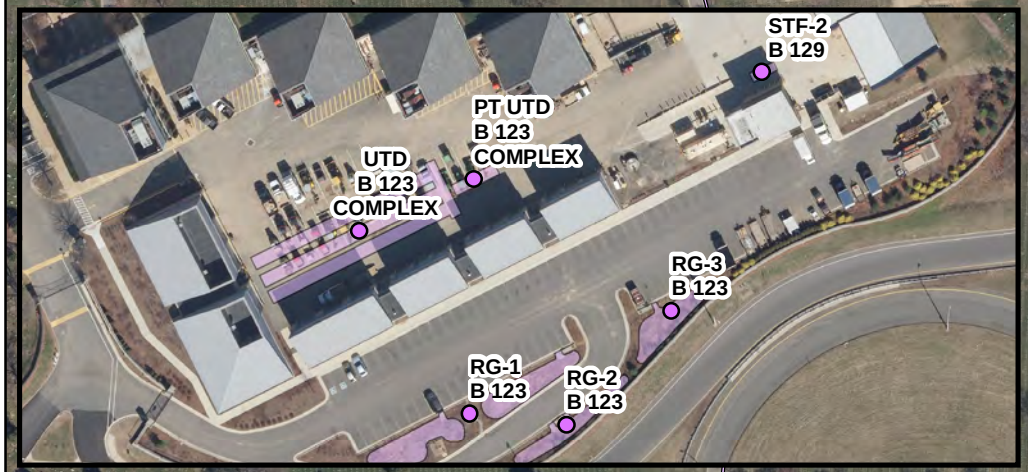
Legend

- Stormwater_BMP
- MS4 Outfall / Interconnection
- StormwaterUtilitySegment
- High Priority Area
- Installation_Boundary

Arlington National Cemetery

Stormwater BMP Control Measures

Map 1 of 2



Name	Location	POINT_X	POINT_Y
PP-1	SIDEWALK EISENHOWER	-77.066279	38.876092
PP-2	SIDEWALK MEIGS	-77.076883	38.880023
PT UTD	B 123 COMPLEX	-77.062587	38.87119
RG-1	B 123	-77.062606	38.870717
RG-2	B 123	-77.062358	38.87069
RG-3	B 123	-77.062082	38.870917
STC-1	COL 7	-77.060522	38.874853
STC-2	COL 8	-77.060027	38.876749
STC-3	COL 9N	-77.059791	38.876574
STC-4	COL 9S	-77.05998	38.874951
STC-5	SEC 76	-77.062114	38.880872
STC-6	SEC 78	-77.059327	38.877506
STC-7	YORK	-77.061929	38.876867
STF-2	B 129	-77.061838	38.871398
STREET SWEEPING	FACILITY WIDE	-77.063842	38.877367
UTD	B 123 COMPLEX	-77.062885	38.871089

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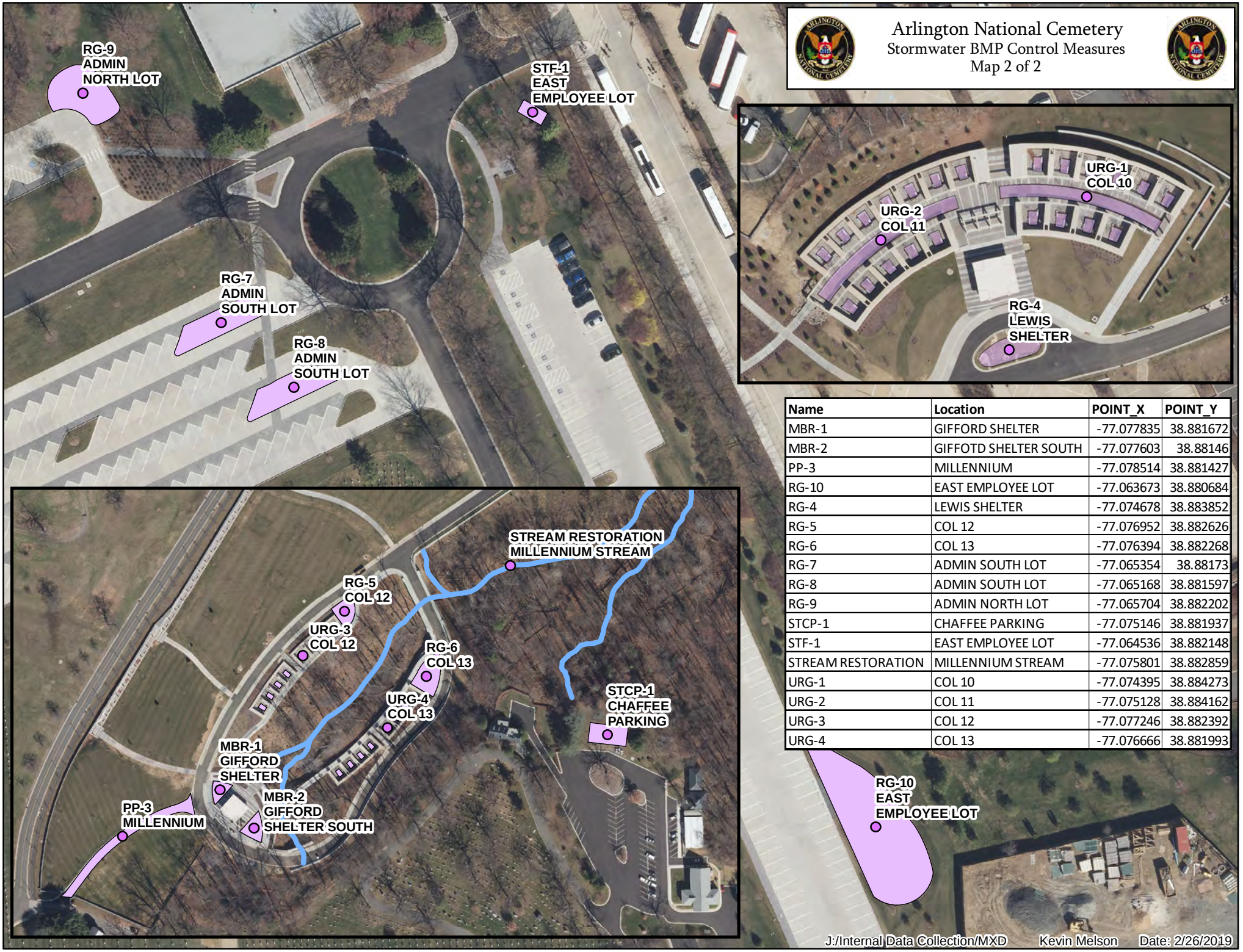
Arlington National Cemetery
Stormwater BMP Control Measures
Map 2 of 2



