

October 2024

**Annual MS4 Report – FY24**  
**VSMP Permit No. VA0088595**



Cover Photo: Hylbrook Park Stream  
Restoration



Submitted by:  
Prince William County  
Department of Public Works

## *Appendices*

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**Certification**

“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 gather and evaluate 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.”

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**Benjamin Eib**

**Sr Environmental Program Manager**

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**Date**

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
	<b>A. DISCHARGES AUTHORIZED UNDER THIS STATE PERMIT</b>				
	<b>A.1. Authorized Discharges</b>				
<b>A.1.a.</b>	<i>This state permit authorizes the discharge of stormwater from all existing and new municipal separate stormwater point source discharges to surface waters from the Municipal Separate Storm Sewer System (MS4) owned or operated by the County of Prince William in Virginia.</i>				
<b>A.1.b.</b>	<i>The following discharges, whether discharged separately or commingled with municipal stormwater, are also authorized by this state permit for discharge through the MS4:</i>				
<b>A.1.b.1.</b>	<i>Non-stormwater discharges and stormwater discharges associated with industrial activity (defined at 9VAC25-31-10) that are authorized by a separate Virginia Pollutant Discharge Elimination System (VPDES) permit;</i>				
<b>A.1.b.2.</b>	<i>Discharges from construction activities that are regulated under the Virginia Stormwater Management Program (VSMP) (9VAC25-870-10 et seq.) and authorized by a separate VSMP authority permit or state permit; and</i>				
<b>A.1.b.3.</b>	<i>The following non-stormwater discharges unless the State Water Control Board or the permittee determines the discharge to be a significant source of pollutants to surface waters: (a) water line flushing, managed in a manner to avoid instream impact; (b) landscape irrigation; (c) diverted stream flows; (d) rising ground waters; (e) uncontaminated ground water infiltration (as defined at 40 CFR Part 35.2005(20)); (f) uncontaminated pumped ground water; (g) discharges from potable water sources, managed in a manner to avoid instream impact; (h) foundation drains; (i) air conditioning condensation; (j) irrigation water; (k) springs; (l) water from crawl space pumps; (m) footing drains; (n) lawn watering; (o) individual residential car washing; (p) flows from riparian habitats and wetlands; (q) dechlorinated swimming pool discharges, managed in a manner to avoid instream impact; (r) street wash water that do not contain cleaning additives or otherwise managed in a manner to</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• Non-stormwater discharges are tracked as part of the Illicit Discharge Detection and Elimination program.</li> <li>• See MS4 Action ID B.2.e.1.</li> </ul>		



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	<p><i>avoid instream impact;</i></p> <p><i>(s) routine external building was down provided no soaps, solvents, or detergents are used, external building surfaces do not contain hazardous substances, and the wash water is filtered, settled, or similarly treated prior to discharge;</i></p> <p><i>(t) discharges or flows from fire fighting activities;</i></p> <p><i>(u) discharges or flows of water for fire protection or firefighting training activities managed in a manner to avoid instream impact in accordance with § 9.1-207.1 of the Code of Virginia;</i></p> <p><i>(v) discharges from noncommercial fundraising car washes if the washing uses only biodegradable, phosphate-free, water-based cleaners in accordance with § 12.2-2114.1 of the Code of Virginia; or</i></p> <p><i>(w) other activities generating discharges identified by the Department as not requiring VPDES authorization.</i></p>				
<b>A.1.b.4.</b>	<p><i>Materials from a spill are not authorized unless the discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage. The permittee shall take, or require the responsible party to take, all reasonable steps to minimize or prevent any adverse effect on human health or the environment in accordance with the permittee's program under Part I.B.2.f). (Spill Prevention and Response). This state permit does not transfer liability for a spill itself from the party(ies) responsible for the spill to the permittee nor relieve the party(ies) responsible for a spill from the reporting requirements of 40 CFR Part 117 and 40 CFR Part 302. The permittee is responsible for any reporting requirement listed under Part III.G of this state permit.</i></p>				
<b>A.2. Permittee Responsibilities</b>					

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A.2.	<p><i>This state permit establishes the specific requirements applicable to the permittee for the term of this state permit. The permittee is responsible for compliance with this state permit. The permittee shall implement and update the MS4 Program Plan (as set forth in Part I.B) to ensure compliance with this state permit. The Department has determined that implementation of the MS4 Program Plan reduces the discharge of pollutants to the maximum extent practicable. Where wasteloads have been allocated for pollutant(s) of concern in an approved Total Maximum Daily Load (TMDL), the permittee shall implement the special conditions as set forth in Part I.D of this state permit. Compliance with the requirements of this state permit shall also constitute adequate progress for this permit term towards complying with the assumptions and requirements of the applicable TMDL wasteload allocations such that the discharge does not cause or contribute to violations of the water quality standards.</i></p>				
A.2-1.	<p><i>The permittee shall clearly define the roles and responsibilities of each of the permittee's departments, divisions or subdivisions in maintaining permit compliance. If the permittee relies on another party to implement portions of the MS4 Program Plan, both parties must document the agreement in writing. The agreement shall be retained by the permittee with the MS4 Program Plan. Roles and responsibilities shall be updated as necessary. Where the permittee relies on another party to implement a portion of this state permit, responsibility for compliance with this state permit shall remain with the permittee.</i></p>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• Roles and responsibilities are provided as part of the County's MS4 program plan. Roles and responsibilities can be reviewed as part of each BMP section within the MS4 Program Plan.</li> <li>• The county has written agreements with the following organizations to support implementation of portions of the MS4 Program Plan: <ul style="list-style-type: none"> <li>o Prince William County Soil and Water Conservation District (PWCSWCD)</li> <li>o Keep Prince William Beautiful (KPWB)</li> <li>o Northern Virginia Regional Commission (NVRC) Clean Water Partners</li> <li>o Prince William Water (Previously known as Prince William County Service Authority)</li> <li>o Virginia American Water</li> <li>o Upper Occoquan Service Authority (UOSA)</li> </ul> </li> </ul>	<p><i>Each annual report shall include a current list of roles and responsibilities</i></p>	<ul style="list-style-type: none"> <li>• A detailed list of roles and responsibilities is included as Appendix U.</li> </ul>

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A.2-2.	<p><i>In the event the permittee is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the annual report. Circumstances beyond the permittee's control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failures caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). The failure to provide adequate program funding, staffing or equipment maintenance shall not be an acceptable explanation for failure to meet permit conditions. The Department will determine, at its sole discretion, whether the reported information will result in an enforcement action. In addition, the permittee must report noncompliance which may adversely affect surface waters or endanger public health in accordance with Part III.1.</i></p>	DPW, EMD, COD	<p>If Prince William County is unable to meet the conditions of this permit due to circumstances beyond its control, the county will provide a list of circumstances that prevented permit compliance.</p>	<p><i>Each annual report shall include a list of those circumstances of non-compliance outside of the permittee's control.</i></p>	<p>There were no circumstances of non-compliance beyond the county's control during the reporting period.</p>
<b>A.3. Legal Authority</b>					
A.3.	<p><i>The permittee shall maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to:</i></p>				
A.3.a.	<p><i>Control the contribution of pollutants to the MS4;</i></p>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• These regulations are contained in section 700 of the County's Design &amp; Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link:  <a href="https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR">https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR</a></li> </ul>		

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A.3.b.	Prohibit illicit discharges to the MS4;	DPW, EMD, COD	<ul style="list-style-type: none"> <li>These regulations are contained in section 700 of the County's Design &amp; Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link: <a href="https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR">https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR</a></li> </ul>		
A.3.c.	Control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;	DPW, EMD, COD	<ul style="list-style-type: none"> <li>These regulations are contained in section 700 of the County's Design &amp; Construction Manual Standards Manual (DCSM), and Chapter 23.2, Article IV - Stormwater Management in Prince William County Code, which is available at the following link: <a href="https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR">https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH8ENPR</a></li> </ul>		
A.3.d.	Require compliance with conditions in ordinances, permits, contracts, inter-jurisdictional agreements, or orders; and,	DPW, EMD, COD	<p>The county has the authority to require compliance related to implementing the permit requirements, including but not limited to:</p> <ul style="list-style-type: none"> <li>Conditions in ordinances (including permits and orders issued under ordinances): The county has authority as authorized by state law and as stated in local ordinances, including options for escalating enforcement steps as appropriate in the county's exercise of its enforcement discretion as the regulator of covered third party activities.</li> </ul>		
A.3.e.	Carry out all inspections, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.	DPW, EMD, COD	The county has authority to conduct inspections/monitoring etc. related to implementing the permit requirements.		
A.3-1.	The permittee shall review and update its ordinances and other legal authorities such as permits, orders, contracts and inter-jurisdictional agreements as necessary to continue providing adequate legal authority to control discharges to and from the MS4.	DPW, EMD, COD	Prince William County's current ordinances and other legal authorities provide adequate legal authority to control discharges to and from the MS4. Ordinances and other legal authorities will be reviewed annually as part of the Program Plan review.	Each annual report shall provide a list of any updates to applicable ordinances, permits, orders, contracts, and/or agreements performed over the reporting year.	
<b>A.4. MS4 Program Resources</b>					

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A.4.	<i>The permittee shall submit to the Department a copy of each fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit. The permittee shall describe its method of funding the stormwater program with the copy of the fiscal year budget.</i>	DPW, EMD, COD	The fiscal year's budget will be provided as required.	<i>A copy of the fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit shall be submitted with each annual report.</i>	The Annual Program Budget can be found at the link below. <a href="https://www.pwcva.gov/departments/management-and-budget/fy2024-budget">https://www.pwcva.gov/departments/management-and-budget/fy2024-budget</a>
<b>A.5. Permit Maintenance Fees</b>					
A.5.	<i>Permit maintenance fees shall be paid in accordance with Part XIII of the VSMP regulations (9VAC25-870- 700 et seq.).</i>	DPW, EMD, COD	The permit fees have been paid as required.	<i>A statement regarding payment of the applicable MS4 permit maintenance fee, including check date and check number shall be included with each annual report. Note: Please do not include copies of checks or other bank records.</i>	Prince William County's MS4 permit maintenance fee was paid with check number 102264 dated 9/7/23.
<b>A.6. MS4 Program Plan</b>					
A.6.	<i>The permittee shall maintain, implement and enforce an MS4 Program Plan accurately documenting the MS4 Program including all additions, changes and modifications. For the purposes of this state permit, the MS4 Program Plan is considered a single document, but may actually consist of separate documents (e.g., dry weather screening plans, wet weather monitoring plans, TMDL Action Plans, annual reports). Policies, ordinances, strategies, checklists, watershed plans and other documents may be incorporated by reference provided the latest revision date is included in the MS4 Program Plan and all documents are available upon request. Specific reference shall be made to any ordinance more stringent than the Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq) and VSMP regulations (9VAC25-870 et. seq.), the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.) and Regulations (9VAC25-840 et seq.) and the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) and Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830 et seq). The permittee shall update the MS4 Program Plan annually and the most up-to-date version of the MS4 Program Plan shall be posted on the</i>	DPW, EMD, COD	The MS4 Program Plan will be reviewed annually and updated as needed.	The annual report shall include a summary of any updates to the MS4 Program Plan made during the reporting year.	No changes were made to the MS4 Program Plan during the FY24 reporting year.