Name	Location	POINT_X	POINT_Y
MBR-1	GIFFORD SHELTER	-77.077835	38.881672
MBR-2	GIFFOTD SHELTER SOUTH	-77.077603	38.88146
PP-3	MILLENNIUM	-77.078514	38.881427
RG-10	EAST EMPLOYEE LOT	-77.063673	38.880684
RG-4	LEWIS SHELTER	-77.074678	38.883852
RG-5	COL 12	-77.076952	38.882626
RG-6	COL 13	-77.076394	38.882268
RG-7	ADMIN SOUTH LOT	-77.065354	38.88173
RG-8	ADMIN SOUTH LOT	-77.065168	38.881597
RG-9	ADMIN NORTH LOT	-77.065704	38.882202
STCP-1	CHAFFEE PARKING	-77.075146	38.881937
STF-1	EAST EMPLOYEE LOT	-77.064536	38.882148
STREAM RESTORATION	MILLENNIUM STREAM	-77.075801	38.882859
URG-1	COL 10	-77.074395	38.884273
URG-2	COL 11	-77.075128	38.884162
URG-3	COL 12	-77.077246	38.882392
URG-4	COL 13	-77.076666	38.881993

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STORMWATER DISCHARGE INFORMATION TABLE							
ID Number	**Latitude**	**Longitude**	**Estimated Regulated Acreage Drainage Area**	**Receiving Water Body or MS4**	**6th Order Hydrologic Unit Code**	**Impairment of the Receiving Water Bodies as listed in the Virginia 2016 305(b)/303(d) Water Quality Assessment Integrated Report**	**EPA-approved TMDLs and Wasteload Allocations Assigned to ANC**
MS4 Outfalls							
OF8-SEC74	38.879414	-77.060341	60.17	Boundary Channel (pipe runs beneath VDOT and NPS property)	20700100103	Not impaired	Chesapeake Bay TMDL
Interconnections							
IN1-SEC52	38.886111	-77.065278	107.94	VDOT	N/A	N/A	N/A
IN2-SEC36A	38.883698	-77.066246	11.00	NPS	N/A	N/A	N/A
IN3-SEC36	38.883611	-77.068611	0.75	NPS	N/A	N/A	N/A
IN4-SEC31	38.883333	-77.068889	2.72	NPS	N/A	N/A	N/A
IN5- Tram	38.882222	-77.067222	31.95	NPS	N/A	N/A	N/A
IN6-PG North	38.883333	-77.063333	5.40	VDOT	N/A	N/A	N/A
IN7-PG South	38.882503	-77.063333	20.96	VDOT	N/A	N/A	N/A
IN9-SEC69	38.873056	-77.059167	362.88	Pentagon Lagoon	N/A	N/A	N/A
IN10-B123	38.870556	-77.062222	3.99	VDOT	N/A	N/A	N/A
IN11-SEC8	38.870278	-77.066389	12.88	Arlington County	N/A	N/A	N/A
IN12-SEC29	38.882222	-77.075278	2.06	NPS	N/A	N/A	N/A

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APPENDIX B

ILLICIT DISCHARGE DETECTION AND ELIMINATION WRITTEN PROCEDURES

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1.0 INTRODUCTION AND LEGAL AUTHORITIES

ANC wrote these illicit discharge detection and elimination (IDDE) procedures to detect, identify, and address unauthorized nonstormwater discharges, including illegal dumping, to its MS4 with the goal of eliminating the unauthorized discharge. An illicit discharge includes any unauthorized discharge to ANC's MS4 not composed entirely of stormwater. These do not include the following allowable nonstormwater discharges in accordance with 9VAC25-890-20 D 3:

- Dechlorinated water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated pumped ground water
- Discharges from potable water sources including waterline flushing
- Foundation drains
- Air conditioning condensate
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Street wash water
- Discharges or flows from firefighting activities

As United States (U.S.) Army facility, ANC has direct legal authority over the use and condition of the land and infrastructure it owns and operates within its legal boundaries. According to Army Regulation 600-20 (U.S. Army, revised 2014), which prescribes the policies and responsibilities for the U.S. Army Command, and Edition Fourteen of The Military Commander and Law (Watson, 2017), ANC's Commanders have the authority to ensure the property is operated in accordance with the applicable regulations including the General Permit.