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	<p>permittee's website within 30 days of updating the MS4 program Plan. The most recent MS4 Program Plan shall be maintained on the permittee's website and provided in at least one other location easily accessible to the public.</p>				
<b>A.7. MS4 Program Review and Updates</b>					
<b>A.7.</b>	<p>MS4 Program Review: The permittee will review the current MS4 Program Plan annually, in conjunction with the preparation of the annual report required under Part I.E of this state permit.</p>	DPW, EMD, COD	The MS4 Program Plan will be reviewed annually and updated as needed.	All modifications and proposed modifications shall be reported in accordance with this section of the permit.	Prince William County has reviewed the MS4 Program Plan in accordance with the requirements of the renewed permit.
<b>A.7.a.</b>	<p>MS4 Program Updates and Modifications: Modifications to the MS4 Program Plan are expected throughout the life of this state permit as part of the iterative process to reduce pollutant loading and protect water quality. As such, modifications made in accordance with this state permit as a result of the iterative process do not require modification of this state permit unless the Department determines the changes meet the criteria referenced in 9VAC25-870-630 or 9VAC25-870-650. Updates and modifications to the MS4 Program Plan may be made during the life of the permit in accordance with the following procedures:</p>				
<b>A.7.a.1.</b>	<p>Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program Plan may be made by the permittee at any time. Additions shall be reported as part of the annual report.</p>				
<b>A.7.a.2.</b>	<p>Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists and other documents routinely evaluated and modified are authorized under this state permit provided that the updates and modifications are performed in a manner (i) that is consistent with the conditions of this state permit, (ii) that ensure public notice and participation requirements established in this state permit are followed, and (iii) that the updates and modifications are documented in the annual report.</p>				



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A.7.a.3.	<p>Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies and Best Management Practices (BMPs) specifically identified in this state permit with alternate strategies, policies, and BMPs may be requested at any time. Such requests shall include the following:</p> <p>(a) An analysis of how and/or why the BMPs, strategies, or policies are ineffective or infeasible including information on whether the BMPs, strategies, or policies are cost prohibitive;</p> <p>(b) Expectations on the effectiveness of the replacement BMPs, strategies, or policies;</p> <p>(c) An analysis of how the replacement BMPs are expected to achieve the goals of the BMPs to be replaced;</p> <p>(d) A schedule for implementing the replacement BMPs, strategies, and policies; and</p> <p>(e) An analysis of how the replacement strategies and policies are expected to improve the permittee's ability to meet the goals of the strategies and policies being replaced.</p>			<p>Requests or notifications shall be made in writing to the Department and signed in accordance with 9VAC25-870-370 of the VSMP regulations. Modification to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. Major modifications to the MS4 Program Plan as defined in 9VAC25-870-10 may require that the permit be reopened and modified pursuant to 9VAC25-870-630.</p>	
A.7.b.	<p>MS4 Program Updates Requested by the Department: In a manner and following procedures in accordance with the Virginia Administrative Processes Act, the VSMP regulations and other applicable State laws, statutes and regulations, the Department may request changes to the MS4 Program Plan to assure compliance with the statutory requirements of the Virginia Stormwater Management Act and associated regulations and to:</p> <p>1) Address impacts on receiving water quality caused by discharges from the MS4;</p> <p>2) Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or</p> <p>3) Include such other conditions necessary to comply with State or Federal statutory or regulatory requirements.</p>			<ul style="list-style-type: none"> <li>Proposed changes requested by the Department shall be made in writing and set forth the basis for and objective of the modification as well as the proposed time schedule for the permittee to develop and implement the modification. The permittee may propose alternative program modifications and/or time schedules to meet the objective of the requested modification, but any such modifications are at the discretion of the Department.</li> <li>All modifications and proposed modifications shall be reported in accordance with this section of the permit.</li> </ul>	
	<p><b>B. STORMWATER MANAGEMENT</b> The following subparts describe the requirements for the permittee to implement in its MS4 Program Plan during this state permit term:</p>				
	<p><b>B.1. Planning</b></p>				

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B.1-1.	<p>No later than 12-months after the effective date of this state permit, the permittee shall submit to the Department, a cost benefit analysis of the stormwater pollutant reduction utilized to select priority projects from the conceptual stormwater projects including those identified in the permittee's completed watershed studies. The permittee shall include in their development of the cost benefit analysis the number of BMP acres treated, impervious area draining into BMP, condition of the downstream channel, amount of pollutant reduction, feasibility for implementation, the unit costs for pollutant reduction and other benefits from the proposed BMP. The cost benefit analysis shall include a prioritized list of the identified conceptual projects for consideration of implementation.</p> <p>The permittee shall continue to seek public comment in development of the plan. A copy of the completed plan shall be placed on the permittee's website no later than 30 days after any updates are made.</p>	DPW, EMD, COD	<p>The watershed management plan has been completed and links to the completed plans are provided on the county's website:  <a href="https://www.pwcva.gov/department/environmental-services/community-ms-4-program">https://www.pwcva.gov/department/environmental-services/community-ms-4-program</a></p>	<p>The permittee shall provide the Department a current web link to the watershed management plan no later than 12 months after the effective date of this state permit.</p>	<p>The web link to the county's watershed management plans was submitted to DEQ on December 16, 2015.</p>								
<p><b>B.2. MS4 Program Implementation</b>  <b>B.2.a. Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands</b></p>													
B.2.a.1.	<p>The permittee shall implement a local erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. and a stormwater management program consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq.</p>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>The county's erosion and sediment control program and stormwater management program have been approved by DEQ as consistent with the Virginia Erosion and Sediment Control Law, the Virginia Stormwater Management Act, and their attendant regulations.</li> <li>The county uses 2,500 square feet, which is the threshold for land disturbing activities to be regulated under the county's erosion and sediment control program, as the threshold for reporting the number of regulated land disturbing activities and the total number of acres disturbed.</li> </ul>	<ul style="list-style-type: none"> <li>Each annual report shall contain the number of regulated land disturbing activities approved and the total number of acres disturbed.</li> <li>Each annual report shall contain the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken.</li> </ul>	<ul style="list-style-type: none"> <li>For the period July 1, 2023 thru June 30, 2024, Prince William County approved a total of 113 land development plans with a cumulative land disturbance of 4,656.99 acres. Refer to Appendix B for a list of land disturbance permits issued during the period.</li> <li>FY 24 Erosion and Sediment Control Program Summary</li> </ul> <table border="1" data-bbox="1394 1029 1827 1101"> <thead> <tr> <th data-bbox="1394 1029 1478 1078">FY24</th> <th data-bbox="1478 1029 1608 1078">Site Inspections</th> <th data-bbox="1608 1029 1717 1078">Violations</th> <th data-bbox="1717 1029 1827 1078">Notices to Comply</th> </tr> </thead> <tbody> <tr> <td data-bbox="1394 1078 1478 1101">Total</td> <td data-bbox="1478 1078 1608 1101">24,289</td> <td data-bbox="1608 1078 1717 1101">70</td> <td data-bbox="1717 1078 1827 1101">7</td> </tr> </tbody> </table>	FY24	Site Inspections	Violations	Notices to Comply	Total	24,289	70	7
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B.2.a.2.	<i>The permittee shall identify in the MS4 Program Plan all legal authorities for erosion and sediment control and stormwater management that are more stringent than those required under 9VAC25-840 et seq. and/or 9VAC25-870 et seq. that have been adopted in accordance with § 62.1-44.15:65 and/or § 62.1-44.15:33 of the Code of Virginia.</i>	DPW, EMD, COD	The county has identified current county requirements that are more stringent than state law/regulations.	<ul style="list-style-type: none"> <li>• The initial annual report shall include the permittee's strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located</li> <li>• The initial annual report shall include a list of all known land disturbing projects that qualify under the 'Grandfathering' provision of the VSMP regulations found at 9VAC25-870-48.</li> <li>• Each annual report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) and 2) of this state permit.</li> </ul>	Refer to Appendix W for a Summary of the County's Virginia Stormwater and Erosion & Sediment Control Programs.																								
<b>B.2.b. Retrofitting on Prior Developed Lands</b>																													
B.2.b.	<i>From the list of stormwater management projects included in the analysis required in Part I.B.1, the permittee shall select at least seven (7) projects no later than the expiration date of this state permit. Projects implemented to meet the requirements of Part I.D of this state permit (TMDL Action Plan and Implementation for the Chesapeake Bay Special Condition or TMDL Action Plans other than the Chesapeake Bay TMDL) may be used to meet the requirements of this special condition. For retrofit projects that do not serve to meet the requirements of Part I.D, the permittee shall submit a summary of projects implemented during the reporting period with each annual report including type of land use being retrofitted, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and pervious acreage, and location by latitude and longitude (decimal degrees).</i>	DPW, EMD, COD	The county will implement at least seven projects from the list of projects required in Part I.B.1 no later than the expiration date of this permit.	<i>Each annual report shall include a status update for those projects for which implementation began during the reporting period.</i>	See section III.1 for information on non-priority projects completed during the reporting period. <table border="1" data-bbox="1381 862 1837 1068"> <thead> <tr> <th>Number</th> <th>Project Name</th> <th>Completion Year</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SWM Facility No. 99 – Water Quality Retrofit</td> <td>FY16</td> </tr> <tr> <td>2</td> <td>Hylbrook Park</td> <td>FY16</td> </tr> <tr> <td>3</td> <td>SWM Facility No. 28 – Water Quality Retrofit</td> <td>FY17</td> </tr> <tr> <td>4</td> <td>Reach 5 Stream Restoration</td> <td>FY17</td> </tr> <tr> <td>5</td> <td>Dewey's Creek Reach 4</td> <td>FY17</td> </tr> <tr> <td>6</td> <td>East Longview</td> <td>FY17</td> </tr> <tr> <td>7</td> <td>SWM Facility No. 489</td> <td>FY18</td> </tr> </tbody> </table>	Number	Project Name	Completion Year	1	SWM Facility No. 99 – Water Quality Retrofit	FY16	2	Hylbrook Park	FY16	3	SWM Facility No. 28 – Water Quality Retrofit	FY17	4	Reach 5 Stream Restoration	FY17	5	Dewey's Creek Reach 4	FY17	6	East Longview	FY17	7	SWM Facility No. 489	FY18
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<b>B.2.c. Roadways</b>																													
B.2.c.	<i>Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.</i>	DFFM	The county meets this requirement through implementation of the actions described below.																										

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.c.1.	The permittee shall maintain an accurate list of permittee-maintained roads, streets, and parking lots that includes the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs.	DFFM	<ul style="list-style-type: none"> <li>The majority of public roads in the county (interstate, primary, secondary, and residential) are maintained and operated by the Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit. Prince William County is responsible for maintaining 13 miles of impervious roadway.</li> <li>The county currently operates and maintains 87 parcels with impervious parking lots associated with county facilities totaling 132.5 acres.</li> </ul>		A list of county-maintained roads and parking lots can be found in Appendix C.
B.2.c.2.	The permittee shall implement written protocols for permittee-maintained road, street and parking lot maintenance, equipment maintenance, and material storage designed to minimize pollutant discharge.	DFFM	Prince William County Buildings and Grounds is responsible for snow removal at all county facilities maintained by Buildings and Grounds. Snow removal activities are not performed on any other County-maintained roads, streets, or parking lots. Salt, sand, and calcium chloride are the specified materials used in snow removal activities. Any materials used for deicing and sanding activities are stored and maintained in a manner to prevent runoff from precipitation. Prince William County established a county-wide IDDE policy to promote good housekeeping practices across all municipal facilities.	The permittee shall include an updated version of the written protocols identified in Part I.B.2.c)(2) if any changes are made during the reporting year.	In FY18, Prince William County implemented a SOP for Illicit Discharge Elimination and MS4 Permit Compliance, which is designed to minimize pollutant discharge and promote good housekeeping practices across County facilities.
B.2.c.3.	Within 24 months of permit issuance, the permittee shall develop or review and update, if necessary, its existing procedures for snow and ice management, as well as identify opportunities to implement best management practices that promote efficient management and application of anti-icing and deicing agent applications to any permittee-maintained parking lots, roadways, and sidewalks or other paved surfaces.	DFFM			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)				
B.2.c.4.	<i>Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.</i>	DFFM	Prince William County Buildings and Grounds is responsible for snow removal at all county facilities maintained by Buildings and Grounds. Snow removal activities are not performed on any other County-maintained roads, streets, or parking lots. Salt, sand, and calcium chloride are the specified materials used in snow removal activities. Any materials used for deicing and sanding activities are stored and maintained in a manner to prevent runoff from precipitation. Prince William County established a county-wide IDDE policy to promote good housekeeping practices across all municipal facilities.						
B.2.c.5.	<i>The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.</i>	DFFM	The County uses salt, sand, and calcium chloride as specified snow removal materials. No deicing agent containing nitrogen or phosphorus is used by the County.						
<b>B.2.d. Pesticide, Herbicide, and Fertilizer Application</b>									
B.2.d.	<i>The permittee shall continue to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to permittee rights of way, parks, and other permittee property, as follows:</i>	DFFM, DPRT	The county meets this requirement through implementation of the actions described below.						
B.2.d.1.	<i>The permittee shall implement and maintain turf and landscape nutrient management plans that have been developed by a certified nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the MS4 permittee where nutrients are applied to a contiguous area greater than one acre. Nutrient management plans shall be submitted to the Department of Conservation and Recreation (DCR) for approval no later than 30 prior to plan expiration. No nutrient management plans maintained by the permittee shall be considered expired while DCR is reviewing the plan for approval.</i>	DFFM, DPRT							
B.2.d.1.a.	<i>The permittee shall maintain a list of all permittee lands where nutrients are applied to a contiguous area of more than one acre (including latitude and longitude).</i>	DFFM, DPRT	County staff has identified all county lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude have been provided for each area in Appendix Y.		Plan Name	Area (Acres)	Plan Area (Acres)	Initial Plan Date	Current Plan Expiration Date
					Braemar	2.46	2.46	9/1/2017	8/31/2026
					Fairmont	4.01	4.01	10/1/2018	9/30/2024
					Howison	9.82	9.82	4/1/2017	3/31/2026
					Western PD	7.27	7.27	4/1/2015	2/27/2025
					<b>Total</b>	<b>23.56</b>	<b>23.56</b>		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)						
B.2.d.1.b.	The permittee shall annually track the following: (1) The total acreage of permittee lands upon which nutrients are applied and controlled using general permittee guidelines or standard operating procedures; (2) The acreage of permittee lands where turf and landscape nutrient management plans are required; and, (3) The acreage of permittee lands covered by turf and landscape nutrient management plans have been implemented.	DFFM, DPRT	<ul style="list-style-type: none"> <li>County staff will track the total acreage where nutrients are applied on identified county lands with a contiguous area greater than one acre.</li> <li>County staff will track the acreage where turf and landscape nutrient management plans are required.</li> <li>County staff will track the acreage of county lands covered by turf and landscape nutrient management plans.</li> </ul>	Each annual report shall include the three elements under Part I.B.2.d)1)(b) above and list of properties identified under Part I.B.2.d)1)(a) including the approval date of the most recent nutrient management plan.	A summary of Nutrient Management Plans can be found in Appendix Y.						
B.2.d.2.	The permittee shall continue to employ good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.	DFFM, DPRT	<ul style="list-style-type: none"> <li>Prince William County Public Works will promote and encourage the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.</li> <li>The Virginia Cooperative Extension Service help support Prince William County applicators and distributors with proper training and coordination with the Virginia Department of Agriculture and Consumer Services (VDACS).</li> <li>VDACS provides ongoing communication with all certified applicators and distributors.</li> <li>The Virginia Cooperative Extension Service provides training and education on the use, application, and disposal of pesticides, herbicides, and fertilizers.</li> </ul>								
B.2.d.3.	The permittee may regulate the use, application, or storage of fertilizers pursuant to §3.2-3602 of the Code of Virginia.	DFFM, DPRT	No additional local fertilizer requirements are in place at this time beyond state requirements.								
B.2.d.4.	The permittee shall track the acreage of county lands managed under Integrated Pest Management Plans.	DFFM, DPRT	Prince William County tracks the acreage of county lands managed under Integrated Pest Management Plans.	Each annual report shall include the number of acres managed under Integrated Pest Management Plans.	There are two golf courses owned by the County that are under an Integrated Pest Management Plan. Neither course is located within the County's MS4 services area. The following table identifies the acreage under an IPM. <table border="1" data-bbox="1457 1195 1717 1273"> <thead> <tr> <th>County Land</th> <th>Acres</th> </tr> </thead> <tbody> <tr> <td>Forest Greens GC</td> <td>105.42</td> </tr> <tr> <td>Prince William GC</td> <td>114.33</td> </tr> </tbody> </table>	County Land	Acres	Forest Greens GC	105.42	Prince William GC	114.33
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B.2.e. Illicit Discharges and Improper Disposal											



MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.e.	<i>Discharges to the MS4 not authorized by this state permit shall be effectively prohibited.</i>	DPW, EMD, COD	Prince William County's Illicit Discharge Detection and Elimination (IDDE) Program consists of elements designed to identify, mitigate, and prevent the release of non-stormwater discharges into its storm sewer system, and thus into State and Federal waters. Through development of County Fire Protection, Zoning, Building Development, and Stormwater Management Ordinances. Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants to its storm sewer system.		
B.2.e.1.	<i>In accordance with Part I.A.1.b), certain non-stormwater discharges to the MS4 need not be addressed as illicit discharges or improper disposal. The MS4 Program Plan shall identify any nonstormwater discharges listed under Part I.A.1.b), where the permittee has imposed any conditions on the discharges to the MS4. The permittee shall prohibit, on a case-by-case basis, any individual nonstormwater discharge (or class of non-stormwater discharges) otherwise allowed under this paragraph that is determined to be contributing significant amounts of pollutants to the MS4.</i>	DPW, EMD, COD	Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants to its storm sewer system. The County defines all discharges categorized as non-stormwater discharges, as well as those discharges not addressed as illicit discharges in accordance with Part I.A.1.b) of the permit in Article II sec. 23.2-4.1 of Prince William County's Code of Ordinances.		
B.2.e.2.	<i>The permittee shall continue to follow-up with the PWCSA to identify the efforts taken to limit the exfiltration of sanitary sewage into the MS4 including maintenance and repair activities.</i>	DPW, EMD, COD	The identification and correction of deficiencies is aided by PWC through its Dry Weather Monitoring, Storm Sewer Maintenance, General Stormwater Discharge, and Stream Restoration Programs. Cross connections, leaks, and other maintenance issues are discovered through the County's Dry Weather Monitoring and Storm Sewer Maintenance Programs. PWC continues to identify and report concerns to the PWCSA when sanitary sewer system maintenance and repairs are needed.	<i>Each annual report shall include the amount of linear feet of sanitary sewer inspected PWCSA during the reporting year.</i>	In FY24, Prince William Water (formerly PWCSA) inspected 708,901 linear feet of sanitary sewer.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.e.3.	<i>The permittee will continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part I.C.3.</i>	DPW, EMD, COD	<p>Prince William County participates in the following programs to help reduce the discharge of floatables:</p> <ul style="list-style-type: none"> <li>• Adopt-A-Spot Program: litter cleanup and recycling program sponsored by the Virginia Dept. of Waste Management.</li> <li>• Adopt-A-Stream Program: stream cleanup program managed by the Prince William County Soil &amp; Water Conservation District (SWCD).</li> <li>• Floatables Monitoring Program: program administered by PWC SWCD, designed to assess refuse loading to 5 selected stream sites throughout the County.</li> <li>• Keep Prince William Beautiful Storm Drain Labeling Program: identify storm drains as draining into the Chesapeake Bay, as well as remind citizens not to dump items/fluids into them.</li> <li>• Public Works Litter Control Crew: team established by PWC Public Works to pick up highly traveled roadways, handle cleanups of illegal dumpsites, and haul material from community cleanup events.</li> <li>• Prince William County Public Works, Environmental Management Division, manages a Bandalong Litter Trap in the Neabsco Creek.</li> </ul>		
B.2.e.4.	<i>The permittee shall prohibit the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (such as oil and antifreeze) for recycling, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis but not less than twice per year.</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• Prince William County has prohibited the discharge of any non-stormwater element determined to be contributing significant amounts of pollutants, including the dumping or improper disposal of motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes.</li> <li>• Working with our partners, Prince William County Public Works will promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous waste. Public Works has created and maintains a robust management program for the collection and disposal of household hazardous waste and collection and recycling of used oil.</li> </ul>		More information on oil and hazardous waste disposal can be found in Appendix E.
B.2.e.5.	<i>The permittee shall continue to implement a program to locate and eliminate illicit discharges and improper disposal into the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal, as described in Part I.B.2.1)(1) of this state permit.</i>	DPW, EMD, COD	Prince William County hosts several programs under its IDDE program dedicated to the detection, identification, and elimination of unauthorized discharges to its MS-4 system. These programs include the Dry Weathering Monitoring, General Discharge, Wet Weather Monitoring, Service Authority's Inflow and Infiltration Program, and Industrial and High Risk Monitoring Programs.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.e.6.	<i>The permittee shall require the elimination of illicit discharges and improper disposal practices within 30-days of discovery. Where elimination of an illicit discharge within 30-days is not possible, the permittee shall require an expeditious schedule for removal of the discharge. In the interim, the permittee shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.</i>	DPW, EMD, COD	By issuance of a Notice of Violation, illicit discharges are required to be eliminated within 30 days of discovery, unless removal is not possible within that timeframe. In these instances, reasonable and prudent measures to minimize discharge will be taken and an action plan for mitigation/removal will be required.	<i>Each annual report shall include a list of illicit discharges identified, the source, a description of follow-up activities and whether the illicit discharge has been eliminated.</i>	A summary of illicit discharge inspections and actions taken can be found in Appendix D.
<b>B.2.f. Spill Prevention and Response</b>					
B.2.f.	<i>The permittee shall continue to implement a program that coordinates with the Fire Department and other permittee-operated departments to prevent, contain, and respond to spills that may discharge into the MS4. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's jurisdiction.</i>	DFR	The County has designated a full-time Hazardous Materials Officer. Prince William County participates in the Commonwealth Department of Emergency Management Services' regional Hazardous Materials response programs and maintains a National Incident Management System Type I HAZMAT Team for emergency response. The County's Fire and Rescue System responds to all complaints of hazardous spills and hazardous illicit discharge. If the complaints relate to sewage, the appropriate agency, such as, Prince William County Service Authority or Virginia American Water will be contacted. The complaints on the failing septic systems and drain fields are referred to the County's Health Department. The County staff makes every effort to direct complaints to the appropriate agency as expeditiously as possible.	<i>Each annual report shall include a list of spills, the source (identified to the best of the permittee's ability), and a description of follow-up activities taken.</i>	The Spill Response Summary Report can be found in Appendix F.
<b>B.2.g. Industrial &amp; High Risk Runoff</b>					
B.2.g.	<i>The permittee shall implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities (e.g., municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313). Facilities with individual VPDES stormwater permits or coverage under the industrial stormwater general permit may be included in the program at the discretion of the permittee.</i>	DPW, EMD, COD	High Risk and Industrial VPDES permitted facilities that are found to be contributing significant pollutants to the storm sewer system will be referred to DEQ for compliance review.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.g.1.	<p>The permittee shall maintain, and update as necessary, a list of all known industrial and high-risk dischargers to the MS4.</p>	DPW, EMD, COD	<p>In FY16, the County performed used GIS to analyze and generate a list of potential High Risk outfalls according to a probability of pollutant discharge. This probability takes in to account an assumed potential for discharge to occur, possible pollutant discharge effect according to the type of facility and its operations, and the potential for environmental damage according to the facilities proximity to environmentally sensitive areas. From this analysis, 518 outfalls were deemed as potentially high risk. In addition, any outfalls found to be contributing a significant source of pollutants during routine Dry Weather Monitoring inspections will be added to this list and updated annually.</p>	<p>The annual report shall include a list of all known industrial and high risk dischargers including any non-VPDES regulated industrial and commercial stormwater dischargers determined by the permittee as contributing a significant pollutant load and that discharge to the MS4 system, a schedule of inspections and procedures for inspecting outfalls.</p>	<p>A list of Industrial and High Risk Runoff Sites can be found in Appendix G.</p>
B.2.g.2.	<p>The permittee shall maintain a list of any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the MS4. This list may be individual discharges or categories of discharges.</p> <p>(a) The list shall include, but shall not be limited to: major automotive facilities such as repair shops, body shops, auto detailers, tire repair shops and service stations.</p> <p>(b) Visual inspections of exposed areas and points of connections to the MS4 or outfalls at these facilities shall be conducted, in accordance with the schedule outlined in the MS4 program Plan, to identify potential sources of pollutants that could enter the MS4 and surface waters.</p> <p>(c) The permittee shall require control measures as necessary and/or appropriate for stormwater discharges from these dischargers to the MS4.</p>	DPW, EMD, COD	<p>As outfalls for facilities determined to have a high risk for pollutant discharge are inspected, those which do not fall under VPDES permitting requirements or Virginia State Water Control Law are included under the County's Non-VPDES High Risk Designation. Potential Non-VPDES High Risk facilities are identified, along with associated outfalls, through GIS desktop analysis. Using County land-use information, land-uses that are identified to have a high potential for the discharge of pollutants are isolated. As with VPDES permitted facilities, a buffer is placed around a high risk parcel and the containing outfalls are identified. These outfalls are considered to be potentially High Risk outfalls. During Dry Weather Monitoring activities, outfalls determined to potentially contribute a significant source of pollutants to the storm sewer system are identified and added to the list of high risk discharges.</p>	<p>Each annual report shall include a report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls or points of connection to the permittee's MS4 inspected during the reporting period.</p>	<p>A list of inspected outfalls is included in Appendix M.</p>
B.2.g.3.	<p>The permittee may conduct monitoring, or may require the facility to conduct monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings to the MS4.</p>	DPW, EMD, COD	<p>PWC receives Discharge Monitoring Reports (DMR's) from applicable (non-exempt) VPDES permitted facilities that discharge into the County's MS-4.</p>		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.g.4.	<i>The permittee shall coordinate with the Department to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Inspections of facilities for which the permittee has evidence of significant pollutant loading may be carried out in conjunction with other county programs.</i>	DPW, EMD, COD	Outfalls are monitored in accordance with the County's Dry Weather Monitoring Protocols. Facilities whose outfalls are found to discharge significant pollutant flows within 3 consecutive inspections are referred to DEQ for compliance review. Follow-up inspections are scheduled according to IDDE protocols. Outfalls of VPDES permitted facilities are inspected once a year, while High Risk outfalls are inspected once a permit cycle.		
B.2.g.5.	<i>The permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for Department compliance review under the Virginia State Water Control Law any industrial or commercial facility, if the permittee becomes aware of a violation of any industrial stormwater management requirement contained in an individual or general VPDES permit issued to the facility by the Department.</i>	DPW, EMD, COD	Prince William County will report these facilities to the DEQ for compliance review under the Virginia State Water Control Law.	<i>Each annual report shall include a list of referrals to the Department including a document detailing any coordination activities with the Department.</i>	During the reporting period, no facilities were deemed necessary to report to DEQ for compliance review.
<b>B.2.h. Stormwater Infrastructure Management</b>					
B.2.h.	<i>The permittee shall continue to maintain and implement programs to maintain the permittee's stormwater infrastructure and to update the accuracy and inventory of the storm sewer system.</i>	DPW, EMD, COD	Prince William County conducts routine inspection of its storm drainage system, inspecting the entire system within the permit term. Storm sewer is inspected using visual inspection techniques, as well as using CCTV. The County continues to implement a program to inspect all new drainage systems (eligible for County maintenance) using video cameras, prior to accepting the systems into the County's maintenance program.		As of June 30, 2024, there are 671 miles of storm sewer system owned and/or operated within the County. During FY24, the County inspected 549 miles of storm sewer system.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.h.1.	<p>For stormwater management (SWM) facilities and infrastructure maintained by the permittee including residential properties where SWM facilities, BMP and Storm Drainage Systems qualify for permittee maintenance (excluding apartments and mobile home parks), the following conditions apply:</p> <p>(a) The permittee shall provide for adequate long-term operation and maintenance of its SWM facilities owned or operated by the permittee in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.</p> <p>(b) The permittee shall inspect annually all SWM facilities owned or operated by the permittee. The permittee may choose to implement an alternative schedule to inspect these SWM facilities based on a risk assessment that includes facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan in accordance with plan modifications as listed in Part I.A.7.a) of this state permit.</p> <p>(c) The permittee shall conduct maintenance on SWM facilities owned or operated by the permittee as necessary to ensure the facilities function as designed.</p> <p>(d) The permittee shall continue its stormwater system inspection program and shall either (a) implement a department approved risk-based prioritization inspection program for the stormwater system within 12 months or (b) inspect not less than 15% of the MS4 annually and 80% of the system during the term of the permit. The permittee shall perform maintenance as necessary based on findings during the inspection. If for any reason an inspection cannot be conducted, the permittee shall document the reason in the annual report.</p> <p>(e) The permittee shall dispose of all wastes and wastewaters collected during stormwater system cleaning in accordance with local, state, and federal laws and regulations.</p> <p>(f) The permittee shall obtain any required state or federal permit necessary to complete maintenance activities.</p>	DPW, EMD, COD	<p>Prince William County continues a program for the inspection and maintenance of SWM facilities maintained by the County. County-maintained facilities include those owned by HOA's and residential communities or by the County Board of Supervisors, and where basic maintenance responsibilities are performed by the owners. County-maintained SWM/BMP facilities are typically inspected under two scenarios: under the general inspection program which occurs once a year, or as requested by an impacted property-owner. Maintenance is prioritized by the severity of maintenance needs for the facility. Maintenance of publicly maintained SWM facilities is performed by the County's Construction and Operations Division, as necessary. All applicable permitting requirements will be met during maintenance activities.</p>	<ul style="list-style-type: none"> <li>•The permittee shall submit with the initial annual report the written inspection and maintenance procedures.</li> <li>•Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1) including the type and number of stormwater structures owned or operated by the permittee: the total linear feet of storm sewer system owner and/or operated by the permittee, and the linear feet of storm sewer system inspected.</li> </ul>	<p>As of June 30, 2024, the County is responsible for the maintenance of approximately 1,057 facilities, including dry ponds, wet ponds, infiltration trenches, sand filters, bioretention and proprietary BMP facilities. A list of these facilities and their inspection date are included in Appendix H.</p>
B.2.h.2.	<p>For SWM facilities not maintained by the permittee and that discharge into the MS4, the following conditions apply:</p>	DPW, EMD, COD	<p>The county meets this requirement through implementation of the actions described below.</p>		



MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
<b>B.2.h.2.a.</b>	<i>The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system. The program shall include the following elements:</i>	DPW, EMD, COD	The County has a program in place to inspect all privately-maintained facilities within the term of the permit and to pursue enforcement actions in instances where maintenance is needed. These facilities are comprised of dry ponds, wet ponds, constructed wetlands, bioretention facilities, proprietary stormwater inlet BMP facilities, underground storage facilities, and infiltration trenches.		
<b>B.2.h.2.a.1.</b>	<i>Beginning with the effective date of this state permit and in accordance with 9VAC25-870-112 B, maintenance agreements may be used but are not required for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located provided that the permittee has developed and implemented a strategy to address maintenance of such stormwater management controls. Should the permittee choose a strategy other than a maintenance agreement, such a strategy shall be provided in writing no later than 12 months after the effective date of this state permit and shall include an inspection schedule, homeowner outreach and education, or other methods targeted at promoting the long term maintenance of such facilities.</i>	DPW, EMD, COD	Before a privately maintained facility can be removed from bond, maintenance agreement must be recorded to ensure the proper upkeep of the facility. A majority of the privately maintained SWM facilities have duly recorded Maintenance Agreements that require the owner to perform the inspection and maintenance at a frequency identified in the Agreement.		
<b>B.2.h.2.a.2.</b>	<i>For SWM facilities that are privately maintained and for which maintenance agreements have been established between the permittee and the owner, the permittee shall inspect privately maintained SWM facilities no less than once per 5 years and conduct follow-up activities to ensure the required maintenance has been completed. Inspections may be conducted by the permittee or their designee as defined in 9 VAC 25-870-114.</i>	DPW, EMD, COD	Facilities in compliance with maintenance requirements are scheduled for re-inspection during the following permit cycle. For facilities with deficiencies, the owner is provided with a detailed report outlining those deficiencies. If the deficiencies are not corrected within the time given, a second notice is given, and additional time is provided for repairs. If the facility is still not repaired, Prince William County Construction Services conducts maintenance on the facility and the facility owner is required to reimburse the County for expenses. Follow-up inspections are performed to ensure maintenance requirements are followed. Facility owners are urged to self-report maintenance activities to the County in the form of a detailed engineering report.	<ul style="list-style-type: none"> <li>•Each annual report shall include a list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the permittee as required by Part 1.B.2.h)2).</li> <li>•Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.</li> </ul>	As of June 30, 2024, there are 1,092 privately maintained facilities within the County. A table describing inspection, maintenance, and enforcement of privately maintained facilities for the reporting period can be found in Appendix I.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.h.2.a.3.	<i>The permittee shall continue to implement a program ensuring the inspection and maintenance of SWM facilities that are privately maintained and for which maintenance agreements have not been established between the permittee and the owner.</i>	DPW, EMD, COD	For those facilities that do not have Maintenance Agreements, our County Attorney has determined that the maintenance note on the plan is still enforceable.		
B.2.h.3.	<i>The permittee shall update and maintain an accurate MS4 map and information table as follows:</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• Prince William County has identified all outfalls owned or operated by Prince William County that discharge to surface waters (i.e. MS4 outfalls).</li> <li>• Each MS4 outfall has an individual identification number, the local watershed, HUC and receiving water in which it is located are identified, and its latitude and longitude are provided in in decimal degrees.</li> <li>• The county has delineated the drainage area to each of its MS4 outfalls (i.e. the MS4 service area).</li> <li>• The county updates the mapping layers to incorporate new outfalls once as-built plans are provided by the party responsible for constructing the new outfall.</li> </ul>		
B.2.h.3.a.	<i>An updated map of the MS4 owned or operated by the permittee, no later than 12 months after the permit effective date that includes, at a minimum:</i>	DPW, EMD, COD		<i>The MS4 service area map including outfalls and information included in Part I.B.2.h)3) shall be submitted no later than 12 months after the effective date of this state permit. The information shall be submitted as an electronic file described in Part I.B.2.h)3)(e).</i>	

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.h.3.a.1-6.	<p>(1) MS4 outfalls discharging to surface waters, except as follows:</p> <p>(i) In cases where the outfall is located outside of the MS4 permittee's legal responsibility, the permittee may elect to map the known points of interconnection upstream and downstream of the actual outfall; and</p> <p>(ii) In cases where the MS4 outfall discharges to receiving water channelized underground, the permittee may elect to map the point downstream at which the receiving water emerges above ground as an outfall discharge location. If there are multiple outfalls discharging to an underground channelized receiving water, the map shall identify that the outfall discharge location represents more than one outfall. This is an option a permittee may choose to use recognizing the difficulties in accessing outfalls to underground channelized stream conveyances for purposes of mapping, screening or monitoring.</p> <p>(2) A unique identifier for each mapped item required in part I B.2.h)3);</p> <p>(3) The name and location of receiving waters to which the MS4 outfall or point of interconnection discharges;</p> <p>(4) The MS4 regulated service area;</p> <p>(5) Pipe and open channel conveyances that are upstream of MS4 outfalls; and</p> <p>(6) Stormwater management facilities owned or operated by the permittee.</p>	DPW, EMD, COD	Prince William County maintains an inventory of all SWM/BMP facilities in the County.		A total of 58 facilities were added to the County's inventory during the reporting period. A list of new facilities is provided as Appendix J.
B.2.h.3.b.	<p>The permittee shall update its MS4 service area map as necessary if any changes to direct drainage to VDOT's MS4 service area occur. The permittee shall maintain a map to assist with coordination of VDOT MS4 coverage areas for roadways and streets. Where practical, the permittee map shall clearly delineate gap areas that drain to VDOT MS4 areas not included as part of the Prince William MS4 service area. This information shall be maintained and kept up to date and made available when requested.</p>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.h.3.c.	<p>The permittee shall maintain an outfall information table associated with the MS4 map that includes the following information for each outfall or point of discharge for those cases in which the permittee elects to map the known point of discharge in accordance with Part 1.B.2.h)3)(a)(1). The outfall information table may be maintained as a shapefile attribute table. The outfall information table shall include the following, at a minimum:</p> <ul style="list-style-type: none"> <li>(1) A unique identifier as specified on the MS4 map;</li> <li>(2) The latitude and longitude of the outfall, or point of discharge;</li> <li>(3) The 6th Order Hydrologic Unit Code of the receiving water;</li> <li>(4) An indication as to whether the receiving water is listed as impaired in the Virginia 2022 305(b)/303(d) Water Quality Assessment Integrated Report; and</li> <li>(5) The name of any EPA-approved TMDLs for which the permittee is assigned a wasteload allocation.</li> </ul> <p>If available, the outfall table should include the following:</p> <ul style="list-style-type: none"> <li>(1) The estimated regulated acreage draining to the outfall, or point of discharge; and</li> <li>(2) The name of the receiving water.</li> </ul>	DPW, EMD, COD			
B.2.h.3.d.	<p>No later than 12 months after permit issuance, the permittee shall submit to DEQ, a format file geodatabase or two shapefiles that contain at a minimum:</p> <ul style="list-style-type: none"> <li>(1) A point feature class or shapefile for outfalls with an attribute table containing outfall data elements required in accordance with Part 1.B.2.h)3)(c); and</li> <li>(2) A polygon feature class or shapefile for MS4 service area as required in accordance with Part 1.B.2.h)3)(a)(4) with an attribute table containing the following information: Permit No. VA0088595</li> </ul> <ul style="list-style-type: none"> <li>(i) MS4 operator name;</li> <li>(ii) MS4 permit number, and</li> <li>(iii) MS4 service area pervious, impervious and total acreage rounded to the nearest hundredth</li> </ul>	DPW, EMD, COD			Prince William County will submit a file to DEQ no later than 12 months after permit issuance.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.h.3.e.	<p>All file geodatabase feature classes or shapefiles shall meet the following data format standards:</p> <p>(1) Point data collected in NAD83 or WGS84 decimal degrees global positional system coordinates;</p> <p>(2) Data projected in Virginia Lambert Conformal Conic format;</p> <p>(3) Outfall location accuracy shall be represented in decimal degrees rounded to at least the fifth decimal place for latitude and longitude to ensure point location accuracy (e.g., 37.61741, -78.15279); and</p> <p>(4) Metadata shall provide a description of each feature class or shapefile dataset, units of measure as applicable, coordinate system, and projection.</p>	DPW, EMD, COD			
B.2.h.3.f.	<p>No later than October 1 of each year, the permittee shall update the MS4 map and outfall information table to include any new outfalls constructed or TMDLs approved or both during the immediate preceding reporting period.</p>	DPW, EMD, COD			
B.2.h.3.g.	<p>The permittee shall provide written notification to any downstream adjacent MS4 of any new physical interconnection from the permittee-owned system to another regulated MS4 established or discovered after the effective date of this permit.</p>	DPW, EMD, COD			
<b>B.2.i. County Facilities</b>					
B.2.i.	<p>Facilities owned or operated by the permittee shall be operated and maintained as follows:</p>	DFFM, DPRT, DPW, SWD	The county meets this requirement through implementation of the actions described below.		
B.2.i.1.	<p>The permittee shall develop, implement, and maintain written good housekeeping procedures designed to:</p> <p>(a) Prevent illicit discharges;</p> <p>(b) Ensure permittee staff or contractors properly dispose of waste materials to minimize floatables and landscape wastes entering the MS4;</p> <p>(c) Prevent the discharge of wastewater or washwater or both into the MS4 without authorization under a separate VPDES permit; and</p> <p>(d) Preventing pollutant discharge into the MS4 from leaking permittee-owned or operated vehicles and equipment. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24 hours after discovery.</p>	DFFM, DPRT	<ul style="list-style-type: none"> <li>• Prince William County promotes good housekeeping practices throughout all its municipal facilities through its Environmental Management System (EMS) program and other methods. The EMS program and the County's Good Housekeeping SOP promote consistency and accountability in the method for addressing environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures, and processes. This program emphasizes objectives such as the identification and prevention of spills, hazardous material storage and removal, storage tank inspection and maintenance, waste disposal and recycling, proper equipment and material storage, and many other environmental good housekeeping practices.</li> <li>• PWC Parks and Rec facilities are inspected biennially, to ensure good housekeeping practices are being followed. This includes properly managing yard waste and grass clippings.</li> <li>• Police and fire vehicles are required to be washed in an environmentally safe manner, allowing no wash water to enter storm drain systems. Most vehicles are washed in commercial car washing facilities.</li> <li>• PWC Fleet Management has worked closely with</li> </ul>		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)					
			Risk Management and Watershed Management to set up a system to prevent the leaking or spilling of vehicles on site waiting for maintenance.							
B.2.i.2.	The permittee shall maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F, and on permittee properties with greater than 2-acres of impervious surface.		<ul style="list-style-type: none"> <li>Prince William County's storm drain labeling program targets high priority municipal facilities to maintain markings on storm drain inlets. This program not only labels inlets at high priority municipal facilities, but in multiple areas of the county including high-risk shopping centers and residential neighborhoods.</li> </ul>							
B.2.i.3.	<i>High Priority Municipal Facilities :</i>									
B.2.i.3.a.	<p>The permittee shall maintain a list of all high priority municipal facilities that do not require a separate VPDES industrial stormwater permit as well as identify which of the high priority municipal facilities have a high potential of discharging pollutants. Facilities with a high potential for discharging pollutants are those facilities where any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt, or runoff;</p> <p>(1) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;</p> <p>(2) Materials or residuals on the ground or in stormwater inlets from spills or leaks;</p> <p>(3) Material handling equipment (except adequately maintained vehicles);</p> <p>(4) 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);</p> <p>(5) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);</p> <p>(6) Materials or products that would be expected to</p>	DFFM, DPRT	<p>The County operates several municipal facilities. Some, like the PWC landfill facility, are covered under their own VPDES permit for stormwater discharges. During FY17, the County assessed all municipal facilities within its MS4 service area and evaluated their need for a SWPPP. High risk facilities included composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.</p>	<p>The initial annual report shall include a list of all high priority municipal facilities and those with a high potential to discharge pollutants as identified in Part I.B.2.i)3)(a).</p>	<p>The following four facilities have been identified as being high risk, and are currently maintaining a SWPPP:</p> <table border="1" data-bbox="1409 854 1814 976"> <thead> <tr> <th>Facility Name</th> </tr> </thead> <tbody> <tr> <td>Fleet Administration</td> </tr> <tr> <td>Ben Lomond Maintenance Building</td> </tr> <tr> <td>Hellwig Maintenance Building</td> </tr> <tr> <td>PWC Stadium Maintenance Building</td> </tr> </tbody> </table>	Facility Name	Fleet Administration	Ben Lomond Maintenance Building	Hellwig Maintenance Building	PWC Stadium Maintenance Building
Facility Name										
Fleet Administration										
Ben Lomond Maintenance Building										
Hellwig Maintenance Building										
PWC Stadium Maintenance Building										



MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
	<p>be minimized in stormwater runoff) contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;</p> <p>(7) Waste material except waste in covered, non-leaking containers (e.g., dumpsters);</p> <p>(8) Application or disposal of process wastewater (unless otherwise permitted); or</p> <p>(9) 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.</p>				
<b>B.2.i.3.b.</b>	<p>The permittee shall develop and/or update and implement individual stormwater pollution prevention plans for each high priority municipal facility identified under Part I.B.2.i)2)(a) no later than 36-months after the effective date of this state permit. Stormwater pollution prevention plans (SWPPP) shall include:</p> <p>(1) A site description that includes a site map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies;</p> <p>(2) A discussion and checklist of potential pollutants and pollutant sources;</p> <p>(3) A discussion of all potential non-stormwater discharges;</p> <p>(4) A maintenance schedule for all existing source controls;</p> <p>(5) All policies and procedures implemented at the facility to ensure source reduction;</p> <p>(6) An inspection schedule and checklist to ensure that all source reductions are continually implemented and all source controls are appropriately maintained. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP;</p> <p>(7) Appropriate training as required in Part I.B.2.k);</p> <p>(8) Procedures to conduct an annual comprehensive site compliance evaluation;</p> <p>(9) Procedures to conduct dry weather screening; and</p> <p>(10) All modifications made as the result of any release or spill.</p>	DFFM, DPRT	SWPPPs will include a site description that includes site map showing all outfalls, direction of flows, existing source controls, and receiving water bodies; a checklist of potential pollutants and pollutant sources; all potential non-stormwater discharges; a maintenance schedule for all source controls; policies and procedures implemented at the facility for source reduction; an inspection schedule to ensure source reduction controls are implemented and maintained properly; training schedules for facility employees; procedures for annual evaluations of the facility; dry weather monitoring procedures; and all modifications made as a result of a spill or release of pollutant.		The status of SWPPP development at High Priority Municipal Facilities is presented in the table located in the above section.
<b>B.2.i.3.c.</b>	A copy of each SWPPP shall be kept at each high priority municipal facility and be kept updated.	DFFM, DPRT	A copy of the high priority municipal facility SWPPP will be kept at each facility requiring one. Where the SWPPP cannot be physically kept on site, a copy of the high priority municipal facility SWPPP will be kept on file by the department that manages the site.		
<b>B.2.j. Public Education/Participation</b>					

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.j.	<p>The permittee shall continue to implement a public education program with the goal of increasing the stormwater knowledge of target audiences and changing behavior to result in pollutant reductions. The permittee may fulfill all or part of the requirements of this state permit through regional outreach programs involving two or more MS4 localities.</p>	DPW, EMD, COD	<p>Prince William County strives to share relevant and useful information with our community to help protect our local waterways and natural environment. We undertake several projects and special events to provide citizens with the opportunity to help in these goals. Public Works also partners with residents, businesses, other government agencies and organizations to advance our goals to protect and preserve natural resources.</p>		
B.2.j.1.	<p>The permittee shall identify, schedule, implement, evaluate, and modify, as necessary, public outreach activities designed to meet the following public education and outreach goals:</p> <p>(a) Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4;</p> <p>(b) Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement;</p> <p>(c) Continue outreach programs with public and private golf courses located within the county that discharge to the permittee's MS4 that would encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides;</p> <p>(d) Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;</p> <p>(e) Promote and publicize the proper disposal of pet waste and household yard waste;</p> <p>(f) Promote and publicize the use of the permittee's litter prevention program;</p> <p>(g) Promote and publicize methods for residential car washing that minimize water quality impacts;</p> <p>(h) Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;</p> <p>(i) Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits; and</p> <p>(j) Target strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.</p>	DPRT, DPW, EMD, COD, SWD	<ul style="list-style-type: none"> <li>The public education and outreach program is reviewed on an annual basis to determine the effectiveness of the program and to identify future efforts to improve the program. Due to the nature of some of the education and outreach elements, a determination of effectiveness is more qualitative in nature and based on the number of individuals reached through the activities, as well as feedback from the staff involved with those activities. Each activity is reviewed and discussed, and recommendations for future improvements are identified in the annual report. For other program elements, included in the annual report, effectiveness is based on the results of the activity such as pounds of trash removed or percent of participants adopting recommended practices for example.</li> <li>Prince William County has many community partners that conduct outreach events and activities all year round. Some of those partners include Keep Prince William Beautiful, Prince William Soil and Water Conservation District, Virginia Cooperative Extension, and Northern Virginia Clean Water Partners. Prince William County is able to provide funding to these organizations so that they may conduct these activities within Prince William County, as well as assisting the County with meeting other goals and requirements set forth in this permit.</li> </ul>	<ul style="list-style-type: none"> <li>Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.</li> <li>Each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements. Note that any voluntary project for which the permittee seeks to use for pollutant reduction requirements must be tracked and reported.</li> <li>Each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.</li> </ul>	<ul style="list-style-type: none"> <li>Included as Appendix K are our community partners' annual reports.</li> <li>Public Outreach Summary can be found in Appendix X.</li> </ul>

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.j.2.	<i>The permittee shall post a copy of this state permit on its web page no later than 30-days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>The county's MS4 permit (VA0088595), effective January 12, 2024 and was posted to the county website.</li> <li>The permit is available at: <a href="https://www.pwcva.gov/department/environmental-services/community-ms-4-program">https://www.pwcva.gov/department/environmental-services/community-ms-4-program</a></li> </ul>		
B.2.j.3.	<i>The permittee shall post copies of each annual report on its website no later than 30 days after the report submittal to the Department and continue to retain copies of the annual reports online for the duration of this state permit.</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>Annual reports are posted to the county website within 30 days of submittal to DEQ.</li> <li>Annual reports are available at: <a href="https://www.pwcva.gov/department/environmental-services/community-ms-4-program">https://www.pwcva.gov/department/environmental-services/community-ms-4-program</a></li> </ul>		
B.2.j.4.	<i>The permittee shall post the most current MS4 Program Plan on its website no later than 30 days after the effective date of this permit and maintain a current copy on the website. If the MS4 Program Plan is modified or revised, the updated plan shall be posted within 30 days of the revision(s). Copies of the most current MS4 Program Plan shall be made available for public review upon request of interested parties in compliance with all applicable open records requirements.</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>The county's most current MS4 Program Plan was posted to the county website.</li> <li>Updates to the MS4 Program Plan will be posted to the county's website within 30 days of submittal to DEQ.</li> <li>The MS4 Program Plan is available at: <a href="https://www.pwcva.gov/department/environmental-services/community-ms-4-program">https://www.pwcva.gov/department/environmental-services/community-ms-4-program</a></li> </ul>		
<b>B.2.k. Training</b>					
B.2.k.	<i>The permittee shall conduct stormwater training for permittee employees. The training requirement may be fulfilled all or in part through regional training programs involving two or more MS4 localities; provided, however, that the permittee shall remain individually liable for its failure to comply with the training requirements in this state permit. The permittee shall determine the appropriate employees to receive the following types of training based on the specific topic for which training is to be provided:</i>	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.k.1.	<i>The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges.</i>	DPW, EMD, COD	Prince William County Staff are trained in the recognition and reporting of Illicit Discharges as well as implementation of good housekeeping practices. Currently, appropriate staff are trained in basic good housekeeping, spill prevention, and illicit discharge prevention practices through EMS training. This training is conducted biennially and is required for all staff including full-time Parks and Rec staff.	<i>Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.</i>	A list of training courses offered in FY24 and the number of participants can be found in appendix L.
B.2.k.2.	<i>The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.</i>	DFFM, DPRT, DPW, SWD		See MS4 Action ID B.2.k.1.	A list of training courses offered in FY24 and the number of participants can be found in appendix L.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.k.3.	<i>Within 36 months of the effective date of the permit, the permittee shall incorporate good housekeeping training strategies for each of the following activities: a. Discharging water pumped from construction and maintenance activities; b. Bulk storage of soil, compost, mulch and landscaping waste stockpiles; and c. Preventing pollutant discharge into the MS4 from leaking permittee-owned or operated vehicles and equipment. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24 hours after discovery.</i>	DFFM, DPRT, DPW, SWD			
B.2.k.4.	<i>The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around permittee maintenance and public works facilities.</i>	DFFM, DPW, SWD		See MS4 Action ID B.2.k.1.	A list of training courses offered in FY24 and the number of participants can be found in appendix L.
B.2.k.5.	<i>The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board.</i>	DFFM, DPRT	Appropriate County staff and contractors receive appropriate training in pesticide and herbicide application. Appropriate staff are required to stay current in applicable training and certifications.		
B.2.k.6.	<i>The permittee shall have a program to ensure that County plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations.</i>	DPW, EMD, COD	Engineering staff who review E&S, SWM and VSMP plans have certifications. Site inspectors and stormwater management facility inspectors have erosion and sediment control inspector and stormwater management inspector certifications.		For a list of inspector and plan reviewer certifications, see appendix A.
B.2.k.7.	<i>The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations to implement the modified stormwater management design criteria.</i>	DPW, EMD, COD	Appropriate employees have been certified as program administrators, inspectors, plan reviewers or combined administrators as required under the Virginia Stormwater Management Act and its attendant regulations.		For a list of inspector and plan reviewer certifications, see appendix A.
B.2.k.8.	<i>The permittee shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around county recreation facilities.</i>	DPRT	Applicable employees who conduct maintenance, repair, and custodial work at county recreational facilities receive biennial training.	See MS4 Action ID B.2.k.1.	A list of training courses offered in FY24 and the number of participants can be found in appendix L.
B.2.k.9.	<i>The appropriate emergency response employees shall have training in spill response. A summary of the training and/or certification program provided to emergency response employees shall be included in the first annual report.</i>	DFR	All uniform personnel are trained to the hazmat first responder operations level. This training teaches spill control as a defensive manner. This training is regulated by 29 CFR 1910.120(q) and NFPA 472. Staff are required to be current in this training, including annual refresher training. During the reporting period, all required personnel were current in Emergency Spill Response training.	<i>The initial report shall include documentation of employee emergency spill response training and/or certification.</i>	