ANC has the following legal authorities, policies, and standard operating procedures (SOPs) in place to eliminate ongoing illicit discharges:

- Project-specific contract language prohibiting illicit discharges
- Stormwater Pollution Prevention Plan (SWPPP)
- Spill Prevention, Control, and Countermeasure Plan
- Hazardous Materials and Hazardous Waste Management Plan
- Integrated Pest Management Plan
- Nutrient Management Plan
- Flammable Storage Lockers SOPs
- Heavy Equipment Preventive Maintenance Check and Services
- Small spills SOPs
- Hazardous material and POL storage SOPs

ANC implements source controls, plans, and procedures to minimize illicit discharges to its MS4 and uses its direct legal authority to eliminate illicit discharges.

2.0 DRY WEATHER FIELD SCREENING PROTOCOLS

ANC performs dry weather field screening of all 12 MS4 outfalls and interconnections using protocols written herein to detect, identify, and eliminate illicit discharges.

2.1 Outfall and Interconnection Prioritization

ANC prioritized outfall and interconnection screenings based on land use and drainage area size. ANC considers drainage areas with land uses such as grounds and facility maintenance areas, high-traffic visitor areas, and associated parking lots as high-priority because these areas pose the greatest threat of releasing nonstormwater discharges. Gravesite areas and ancillary roads and parking areas throughout ANC are maintained by ANC's landscaping and grounds crews in a controlled manner and pose a low threat of contributing pollutants to the MS4. Areas with mixed land use are considered medium priority. **Table 2-1** provides a list of ANC's outfalls and interconnections and priority for screening.

Table 2-1: Outfalls Screening Prioritization

ID Number	Priority	Rationale for Prioritization
MS4 Outfalls		
OF8-SEC74	High	Land use – Contractor staging area, gravesites, columbarium, roads, parking lots
Interconnections to Adjacent MS4a		
IN1-SEC52	Medium	Land use – gravesites, roads, visitor buildings, Millennium site
IN2-SEC36A	Low	Land use – gravesites
IN3-SEC36	Low	Land use – gravesites, roads
IN4-SEC31	Low	Land use – gravesites, roads
IN5- Tram	Low	Land use – gravesites, roads, parking
IN6-PG North	High	Land use – Administration building, Welcome Center, roads, parking lots, parking garage
IN7-PG South	Medium	Land use – roads, parking lots, parking garage
IN9-SEC69	High	Land use – Service Complex, contractor staging area, spoils area, gravesites, columbarium, roads, parking lots
IN10-B123	High	Land use – Service Complex parking lot and gate
IN11-SEC8	Low	Land use – gravesites, roads, parking
IN12-SEC29	Low	Land use – roads, administrative buildings

2.2 Outfall and Interconnection Screening Schedule

With less than 50 outfalls and interconnections, ANC will screen a outfalls and interconnections annually. Several discharge points are inaccessible and screening occurs at the nearest upstream access point. ANC performs dry weather screening of select outfalls and interconnections annually as described in the suggested schedule in **Table 2-2**.

Table 2-2: Dry Weather Screening Annual Schedule

Quarter	Outfall or Interconnection Screened	Priority	Screening Location
1	IN9-SEC69	High	Storm drain upstream
	IN10-B123	High	Storm drain upstream
	IN11-SEC8	Low	Storm drain upstream
2	IN6-PG North	High	Storm drain upstream
	IN7-PG South	Medium	Storm drain upstream
	OF8-SEC74	High	Storm drain upstream
3	IN1-SEC52	Medium	Discharge point
	IN12-SEC29	Low	Discharge point

Table 2-2: Dry Weather Screening Annual Schedule			
Quarter	**Outfall or Interconnection Screened**	**Priority**	**Screening Location**
4	IN2-SEC36A	Low	Storm drain upstream
	IN3-SEC36	Low	Storm drain upstream
	IN4-SEC31	Low	Storm drain upstream
	IN5- Tram	Low	Storm drain upstream

2.3 Dry Weather Field Screening Information Tracking

ANC uses the Dry Weather Field Screening Checklist and Suspected Illicit Discharge Investigation Checklist, included in **Appendix B-1** and **Appendix B-2,** respectively, to screen outfalls and interconnections and investigate suspected illicit discharges. The checklists contain the following as required in the General Permit:

Table 2-1: Contents of Checklists	
Checklists	**Contents**
Dry Weather Field Screening Checklist	• Outfall or interconnection unique identifier • Time since last precipitation event • Estimated quantity of last precipitation event • Site descriptions – outfall or interconnection type and land uses • Whether or not a discharge was observed
Suspected Illicit Discharge Investigation Checklist	• If discharge observed – estimated flow rate (width, depth, travel time/length) • Test for chlorine • Visual characteristics – odor, color, clarity, floatables, deposits, stains, vegetation, structural condition, biology • Investigation tracking

ANC retains the checklists in **Appendix B-1** and tracks all illicit discharge investigations in a database and/or spreadsheet.

3.0 TIMEFRAME AND PRIORITY TO INVESTIGATE OBSERVED NONSTORMWATER DISCHARGE

If any discharge to ANC's MS4 is observed or reported, ANC personnel conduct an investigation to attempt to identify and locate the source of the discharge and to determine if it is an unauthorized nonstormwater discharge. ANC uses the timeframes provided in **Table 3-1** to begin the investigation.

Table 3-1: Timeframes to Begin Investigation of Observed Nonstormwater Discharge	
Suspected Discharge Type	**Timeframe**
Sanitary sewage	within 24 hours of observance
Discharge that may put human health and public safety at risk	within 24 hours of observance
Non-life-threatening discharge	within 7 days of observance

4.0 METHODOLOGIES TO DETERMINE SOURCE

ANC uses the following steps to determine the source of an observed illicit discharge:

1. Storm drain investigations using one of the following:
   - Work progressively up from the outfall or interconnection and investigate individual stormwater intakes (drains, inlets, drainage ditches, stormwater management facilities, etc.);
   - Split the facility into equal drainage segments and investigate manholes at strategic points throughout the storm drain system; or
   - Work progressively down the trunk.
2. Drainage area investigations using the following:
   - Review ANC's storm sewer system map of area(s) that drain(s) to outfall or interconnection location(s);
   - Pinpoint area(s) on site that drain(s) to outfall or interconnection location(s); and
   - Use aerial photography analysis, if necessary.
3. On-site investigations to find specific sources including the following:
   - Observations of the storm drain;
   - Interviews with personnel; or
   - Additional testing measures such as dye testing or smoke testing.

Once ANC confirms the discharge is illicit and determines the source, ANC personnel will implement corrective actions to eliminate the discharge and prevent it from reoccurring.

If ANC is unable to identify the source of an illicit discharge within 6 months of starting an investigation, they will document that the source remains unidentified in the database described in Section 6.0. If the observed discharge is intermittent, ANC will document all attempts to observe the discharge during the 6-month period, even if unsuccessful.

5.0 METHODOLOGIES FOR FOLLOW-UP INVESTIGATION

If ANC experiences continuous illicit discharges or expects a discharge to occur more than once, ANC will verify the discharge has been eliminated by scheduling field observations periodically until the ANC confirms elimination of the discharge. The follow-up inspections will be conducted and documented by ANC Environmental Program personnel as described in **Section 6.0**.

6.0 MECHANISM TO TRACK ILLICIT DISCHARGE INVESTIGATIONS

ANC tracks all illicit discharge investigations in two databases called "Outfall Illicit Discharge Inspections" and "Interconnection Illicit Discharge Inspections." Additionally, ANC's Suspected Illicit Discharge Investigation Checklist contains the following tracking information:

1. Date initially observed
2. Results
3. Follow-up
4. Resolution
5. Date closed
6. Discovery method (annual screening or public report)

Appendix B-1

Dry Weather Field Screening Checklist

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DRY WEATHER FIELD SCREENING CHECKLIST

SECTION 1 - BACKGROUND AND LOCATION

Inspector Name:	Date:	Time:
Air Temperature (°F):	Weather Conditions:	
Time Since Last Precipitation Event Date:	Estimated quantity:	

Quarter	Outfalls / Interconnections Inspected	Conveyance	Inspection Point	Land Use within Drainage Area
☐ Q1	☐ IN9-SEC69	Pipe interconnection Pentagon Lagoon		• Service Complex • Contractor staging area • Spoils area • Gravesites • Columbarium • Roads • Parking Lots
	☐ IN10-B123	Inlet, manhole, and pipe		• Service complex • Parking lots
	☐ IN11-SEC8	Manhole and pipe		• Gravesites • Roads • Parking lots
☐ Q2	☐ IN6-PG North	Storm drain at edge of parking lot, pipe		• Administration building • Welcome center • Roads • Parking lots • Parking garage
	☐ IN7-PG South	Domed grate inlet in grass adjacent to parking lot, pipe		• Roads • Parking lots • Parking garage
	☐ OF8-SEC74	Tunnel, closed pipe, 48" reinforced concrete pipe		• Contractor staging area • Gravesites • Columbarium • Roads • Parking lots
☐ Q3	☐ IN1-SEC52	Brick and stone culvert with concrete ditch / pad		• Gravesites • Roads • Visitor buildings • Millennium site
	☐ IN12-SEC29	18” concrete pipe to headwall		• Administrative buildings • Roads
☐ Q4	☐ IN2-SEC36A	Storm drain curb inlet and pipe		• Gravesites
	☐ IN3-SEC36	Storm drain curb inlet and pipe		• Gravesites • Roads
	☐ IN4-SEC31	Storm drain yard inlet and pipe		• Gravesites • Roads
	☐ IN5- Tram	Storm drain pipe		• Gravesites • Roads • Parking

SECTION 2 - FLOW PRESENCE

Is Flow Present?	☐ Yes ☐ No	Estimated Flow Rate:	☐ Trickle (1 gal/min)	☐ Slight (1-4 gal/min)	☐ Moderate (5-9 gal/min)	☐ Heavy (>10 gal/min)
Is Chlorine Present?		☐ Yes, Residual:		☐ No	**If Chlorine present, complete SUSPECTED ILLICIT DISCHARGE CHECKLIST**	