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.k.10.	Documentation shall be kept of all training events including the training date, number of employees attending the training, and the objective of the training event for a period of three years after each training event. Additionally, all events shall be listed in the annual report for the year in which the training event occurred.	DF, RMD	Training documentation is kept on file by the appropriate office. A list of training events will be provided in the MS4 Annual Reports.	See MS4 Action ID B.2.k.1. and B.2.k.8.	A list of training courses offered in FY24 and the number of participants can be found in appendix L.
<b>B.2.l. Water Quality Screening Programs</b>					
B.2.l.	The following screening programs shall be implemented in addition to the monitoring required by Part I.C:				
B.2.l.1.	Dry Weather Screening Program: The permittee shall continue ongoing efforts to detect the presence of illicit connections and unauthorized discharges to the permittee's MS4.	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.l.1.a.	The permittee shall continue to implement a program of dry weather screening in areas of concern as identified by the permittee including but not limited to: commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. The permittee shall screen at a minimum, 25% of the outfalls discharging to the County's MS4 within the permit cycle.	DPW, EMD, COD		Each annual report shall include a list of locations upon which dry weather screening was conducted, the results and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.	The Dry Weather Screening Summary can be found in Appendix M.
B.2.l.1.b.	Criteria for selection of outfalls to be screened as required by Part I.B.2.1.1(a) above shall include but is not limited to the following: (1) List of sites requiring further investigation, as previously identified; (2) Age and density of development with the likelihood of illicit connections such as older residential, commercial and industrial areas; (3) Outfalls representing the general land uses of the County; (4) Poorly maintained gas stations, service stations, and shopping centers; (5) Presence of environmentally sensitive features downstream; and (6) History of complaints received on illicit discharges.	DPW, EMD, COD			
B.2.l.1.c.	The permittee may adopt a risk-based approach to dry weather screening identifying observation points based upon illicit discharge risks upstream of an outfall. Observation points may include points of interconnection, manholes, points of discharge, conveyances, or inlets suspected to have a high likelihood of receiving illicit discharges:	DPW, EMD, COD	Prince William County conducts routine inspection of its storm drainage system, inspecting the entire system within the permit term. Storm sewer is inspected using visual inspection techniques, as well as using CCTV. The County continues to implement a program to inspect all new drainage systems (eligible for County maintenance) using video cameras, prior to accepting the systems into the County's maintenance program.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.1.1.d.	<i>Each observation point screened may be counted as one outfall screening activity equivalent and counted towards the requirements of Part I.B.2.I)1)(a), however, at least 50% of the minimum annual screening events must include outfall screening;</i>	DPW, EMD, COD			
B.2.1.1.e.	<i>Illicit discharges reported by the public and subsequent investigations may not be counted as screening events; however, once the resolution of the investigation and the date the investigation was closed has been documented, an observation point may be established for future screening events; and</i>	DPW, EMD, COD			
B.2.1.1.f.	<i>The permittee's dry weather screening program shall use a checklist or mechanism to track the following information for dry weather screening events: (1) The unique outfall identifier for the outfall or observation point; (2) Indication a minimum of 72 hours has passed since the last precipitation event; (3) Site descriptions (e.g., conveyance type and dominant watershed land uses); (4) Observed indicators of possible illicit discharge events such as, floatables, deposits, stains, and vegetative conditions (e.g., dying or dead vegetation, excessive vegetative growth, etc.); (5) Whether or not a discharge was observed; (6) If a discharge was observed, the visual characteristics of the discharge (e.g., odor, color, clarity) and the physical condition of the outfall; and (7) For observation points, the location, downstream outfall unique identifier, and risk factors or rationale for establishing the observation point.</i>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.i.2.	<i>Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. The permittee shall maintain written procedures for a wet weather screening program which shall include standard operating procedure to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.</i>	DPW, EMD, COD	Prince William County's Wet Weather Screening Program began at the end of FY16, with first the sample occurring in September of 2017.	Each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.	Two sites were selected for sampling and sampling occurs during qualifying storm events. The quarterly Wet Weather Monitoring reports are included as Appendix N.
<b>B.2.m. Infrastructure Coordination</b>					
B.2.m.	<i>The permittee shall coordinate with the Virginia Department of Transportation (VDOT) regarding issues of MS4 physical-interconnectivity as described below:</i>	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
B.2.m.1.	<i>Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee's MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.</i>	DPW, EMD, COD	Prince William County will meet annually with VDOT as required.		Prince William County met with VDOT on April 15, 2024. A list of the meeting participants is included as Appendix O.
B.2.m.2.	<i>Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee's municipal boundaries that drain to the VDOT MS4.</i>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>• At the annual meeting (MS4 Action ID B.2.m.1), VDOT will be informed of the status of the county's mapping program. <ul style="list-style-type: none"> <li>• The county will work with VDOT to resolve ownership and location uncertainties.</li> </ul> </li> </ul>		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
<b>B.2.m.3.</b>	<p><i>Chesapeake Bay TMDL Action Plans – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation.</i></p> <p><i>The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.</i></p>	DPW, EMD, COD			
<b>B.2.m.4.</b>	<p><i>Other TMDL Action Plans – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.</i></p>	DPW, EMD, COD			
<b>B.2.m.5.</b>	<p><i>Credit for TMDL Implementation – Permit specific BMP retrofit requirements shall not be doublecounted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.</i></p>	DPW, EMD, COD			
<b>B.2.m.6.</b>	<p><i>Illicit Discharge Detection &amp; Elimination – The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee’s portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.</i></p>	DPW, EMD, COD			



MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
B.2.m.7.	<i>Water Quality Monitoring – The permittee shall conduct water quality monitoring as required by Part I.B.2.I) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.</i>	DPW, EMD, COD			
B.2.m.8.	<i>Annual Reports – As part of its Annual Report, the permittee shall document coordination efforts with VDOT that occurred during the reporting year pursuant to requirements (1) through (7) above.</i>	DPW, EMD, COD			During the annual meetings with VDOT the following items were discussed: <ul style="list-style-type: none"> <li>• Mapping (MS4 Service Areas)</li> <li>• Chesapeake Bay TMDL Action Plan updates</li> <li>• Other TMDL Action Plans</li> <li>• Credit for TMDL Implementation</li> <li>• Illicit Discharge Detection &amp; Elimination</li> <li>• Water Quality Monitoring</li> <li>• Other Issues</li> </ul>
<b>C. MONITORING REQUIREMENTS</b>					
<b>C.1. Biological Stream Monitoring</b>					
C.1.	<i>The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within Prince William County as follows:</i>	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		
C.1.a.	Five (5) stream sites within the county shall be selected for monitoring during the term of this permit	DPW, EMD, COD		<i>The initial annual report shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.</i>	Sample collection occurred at five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch.
C.1.b.	<i>Monitoring shall be conducted twice per year with one sample collected between July 1st and December 31st and one sample collected between January 1st and June 30th each year at each selected stream site.</i>	DPW, EMD, COD		<i>Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends</i>	Prince William County continued its Biological Monitoring Program in FY24 with its monitoring taking place in the Fall of 2023 and Spring of 2024. A copy of the Biological Monitoring Report is included as Appendix P.
C.1.c.	<i>The permittee shall use a biological stream monitoring approach based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.</i>	DPW, EMD, COD	Benthic sampling was conducted in accordance with the Sampling Plan.		
<b>C.2. In-Stream Monitoring</b>					
C.2..	<i>The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within Prince William County as follows:</i>	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
C.2.a.	Five (5) stream sites within the county shall be selected for monitoring during the term of this permit.	DPW, EMD, COD		The initial annual report shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.	There are five stream monitoring stations for this reporting period: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch.
C.2.b.	Monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location	DPW, EMD, COD	The county will conduct monitoring once per two months between January 1st and December 31st at each monitoring location.	Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.	Refer to Appendix Q for the data summary for the in-stream monitoring.
C.2.c.	Monitoring shall be performed for the following parameters: 1) pH 2) Dissolved Oxygen 3) Temperature 4) Total Suspended Solids 5) Ammonia as Nitrogen 6) Nitrate plus Nitrite Nitrogen 7) Total Kjeldahl Nitrogen 8) Total Nitrogen (calculated) 9) Dissolved Phosphorus 10) Total Phosphorus 11) Escherichia Coli	DPW, EMD, COD			
C.2.d.	Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part III.A. of this state permit.	DPW, EMD, COD			
C.2.e.	The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.	DPW, EMD, COD			There were no changes to the sampling locations during the FY24 reporting period.
<b>C.3. Floatables Solids Monitoring</b>					
C.3.	The permittee shall maintain a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Prince William County. The permittee will implement the floatables monitoring program as follows:	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
C.3.a.	Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.	DPW, EMD, COD	Monitoring occurred quarterly at five locations.		
C.3.b.	Monitoring shall be conducted once per quarter.	DPW, EMD, COD	Monitoring occurred quarterly at five locations.		
C.3.c.	The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.	DPW, EMD, COD		Each annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.	Please refer to Appendix R for the FY24 Floatables Monitoring Summary.
<b>D. TMDL ACTION PLAN AND IMPLEMENTATION</b>					
<b>D.1. Chesapeake Bay Special Condition</b>					
D.1.	The Commonwealth in its Phase I, Phase II, and Phase III Chesapeake Bay TMDL Watershed Implementation Plans (WIP) committed to a phased approach for MS4s permittees to implement necessary reductions. This state permit requires a cumulative 40% of the L2 scoping run reductions by June 30, 2026, and 100% of the L2 scoping run reductions by June 30, 2028. Conditions of future permits will be consistent with the TMDL or WIP conditions in place at the time of permit issuance.				
D.1.a.	a) Definitions The following definitions apply to Part I.D.1 1) "Existing Sources" means pervious and impervious urban land uses served by the MS4 as of June 30, 2009. 2) "New Sources" means pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009. 3) "Pollutants of concern" or "POC" means total nitrogen and total phosphorus.				
D.1.b.	<b>Reduction Requirements - Existing Development:</b>		• The Chesapeake Bay TMDL Action Plan was	In accordance with Part I	

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
	<p>Following a phased approach, the permittee shall reduce the load of total nitrogen and total phosphorous from existing sources within the MS4 service area by at least 40% of the Level 2 Scoping Run reductions by June 30, 2026, and 100% of the reductions by June 30, 2028. The 40% reduction is the sum of:</p> <p>(i) the first phase of reduction of 5.0% percent of the L2 Scoping Run Reductions based on the lands located within the MS4 service area as required by June 30, 2018;</p> <p>(ii) the second phase reduction of at least 35% of the L2 Scoping Run based on lands within the MS4 service area required by June 30, 2026; and</p> <p>(iii) the reduction of at least 40% of the L2 Scoping Run which shall only apply to the additional lands that were added to the MS4 service area since June 30, 2018, as required by June 30, 2026.</p> <p>As part of this permit's phased approach, the permittee shall reduce the load of total nitrogen and total phosphorous from existing developed lands served by the MS4 by 100% of the Level 2 Scoping Run Reductions by June 30, 2028. The required reduction shall be calculated using Table 1a for reductions by June 30, 2026 and Table 1b for reductions by June 30, 2028 included herein.</p>	DPW, EMD, COD	<p>submitted to DEQ on November 22, 2016.</p> <ul style="list-style-type: none"> <li>The Chesapeake Bay TMDL Action Plan became effective and enforceable on June 28, 2017, when DEQ approved the plan.</li> </ul>	<p>D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan no later than 24 months after the permit effective date.</p>	
D.1.c.	<p><b>Required Reductions – New Development:</b> No later than the expiration date of this permit (June 30, 2028), the permittee shall offset 100% of the increased loads from new sources initiating construction between July 1, 2009 and June 30, 2024 and designed in accordance with 9VAC25-870-47 and 9VAC25-870-93 et seq. if the following conditions apply:</p> <ol style="list-style-type: none"> <li>The activity disturbed one acre or greater; and</li> <li>The resulting total phosphorous load was greater than 0.45 lb/acre/year, which is equivalent to an average land cover condition greater than 16% impervious cover.</li> </ol> <p>The permittee shall utilize Table 2 included herein to develop the equivalent pollutant load for nitrogen for new sources meeting the requirements of this condition.</p>				