SECTION 3 - PHYSICAL INDICATORS FOR FLOWING AND NON-FLOWING OUTFALLS OR INTERCONNECTIONS		
Brief description of outfall or interconnection conditions (structural, vegetative, pooling, etc.):		
INDICATOR – Check if Present	**Observations**	**COMMENTS**
☐ Outfall or Interconnection Damage	☐ Corrosion ☐ Peeling Paint ☐ Spalling, Cracking, or Chipping	
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other (describe)	
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited	
☐ Poor pool quality	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other (describe)	
☐ Benthic growth	☐ Brown ☐ Orange ☐ Green ☐ Other (describe)	
☐ Odor	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Petroleum/gas ☐ Other (describe)	

Appendix B-2

Suspected Illicit Discharge Investigation Checklist

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SUSPECTED ILLICIT DISCHARGE CHECKLIST

SECTION 1 - SUSPECT ILLICIT DISCHARGE REPORT

Suspect Illicit Discharge Report Description:

Location:	Reported by:	Date:

SECTION 2 - FLOW PRESENCE

Is Flow Present?	☐ Yes ☐ No	**If no, skip to Section 3**		
Estimated Flow Rate:	☐ Trickle (1 gal/min)	☐ Slight (1-4 gal/min)	☐ Medium (5-9 gal/min)	☐ Heavy (>10 gal/min)

Parameter		Result	Unit	Equipment
☐ Flow	Flow Width		In	Tape measure
	Flow Depth		Ft, In	Tape measure
	Length		Ft, In	Tape measure
	Time of travel		S	Stop watch
	Temperature		Degrees	Thermometer
	Chlorine	☐ Present, Residual: ☐ Not Present	NA	Test Strip

Check if Indicator Present	Description	Relative Severity Index (1-3)
☐ Odor	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other (see comments)	☐ 1 – Faint ☐ 2 – Easily detected ☐ 3 – Noticeable from a distance
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other (see comments)	☐ 1 – Faint colors in sample bottle ☐ 2 – Clearly visible in sample bottle ☐ 3 – Clearly visible in flow
☐ Clarity/Turbidity	See severity	☐ 1 – Slight cloudiness ☐ 2 – Cloudy ☐ 3 – Opaque
☐ Floatables (does not include trash)	☐ Sewage or sewage indicators (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other (see comments)	☐ 1 – Few/slight; origin not obvious ☐ 2 – Some; indications of origin (e.g., suds or oil sheen) ☐ 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sewage/indicators)

Additional Comments on Flow:

SECTION 3 - PHYSICAL INDICATORS FOR FLOWING AND NON-FLOWING OUTFALLS AND INTERCONNECTIONS

Brief description of outfall or interconnection conditions (structural, vegetative, pooling, etc.):

Are physical indicators not related to flow present?	☐ Yes	☐ No	**If no, skip to Section 4**

Check if Present	Observations	COMMENTS
☐ Deposits/Stains	☐ Oily ☐ Paint ☐ Flow Line ☐ Other (see comments)	
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited	
☐ Poor pool quality	☐ Odors ☐ Suds ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Excessive Algae ☐ Other (see comments)	
☐ Benthic growth	☐ Brown ☐ Orange ☐ Green ☐ Other (see comments)	
☐ Odor	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Petroleum/gas ☐ Other (see comments)	
Additional Comments on Physical Indicators:		

SECTION 4 - OVERALL CHARACTERIZATION/ILLICIT DISCHARGE POTENTIAL

☐ Unlikely
☐ Potential (presence of two or more indicators)
☐ Suspect (one or more indicators with a severity of 3)
☐ Obvious

☐ Other Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)	Describe:

SECTION 5 - ILLICIT DISCHARGE INVESTIGATION TRACKING

Date initially observed:

Results of the investigation:

Source of discharge:

Follow-up investigations:

Resolution:

APPENDIX C

CONSTRUCTION INSPECTION REPORT AND CHECKLIST

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ARLINGTON NATIONAL CEMETERY

INSPECTION REPORT FOR E&SC AND SWPP AT CONSTRUCTION SITES

A. GENERAL PROJECT INFORMATION

Inspector:	***Date of Inspection:***	***Inspection Type:*** *Routine ☐ 48-hour ☐*
Onsite Status of E&SC or SWPP Measures: *Adequate: ☐ Inadequate: ☐ See Comments:☐*		***Project Name:***
Construction Contractor:		***RLD/Certificate #:***
Site POC:	***Date Last Significant Rain:***	***Amount Last Significant Rain:***
Phase of Construction:	*Clearing & Grubbing/ Rough Grading ☐*	*Building Construction ☐* / *Construction Complete/ Final Stabilization ☐*

B. EROSION & SEDIMENT CONTROL

E&SC MINIMUM STANDARD REQUIREMENTS (Per 9 VAC25-840-40)		**YES**	**NO**	**N/A**	**NOT INSP'D**
MS-1	Are all denuded areas requiring temporary or permanent stabilization stabilized?				
MS-2	Are soil stockpiles adequately stabilized with seeding and/or sediment trapping devices?				
MS-3	Does permanent vegetation used onsite provide adequate stabilization?				
MS-4	Have all sediment trapping devices been constructed and made functional as first step in land disturbing activity?				
MS-5	For perimeter sediment trapping devices, are earthen structures stabilized?				
MS-6	Are sediment traps/basins installed where needed & functional as designed?				
MS-7	Are finished cut-n-fill slopes adequately stabilized?				
MS-8	Is concentrated runoff from cut-n-fill slopes flowing through adequate temporary or permanent channels or pipes?				
MS-9	Are slope water seepages adequately drained to protect the slope(s)?				
MS-10	Are all operation stormwater inlets adequately protected?				
MS-11	Are stormwater channels adequately stabilized with channel lining and/or outlet protection?				
MS-12	Is in-stream protection performed with measures that minimize channel damage?				
MS-13	Are temporary stream crossings constructed of non-erodible materials installed where applicable?				
MS-14	Are all applicable federal, state and local regulations pertaining to working in or crossing live water courses met?				
MS-15	Is necessary re-stabilization of in-stream construction complete?				
MS-16	Are utility trenches stabilized properly?				
MS-17	Are soil and mud kept off public roadways at intersections with site access roads?				
MS-18	Have all temporary control devices that are no longer needed been removed?				
	Have all control device repair and sediment removal been performed?				
MS-19	Are properties/waterways downstream adequately protected from erosion and sediment deposition?				

C. STORMWATER POLLUTION PREVENTION

	YES	NO	N/A	NOT INSP'D
1. Are inspections by Contractor current (every 14 days or within 48 hours of a rain event)?				
2. Have any design changes to the SWPP and/or E&SC been incorporated into existing plans?				
3. Are dates of major grading activities recorded?				
4. Are all significant areas (chemical storage, stockpiles, fueling and maintenance points) annotated on the SWMPPP drawings?				
5. Have personnel been trained in stormwater pollution prevention practices?				
6. Are chemical stored in a manner that deters contamination of area (covered, secondary containment, etc.)?				
7. Is the area free of trash and debris (to the extent practicable)?				
8. Are vehicle wash areas properly designed and functioning (water contained, no soap used, etc.)?				
9. Do fueling areas have secondary containment and adequate spill kit?				
10. Is the concrete washout area designed properly to ensure that no contaminated water will exit the area?				

D. COMMENTS

E. VIOLATIONS

Description of Violation	Corrective Action	Repeat Violation

F. AUTHENTICATION

Signature of Inspector: _____ _____

Signature of Contractor / RLD: _____

APPENDIX D

STORMWATER MANAGEMENT FACILITY INSPECTION AND MAINTENANCE PROCEDURES

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1.0 INTRODUCTION

The development of these Stormwater Management Facility Inspection and Maintenance Procedures ensure their adequate long-term functionality. ANC owns all stormwater management facilities located on its property and is responsible for their maintenance. ANC developed procedures to ensure proper function of each facility, whether designed for water quantity control, water quality control, or both.

2.0 STORMWATER MANAGEMENT FACILITIES AT ANC

ANC owns and maintains the following types of stormwater management facilities:

- *Pervious concrete/Permeable pavement (PP)* – A pavement or paving material that enables some fraction of rainfall to be infiltrated into a sub-base underneath the paver, often at a significant rate. For concrete, a specially formulated mixture of uniform cement, open-graded coarse aggregate, and potable water that allows water to infiltrate into the ground.
- *Bioretention and Rain Garden (RG)* - A water quality BMP engineered to filter the water quality volume through an engineered planting bed, consisting of a vegetated surface layer (vegetation, mulch, ground cover), planting soil, and sand bed, and into the in-situ material.
- *Stormceptor (STC)* – An in-line manufactured treatment device that removes pollutants from stormwater as they flow through the system.
- *Storm Filter (STF)* - Proprietary treatment device that filters pollutants from stormwater.
- *Underground Stormwater Chamber (UTC)* – Underground chamber that detains and pre-treats stormwater prior to flowing to other stormwater BMPs.
- *Stormwater Pre-Treatment Chamber (PT-UTC)* – Underground chamber that detains and pre-treats stormwater prior to flowing to other stormwater BMPs.

Table 2-1 provides an inventory of stormwater facilities at ANC including ANC's unique BMP #, the BMP type, and its location. ANC will update the list when new stormwater facility are installed.

Table 2-1: Stormwater Management Facilities and BMPs at ANC

BMP #	BMP Type	Location
PP-1	Permeable Pavement, no underdrain, with gravel	Sidewalk along Eisenhower Ave
PP-2	Permeable Pavement, no underdrain, with gravel	Sidewalk along Meigs Drive
PP-3	Porous Pavement	Millennium
RG-1	Raingarden 1, No underdrain	Bldg. 123
RG-2	Raingarden 2, No underdrain	Bldg. 123
RG-3	Raingarden 3, No underdrain	Bldg. 123
RG-4	Raingarden 4	Lewis Shelter
RG-5	Raingarden 5	Columbarium 12
RG-6	Raingarden 6	Columbarium 13
URG-1	Urban Raingarden 1	Columbarium 10
URG-2	Urban Raingarden 2	Columbarium 11
URG-3	Urban Raingarden 3	Columbarium 12
URG-4	Urban Raingarden 4	Columbarium 13
MBR-1	Micro-Bio-Retention 1	Gifford Shelter North
MBR-2	Micro-Bio-Retention 2	Gifford Shelter South
RG-7	Raingarden 7	Admin South Parking Lot
RG-8	Raingarden 8	Admin South Parking Lot
RG-9	Raingarden 9	Admin North Parking Lot