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.1.d.	<p><b>Required Reductions – Grandfathered Projects:</b>  <i>No later than the expiration date of this permit, the permittee shall offset 100% of the increased loads from projects grandfathered in accordance with 9VAC25-870-48 that began construction after July 1, 2014, if the following conditions apply:</i>            1) <i>The activity disturbs one acre or greater; and</i>            2) <i>The resulting total phosphorous load was greater than 0.45 lb/acre/year, which is equivalent to an average land cover condition of 16% impervious cover.</i>  <i>The permittee shall utilize Table 2 included herein to develop the equivalent pollutant load for nitrogen for grandfathered sources meeting the requirements of this condition.</i></p>				
D.1.e.	<p><i>Reductions achieved in accordance with the Permit for Discharges of Stormwater from Municipal Separate Storm Sewer Systems effective April 01, 2015, shall be applied toward the total reduction requirements to demonstrate compliance with Part I.D.1.b), c) and d).</i></p>				
D.1.f.	<p><i>Reductions required under Part I.D.1 b), c) and d) shall be achieved in each river basin in which the existing development, new development and grandfathered projects are located.</i></p>				
D.1.g.	<p><i>Loading and reduction values greater than or equal to 10 pounds calculated in accordance with Part I.D.1.b), c) and d) shall be calculated and reported to the nearest pound without regard to mathematical rules of precision. Loading and reduction values of less than 10 pounds reported in accordance with Part I.D.1.b), c) and d) shall be calculated and reported to two significant digits.</i></p>				
D.1.h.	<p><i>Reductions required in Part I.D.1.b), c) and d) shall be achieved through one or more of the following:</i>            1) <i>BMPs approved by the Chesapeake Bay Program;</i>            2) <i>BMPs approved by the Department; or</i>            3) <i>A trading program described in Part I.D.1.i).</i></p>	DPW, EMD, COD	The county meets this requirement through implementation of the actions described below.		

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.1.i.	<p>The permittee may acquire and use total nitrogen and total phosphorous credits in accordance with §62.1-44.19:21 of the Code of Virginia for purposes of compliance with the required reductions in Table 1 contained herein, provided the use of credits has been approved by the Department. The exchange of credits is subject to the following requirements:</p> <ol style="list-style-type: none"> <li>1) The credits are generated and applied to a compliance obligation in the same calendar year;</li> <li>2) The credits are generated and applied to a compliance obligation in the same tributary;</li> <li>3) The credits are acquired no later than June 1 immediately following the calendar year in which the credits are applied;</li> <li>4) No later than June 1 immediately following the calendar year in which the credits are applied, the permittee certifies on an MS4 Nutrient Credit Acquisition Form that the permittee has acquired the credits;</li> <li>5) Total nitrogen and total phosphorous credits shall be either point source credits generated by point sources covered by the Watershed Permit for Total Nitrogen and Total Phosphorous Discharges and Nutrient Trading in the Chesapeake Bay Watershed general permit issued pursuant to §62.1-44.19:14 of the Code of Virginia, or nonpoint source credits pursuant to §62.1-44.19:20 of the Code of Virginia.</li> </ol>	DPW, EMD, COD		Each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.	See Appendix S for the Chesapeake Bay TMDL Reductions Summary.
D.1.j.	<p>The permittee shall submit an updated Chesapeake Bay TMDL action plan for the cumulative 40% reductions required in Part I.D.1.b), c) and d) within 12 months of the permit effective date. The permittee shall submit an updated Chesapeake Bay TMDL action plan for the cumulative 100% reductions required in Part I.D.1.b), c) and d) by June 30, 2026. The action plans shall include the following information:</p> <ol style="list-style-type: none"> <li>1) Any new or modified legal authorities, such as ordinances, permits, policy, specific contract language, orders and inter-jurisdictional agreements, implemented or needing to be implemented, to meet the requirements of Parts I.D.1.b), c) and d) to include a review in the development of these actions;</li> <li>2) The load and cumulative reduction calculations for each river basin calculated in accordance with Parts I.D.1.b), c) and d);</li> <li>3) The total reductions achieved to date for each pollutant of concern in each river basin;</li> <li>4) A list of BMPs implemented to date to achieve reductions associated with the Chesapeake Bay TMDL including: <ol style="list-style-type: none"> <li>(a) The date of implementation; and</li> <li>(b) The reductions achieved.</li> </ol> </li> <li>5) The BMPs to be implemented by the permittee</li> </ol>	DPW, EMD, COD		Each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.	See Appendix S for the Chesapeake Bay TMDL Reductions Summary.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
	<p><i>prior to the expiration date of this permit to meet the cumulative reductions calculated in Parts I.D.1.b), c) and d), including, as applicable:</i></p> <p><i>(a) Type of BMP;</i>  <i>(b) Project name;</i>  <i>(c) Location;</i>  <i>(d) Percent removal efficiency for each pollutant of concern; and</i>  <i>(e) Calculation of the reduction expected to be achieved by the BMP calculated and reported in accordance with the methodologies established in Part I.D.1.g) for each pollutant of concern.</i></p> <p><i>6) An estimate of the expected cost to implement the necessary reductions during the permit cycle; and</i></p> <p><i>7) A summary of any comments received as a result of public participation required in Part I.D.1.k), the permittee's response, identification of any public meetings to address public concerns, and any revisions made to the Chesapeake Bay TMDL action plan as a result of public participation.</i></p>	DPW, EMD, COD			
D.1.k.	<p><i>Prior to submittal of the action plan required in Part I.D.1.j), the permittee shall provide an opportunity for public comment on the additional BMPs proposed to meet the reductions not previously approved by the Department in the first phase Chesapeake Bay TMDL action plan for no less than 15 days.</i></p>	DPW, EMD, COD			See Appendix S for the Chesapeake Bay TMDL Reductions Summary.
D.1.i.	<p><i>As part of the development of the Chesapeake Bay TMDL action plan, the permittee may consider use of the following:</i></p> <p><i>1) Implementation of BMPs on unregulated lands, provided any necessary baseline reduction is not included toward meeting the required reduction in this permit;</i></p> <p><i>2) Utilization of stream restoration projects, provided the credit applied to the required POC load reduction is prorated based on the ratio of regulated urban acres to total drainage acres upstream of the restored area;</i></p> <p><i>3) Establishment of a memorandum of understanding (MOU) with other MS4 permittees that discharge to the same or adjacent eight-digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative MS4s; and</i></p> <p><i>4) Any BMPs installed after June 30, 2009 as part of a retrofit program may be applied towards meeting the required load reductions provided any necessary baseline reductions are not included.</i></p>	DPW, EMD, COD			See Appendix S for the Chesapeake Bay TMDL Reductions Summary.

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.1.m.	<i>The permittee shall address any modification to the TMDL or watershed implementation plan that occurs during the term of this permit as a part of its permit reapplication as required in Part III.M of this permit.</i>	DPW, EMD, COD			
D.1.n.	<i>Chesapeake Bay TMDL action plan implementation. The permittee shall implement the TMDL action plan required in Part I.D.1.j) of this permit according to the schedule therein. Compliance with this requirement represents adequate progress for this permit term towards achieving TMDL wasteload allocations consistent with the assumptions and requirements of the TMDL.</i>	DPW, EMD, COD			
D.1.o.	<p><i>Documentation identifying which BMPs were completed within the current annual reporting period. The following information shall also be included:</i></p> <p><i>(a) For BMPs used to meet the Chesapeake Bay TMDL requirements of Part I.D.1, the SWM facility unique identifier number, total acreage treated, total impervious and total pervious acreage treated, the pollutants of concern load reductions reported in pounds per year, the pollutant removal efficiencies and source of each efficiency, as well as proposed BMPs planned for implementation during the next reporting cycle.</i></p> <p><i>(b) For retrofit projects used to meet the Chesapeake Bay TMDL requirements of Part I.D.1, the type of land use being retrofitted, the existing stormwater management facility type before retrofit, if applicable, retrofit type used, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and total pervious acreage retrofitted, the SWM facility unique identifier number, and if applicable, the incremental reduction credit achieved with the retrofit (the incremental credit is defined as the difference between the existing SWM facility reduction credit and the retrofit reduction credit attained) including pre and post pollutant</i></p>				



MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
	<p><i>retrofit removal efficiencies and source of each efficiency.</i></p> <p>3) <i>A list of BMPs implemented during the reporting period but not reported to the DEQ BMP Warehouse in accordance with Part II and the estimated reduction of pollutants of concern achieved by each and reported in pounds per year.</i></p> <p>4) <i>If the permittee acquired credits during the reporting period to meet all or a portion of the required reductions in Part I.D.1.b), c) or d), a statement that credits were acquired.</i></p> <p>5) <i>Documentation that sufficient control measures have been implemented (or documentation detailing that implementation will be complete by June 30, 2026, for the cumulative 40% reductions and June 30, 2028 for the cumulative 100% reductions) to meet the compliance targets identified in this section. If temporary credits or offsets have been purchased in order to meet the compliance targets, the list of temporary reductions utilized to meet the cumulative required reductions of L2 in this permit and a schedule of implementation to ensure permanent cumulative 40% and 100% reductions shall be provided.</i></p> <p>6) <i>Following notification from the department of the start date for the required electronic submission of Chesapeake Bay TMDL implementation annual status reports, as provided for in 9VAC25-31-1020, such forms and reports submitted after that date shall be electronically submitted to the department in compliance with this section and 9VAC25-31-1020. There shall be at least three months' notice provided between the notification from the department and the date after which such forms and reports must be submitted electronically.</i></p>	DPW, EMD, COD			
	<b>D.2. TMDL Action Plans other than the Chesapeake Bay TMDL</b>				
D.2.a.	<p><i>The Permittee shall update, as necessary, and maintain a local TMDL action plan designed to reduce loadings for pollutants of concern if the permittee discharges the pollutants of concern to an impaired water for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA) as described in Part I D 2 a 1 and 2:</i></p>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.2.a.1.	<p>For TMDLs approved by EPA prior to April 1, 2015 and in which an individual or aggregate wasteload has been allocated to the permittee (see Attachment 3 to the Fact Sheet), the permittee shall develop and initiate or update as applicable the local TMDL action plans to meet the conditions of Part I D 2 c, d, e, f, and g, as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan. Updated action plans shall include:</p> <p>a) An evaluation of the results achieved by the previous action plan; and</p> <p>b) Any adaptive management strategies incorporated into updated action plans based on action plan evaluation.</p>	DPW, EMD, COD	<ul style="list-style-type: none"> <li>•TMDL Action Plans other than the Chesapeake Bay TMDL Action Plan were submitted to DEQ in December of 2016.</li> <li>• The TMDL Action Plans will become effective and enforceable upon written approval from DEQ.</li> </ul>		
D.2.a.2.	<p>For TMDLs approved by EPA on or after April 1, 2015, and prior to the effective date of this permit, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate implementation of action plans to meet the conditions of Part I D 2 c, d, e, f, and g, as applicable no later than 30 months after the permit effective date.</p>	DPW, EMD, COD			
D.2.b.	<p>The permittee shall complete implementation of the TMDL action plans as determined by the schedule. TMDL action plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is achieved in the implementation of BMPs designed to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL.</p>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.2.c.	<p>Each local TMDL action plan developed by the permittee shall include the following:</p> <ol style="list-style-type: none"> <li>1) The TMDL project name;</li> <li>2) The EPA approval date of the TMDL;</li> <li>3) The wasteload allocated to the permittee (individually or in aggregate), and the corresponding percent reduction, if applicable;</li> <li>4) Identification of the significant sources of the pollutants of concern discharging to the permittee's MS4 that are not covered under a separate VPDES permit. For the purposes of this requirement, a significant source of pollutants of concern means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL;</li> <li>5) The BMPs designed to reduce the pollutants of concern in accordance with Part I D 2 d, e, f, and g;               <ol style="list-style-type: none"> <li>a) Any calculations required in accordance with Part I D 2 d, e, f, and g;</li> <li>b) For action plans developed in accordance with Part I D 2 d, e, f, and g, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants; and</li> <li>c) A schedule of anticipated actions planned for implementation during this permit term.</li> </ol> </li> </ol>	DPW, EMD, COD			
D.2.d.	<p>Bacterial TMDLs.</p> <ol style="list-style-type: none"> <li>1) The permittee shall implement at least six strategies designed to reduce the load of bacteria to the MS4. Table 3 provides a list of strategies which correspond to sources identified in Part I D 2 c 4. Additional strategies that are equivalent or better than the strategies provided in Table 3 may be used as approved by the Department.</li> </ol>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.2.e.	<p><i>Local sediment, phosphorus, and nitrogen TMDLs.</i></p> <p><i>1) The permittee shall select and implement strategies designed to reduce the loads associated with sediment, phosphorus, or nitrogen to the permittee's MS4. The permittee may implement this requirement through one or more of the following:</i></p> <p><i>a) One or more of the BMPs from the Virginia Stormwater BMP Clearinghouse listed in 9VAC25-870-65 or other approved BMPs found on the Virginia Stormwater BMP Clearinghouse website;</i></p> <p><i>b) One or more BMPs approved by the Chesapeake Bay Program. Pollutant load reductions generated by annual practices, such as street and storm drain cleaning, shall only be applied to the compliance year in which the annual practice was implemented; or</i></p> <p><i>c) Land disturbance thresholds lower than Virginia's regulatory requirements for erosion and sediment control and post development stormwater management.</i></p> <p><i>2) The permittee may meet the local TMDL requirements for sediment, phosphorus, or nitrogen through BMPs implemented or sediment, phosphorus, or nitrogen credits acquired. BMPs implemented and nutrient and sediment credits acquired to meet the requirements of the Chesapeake Bay TMDL in Part I D 1 may also be utilized to meet local TMDL requirements as long as the BMPs are implemented, or the credits are generated in the watershed for which local water quality is impaired.</i></p> <p><i>3) The permittee shall calculate the anticipated load reduction achieved from each BMP and include the calculations in the action plan required in Part I D 2 c 5.</i></p> <p><i>4) No later than 36 months after the effective date of this permit, the permittee shall submit to the department an update on the progress made toward achieving local TMDL action plan goals and the anticipated end dates by which the permittee will meet each wasteload allocation for sediment, phosphorus, or nitrogen. The proposed end date may be developed in accordance with Part II B 3.</i></p>	DPW, EMD, COD			