Table 2-1: Stormwater Management Facilities and BMPs at ANC		
BMP #	**BMP Type**	**Location**
RG-10	Raingarden 10	East Employee Parking Lot
STC-1	Manufactured Treatment Device - Stormceptor 1 (STC 1800)	Columbarium 7
STC-2	Manufactured Treatment Device - Stormceptor 2 (STC 1800)	Columbarium 8
STC-3	Manufactured Treatment Device - Stormceptor 3 (STC 900)	Columbarium 9 (North)
STC-4	Manufactured Treatment Device - Stormceptor 4 (STC 900)	Columbarium 9 (South)
STC-5	Manufactured Treatment Device - Stormceptor 5 (STC 2400)	Section 76
STC-6	Manufactured Treatment Device - Stormceptor 6 (STC 1800)	Section 73
STC-7	Manufactured Treatment Device - Stormceptor 7 (STC 1200)	York Drive/Marshall Drive
PT-UTD	Stormwater Pre-Treatment Chamber	Bldg. 123
UTD	Underground Stormwater Chamber	Bldg. 123
STF-1	Manufactured Treatment Device - StormFilter 1	East Employee Parking Lot
STF-2	Manufactured Treatment Device - StormFilter 2	Bldg. 129
STCP-1	Manufactured Treatment Device – Storm Capture	Chaffee Parking Lot
SR	Stream Restoration	Millennium Stream
SS	Street Sweeping	ANC Roads

3.0 INSPECTION PROCEDURES

ANC Environmental Program personnel will inspect all facilities annually.

ANC utilizes checklists to conduct annual stormwater management facility inspections. A separate checklist has been developed for each facility BMP type. **Appendix D-1** provides the checklists.

4.0 MAINTENANCE ACTIVITES AND PROCEDURES

The type and frequency of maintenance depends on the type and location of the stormwater management facility, varying levels of regular. **Table 4-1** summarizes the maintenance tasks and frequency by BMP type.

Table 4-1 Maintenance Requirements for Stormwater Management Facilities and BMPs		
BMP Type	**Maintenance Task**	**Frequency**
Bioretention and Rain Garden (with or without underdrain)	Mowing grass filter strips and bioretention turf cover	At least 4 times a year
	Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season
	• Spring visual inspection and cleanup • Supplement mulch to maintain a 3” layer Prune trees and shrubs	Annually
	Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years
	Replace the mulch layer	Every 3 years
	• Add reinforcement planting to maintain desired the vegetation density • Repair filter media/mulch layer or topsoil when in poor condition • Inlet/outlet removal or sediment or repairs • Clean underdrains or filter when ponding or poor drainage occurs • Remove invasive plants using recommended control methods • Stabilize the contributing drainage area to prevent erosion	As needed

Table 4-1 Maintenance Requirements for Stormwater Management Facilities and BMPs		
BMP Type	**Maintenance Task**	**Frequency**
Permeable Paving and Porous Pavement	Dry-weather vacuum sweeping	Annually
	• Replace cracked, deteriorating, or missing pavers • Surface debris removal • Vegetation and trash removal • Remove inlet/outlet obstructions or erosion • Replace/repair observation well cap	As needed
Stormceptor	Remove oil	When more than 1” of oil is observed
	Remove sediment (vacuum truck)	When the sediment in the unit reaches the following depths based on model #: • #900 – 6” • #1200 – 7” • #1800 – 12” • #2400 – 12”
	Inlet/outlet repairs	As needed
ConTech StormFilter	Remove sediment	Greater than 4” of sediment in vault or sediment on top of cartridges
	Cartridge replacement	Cartridges submerged, plugged, or bypassed
Stormwater Pre-Treatment Chamber	Cleaning and repairs	As needed
Underground Stormwater Chamber	Cleaning and repairs	As needed
Manufactured Treatment Device	Cleaning and repairs	As needed
Sand Filter	Cleaning and repairs	As needed

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Appendix D-1

Stormwater Management Facility Inspection Checklists

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Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name:		Date:	Date of last inspection:
Weather/site conditions:		Time since last rainfall:	
BMP INFORMATION			
BMP Installation Date:		Underdrain Present: ☐ Yes ☐ No	
BMP #:	Location:	As-Built Plans available: ☐ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☐ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☐ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3” layer • Prune trees and shrubs	Annually	☐ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☐ Yes ☐ No ☐ Not due
Replace the mulch layer	Every 3 years	☐ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☐ No			
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☐ No			

Arlington National Cemetery **Post-Construction Inspection Checklist**				**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ☐ No			
Outlet				
Erosion or sediment build-up	☐ Yes ☐ No			
Grate or spillway condition	☐ Yes ☐ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ☐ No			
Clogged underdrains	☐ Yes ☐ No			
Observation well caps present	☐ Yes ☐ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	☐ Yes ☐ No			
Inflow hindered by vegetation	☐ Yes ☐ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ☐ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ☐ No			
Additional Observations or Comments:				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ☐ No**

Arlington National Cemetery Post-Construction Inspection Checklist			CHAMBER/MTD/SAND FILTER
Inspector Name:		Date:	Date of last inspection:
Weather/site conditions:		Time since last rainfall:	
BMP INFORMATION			
BMP Installation Date:		Type: ☐ Pre-Treatment ☐ Storage ☐ Other	
BMP #:	Location:	As-Built Plans available: ☐ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☐ No			
Pipe or joint breaks or cracks	☐ Yes ☐ No			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☐ No			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☐ N/A			
Sediment depth on vault floor greater than 15% of diameter or interior depth of vault	☐ Yes ☐ No			
Standing water inside chamber for more than 24 hours after storm	☐ Yes ☐ No			
Scum line present	☐ Yes ☐ No			
Chamber cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☐ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☐ No ☐ N/A			
Sediment on pavement	☐ Yes ☐ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☐ No ☐ N/A			
Additional Observations or Comments:				

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☐ No**

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Arlington National Cemetery Post-Construction Inspection Checklist			CHAMBER/MTD/SAND FILTER
Inspector Name:		Date:	Date of last inspection:
Weather/site conditions:		Time since last rainfall:	
BMP INFORMATION			
BMP Installation Date:		Type: ☐ Pre-Treatment ☐ Storage ☐ Sand Filter ☐ Other	
BMP #:	Location:	As-Built Plans available: ☐ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☐ No ☐ N/A			
Pipe or joint breaks or cracks	☐ Yes ☐ No ☐ N/A			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☐ No ☐ N/A			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☐ N/A			
Sediment depth on floor greater than 15% of diameter or interior depth of vault	☐ Yes ☐ No ☐ N/A			
Standing water inside device for more than 24 hours after storm	☐ Yes ☐ No ☐ N/A			
Scum line present	☐ Yes ☐ No ☐ N/A			
Chamber/device cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☐ No ☐ N/A			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☐ No ☐ N/A			
Sediment on pavement	☐ Yes ☐ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☐ No ☐ N/A			
Additional Observations or Comments:				

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☐ No**

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Arlington National Cemetery Post-Construction Inspection Checklist		PERMEABLE and POROUS PAVEMENT		
Inspector Name:			Date:	Date of last inspection:
Weather/site conditions:			Time since last rainfall:	
BMP INFORMATION				
BMP Installation Date:			Underdrain Present: ☐ Yes ☐ No	
BMP #:	Location:		As-Built Plans available: ☐ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Dry-weather vacuum sweeping	Annually	☐ Yes ☐ No

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Surface				
Deterioration (e.g., sinking, spalling, cracking, broken pavers)	☐ Yes ☐ No			
Erosion and/or bare or exposed soil in grid paver areas	☐ Yes ☐ No			
Presence of loose material, sediment deposits, or ponding	☐ Yes ☐ No			
Drainage and Adjacent Upstream Areas				
Vegetation encroachment	☐ Yes ☐ No			
Trash, debris, bare soil, and/or erosion	☐ Yes ☐ No			
Inlets/Outlets				
Erosion	☐ Yes ☐ No ☐ N/A			
Clogged or obstructed	☐ Yes ☐ No ☐ N/A			
Observation Wells				
Caps present	☐ Yes ☐ No ☐ N/A			
Standing water in well (3 days after storm event >½ inch)	☐ Yes ☐ No ☐ N/A			
Additional Observations or Comments:				

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☐ No**

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Arlington National Cemetery Post-Construction Inspection Checklist				**STORMCEPTOR**
Inspector Name:		Date:	Date of last inspection:	
Weather/site conditions:		Time since last rainfall:		
BMP INFORMATION				
BMP Installation Date:		Model: 900 1200 1800 2400		
BMP #:	Location:	As-Built Plans available: ☐ Yes ☐ No		
ROUTINE MAINTENANCE ACTIVITIES				
Activity		**Frequency**		**Completed**
None		NA		NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☐ No			
Pipe or joint breaks or cracks	☐ Yes ☐ No			
Access portals cracked, damaged, or unable to open	☐ Yes ☐ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* 900 / 6 1200 / 7 1800 / 12 2400 / 12	☐ Yes ☐ No			
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ☐ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☐ No ☐ N/A			
Sediment on pavement	☐ Yes ☐ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☐ No ☐ N/A			
Additional Observations or Comments:				

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☐ No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24” discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of 3 samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12

Oil Level Sampling Procedures:

1. Lower sampling tube through 6” vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1” of oil is present, remove oil.

Arlington National Cemetery Post-Construction Inspection Checklist				STORMFILTER
Inspector Name:		Date:	Date of last inspection:	
Weather/site conditions:		Time since last rainfall:		
BMP INFORMATION				
BMP Installation Date:		Type: ☐ Vault ☐ Manhole ☐ Linear ☐ Other		
BMP #:	Location:	As-Built Plans available: ☐ Yes ☐ No		

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☐ No			
Pipe or joint breaks or cracks	☐ Yes ☐ No			
Access grates cracked, damaged, or unable to open	☐ Yes ☐ No			
Sediment Level and Cartridges				
Sediment accumulation in forebay	☐ Yes ☐ No ☐ N/A			
Sediment depth on vault floor greater than 4”	☐ Yes ☐ No			
Sediment depth on top of cartridges greater than 0.25”	☐ Yes ☐ No			
Cartridges submerged with greater than 4” water for more than 24 hours after storm	☐ Yes ☐ No			
Filter media plugged (no pore space) or in bypass condition during storm	☐ Yes ☐ No			
Scum line present above top cap	☐ Yes ☐ No			
Upstream and Drainage Area				
Oil, fuel or chemical spills	☐ Yes ☐ No ☐ N/A			
Sediment on pavement	☐ Yes ☐ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☐ No ☐ N/A			
Additional Observations or Comments:				

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☐ No**

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APPENDIX E

STORMWATER POLLUTION PREVENTION PLAN

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