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
D.2.f.	<p><i>Polychlorinated biphenyl (PCB) TMDLs.</i></p> <p><i>1) For each PCB TMDL action plan, the permittee shall include an inventory of potentially significant sources of PCBs owned or operated by the permittee that drains to the MS4 that includes the following information:</i></p> <p><i>a) Location of the potential source;</i></p> <p><i>b) Whether or not the potential source is from current site activities or activities previously conducted at the site that have been terminated (i.e., legacy activities); and</i></p> <p><i>c) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.</i></p> <p><i>2) If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery.</i></p> <p><i>3) As part of its annual reporting requirements, the permittee shall submit results of any action plan PCB monitoring or product testing conducted.</i></p>	DPW, EMD, COD			
D.2.g.	<p><i>Prior to submittal of the action plan required in Part I D 2 a, the permittee shall provide an opportunity for public comment for no fewer than 15 days on the proposal to meet the local TMDL action plan requirements.</i></p>	DPW, EMD, COD			
D.2.h.	<p><i>The MS4 Program Plan as required by Part I A 6 of this permit shall incorporate each local TMDL action plan. Local TMDL action plans may be incorporated by reference into the MS4 Program Plan provided that the Program Plan includes the date of the most recent local TMDL action plan and identification of the location where a copy of the local TMDL action plan may be obtained.</i></p>	DPW, EMD, COD			
D.2.i.	<p><i>For each reporting period, each annual report shall include a summary of actions conducted to implement each local TMDL action plan.</i></p>	DPW, EMD, COD			
<b>E. ANNUAL REPORTING</b>					
E.1.	<p><i>The permittee shall submit the annual report to the Department, no later than October 1st of each year. The report shall cover the previous fiscal year from July 1st to June 30th and include the following separate sections:</i></p>		The annual reports will be submitted in accordance with the schedule laid out in the permit.		
E.1.a.	<p><i>Background Information</i></p> <p><i>a) The permittee and permit number of the program submitting the annual report;</i></p> <p><i>b) Any modifications to the MS4 Program Plan as a result of the annual report;</i></p> <p><i>c) The reporting dates for which the annual report is being submitted; and,</i></p> <p><i>d) Certification as per Part III.K.</i></p>		All annual reports will include the required background information.	Each annual report shall include the required background information.	

MS4 Action ID	Permit Requirement	Responsible Party	2024 Program Plan Elements (July 1, 2023 through June 30, 2024)	Specific Reporting Requirement	2024 Annual Report (July 1, 2023 through June 30, 2024)
E.1.b.	<i>A summary of the components implemented under Part I.B. and an evaluation of the effectiveness of each component. The permittee should attempt to limit any component's narrative summary to no longer than two-pages plus any necessary tables and figures.</i>		The annual reports will include a summary of components implemented and an evaluation of the effectiveness of each component.	<i>Each annual report shall include a summary of components implemented and an evaluation of the effectiveness of each component.</i>	See Section B above.
E.1.c.	<i>A summary report of the monitoring programs listed under Part I.C.</i>		The annual reports will include a summary of the monitoring programs listed under Part I.C.	<i>Each annual report shall include a summary report of the monitoring programs listed under Part I.C.</i>	See Appendix P.
E.1.d.	<i>A summary of the implementation of each component listed under Part I.D.</i>		The annual reports will include a summary of the implementation of components under Part I.D.	<i>Each annual report shall include a summary of the implementation of each component listed under Part I.D.</i>	See Appendix T for a summary of the implementation of the TMDL Action Plans.
E.1.e.	<i>The Specific Reporting Requirements identified in this state permit.</i>		The annual reports will include the Specific Reporting Requirements.	<i>Each annual report shall include the Specific Reporting Requirements identified in this state permit.</i>	The Specific Reporting Requirements identified in the permit are contained in the Specific Reporting Requirement column of this table.
E.2.	Following notification from the department of the start date for the required electronic submission of annual reports, as provided for in 9VAC25-31-1020, such forms and reports submitted after that date shall be electronically submitted to the department in compliance with this section and 9VAC25-31-1020. There shall be at least three months' notice provided between the notification from the department and the date after which such forms and reports must be submitted electronically.				

## **Appendix A**

### **Site Inspector and Plan Reviewer Certifications**

## Site Inspector Certifications

Name	Certification	Number	Exp. Date
<b>Vijay Dindigal</b>	Professional Engineer	402048764	6/30/2025
<b>Principal Engineer</b>	Land Surveyor	403002810	6/30/2026
	GISP	67810	2/25/2025
	DEQ-Dual Combined Adminstrator	DCA 0563	11/12/2025
<b>Robert Cook</b>	DEQ Dual Inspector	DIN0533	7/11/2025
<b>West side Supervisor</b>	DEQ E/S Program Admin	374	5/31/2025
	VDOT Asphalt I	n/a	12/31/2027
	VDOT Asphalt II	n/a	12/31/2028
<b>Stefan Gitchev</b>	DEQ Dual Inspector	DIN0535	10/3/2025
<b>East side Supervisor</b>	DEQ Dual Program Admin	DPA0172	7/29/2027
	VDOT Soils & Aggregate	n/a	12/31/2028
	VDOT Asphalt I	n/a	12/31/2026
	VDOT Asphalt II	n/a	12/31/2027
	ACI Concrete Field	2271172	2/14/2029
<b>Shawn Wray</b>	Dual Inspector	DIN0927	10/15/2024
<b>CCTV - Storm Drainage</b>	Program Admin E&S	ESPA0257	4/14/2025
<b>Special projects</b>	Nassco Cert	U-0319-070305018	2/7/2025
<b>Philip Darko</b>	DEQ Dual Inspector	DIN0538	1/28/2025
<b>West side Inspector</b>	DEQ Dual Program Admin	DPA0154	11/7/2026
	VDOT Asphalt II	n/a	6/1/2027



	VDOT Asphalt I	n/a	6/1/2027
	VDOT Soils & Aggregates	n/a	11/11/2028
	ACI Concrete Field Testing Technician - Grade I	n/a	4/17/2029
	U.S. EPA - Water Quality Standards & Criteria	n/a	n/a
<b>Morris Gilbert</b>	DEQ SWM Inspector	SWIN2944	4/4/2027
<b>West side Inspector</b>			
<b>Amadu Jalloh-Jamboria</b>	DEQ E&S Cert	ESIN2371	8/27/2025
<b>West side Inspector</b>	VDOT Work Zone Cert	60923316	6/30/2027
	VDOT GR Cert	N/A	
	OSHA 10-hour Cert	N/A	
	Nuclear Gauge Cert	23011-168-667-1388	6/13/2026
	DEQ SWM Cert	SWIN2754	7/28/2026
<b>Jalal Qaradaghi</b>	DEQ Dual inspector	DIN0536	11/30/2025
<b>West side Inspector</b>	VDOT Asphalt I	n/a	5/31/2027
<b>Roger Barnes</b>	DEQ Dual Inspector	DIN0220	10/27/2027
<b>East side Supervisor</b>			
<b>Thomas French</b>	DEQ Dual Inspector	DIN1764	10/25/2025
<b>East side Supervisor</b>	ISA Certified Arborist	MA-5485A	12/31/2025
	ISA Tree Risk Assessment	MA-5485A	3/20/2029

<b>Adnan Manzoor</b>	DEQ Dual Inspector	DIN1979	2/6/2027
<b>East side Supervisor</b>	VDOT Asphalt I	n/a	12/31/2027
	VDOT Soils & Aggregate	n/a	12/31/2026
	ACI Concrete Field	2159575	2/11/2027
<b>Michael "Mick" Tilley</b>	DEQ Dual Inspector	DIN1234	11/4/2027
<b>East side Supervisor</b>	ACI Concrete Field	2271169	2/14/2029
	VDOT Soils & Aggregate	n/a	12/31/2027
	VDOT Asphalt I	n/a	12/31/2027
	VDOT Asphalt II	n/a	12/31/2028
<b>George Hall</b>	NASSCO	P0044430-102023	10/19/2023
<b>CCTV - Storm Drainage</b>			
<b>Kevin Maris</b>			
<b>CCTV - Storm Drainage</b>			

## Plan Reviewer Certifications

Name	Certification	Number	Exp. Date
<b>Raj Bidari</b>	DEQ Dual Plan Reviewer	DPR0117	12/28/2027
<b>Engineer Manager Plan Reviewer</b>	DEQ SWM Program Administrator	SWP0156	3/9/2028
<b>Quirico "Rico" Perando</b>			
<b>Principal Engineer</b>			
<b>Geotechnical</b>			
<b>Bodha Adhikari</b>	DEQ Dual Combined Administrator	DCA0323	12/29/2026
<b>Sr. Engineer</b>			
<b>Geotechnical</b>			
<b>Youssef Djebbari</b>	DEQ SWM Plan Reviewer	SWPR0217	4/18/2028
<b>Sr Engineer</b>	DEQ SWM Program Administrator	SWPA0165	9/3/2025
<b>Michael El-Hage</b>	DEQ SWM Plan Reviewer	SWPR0213	4/2/2025
<b>Principle Engineer</b>	DEQ Erosion and Sediment Control Combined Admin	304	11/30/2026
<b>Mirza Baig</b>	DEQ Combined Administrator	DCA0188	10/22/2027
<b>Sr Engineer</b>			

## **Appendix B**

### **Land Disturbance Permits Issued**

**Land Plans with 2500 SqFt or more Disturbed Area with Land Permit Issued**

07/01/2023 Through 06/30/2024

<b>Plan Name / Plan Number / Permit Number</b>	<b>Parcel Number / Address</b>	<b>Developer / Owner</b>	<b>Phone</b>	<b>Disturbed Area</b>	<b>Plan Approval Date</b>
BATTLEFIELD BUSINESS PARK 99-00242R01S01  LND1999-00300 LND1999-00378	7697-47-3772 7777 INFANTRY RIDGE RD MANASSAS, VA 20109	WILES MENCH CORP.		16.470	04/22/2024
THE PINES AT KETTLE RUN SDR2022-00041  LND2024-00102	7394-14-2923 11225 PINE VIEW ESTATES CT NOKESVILLE, VA 20181	EASTERN VIRGINIA LAND COMPANY	5408404849	2.610	09/07/2023
HARBOR RESERVE SDR2022-00066  LND2024-00203	8188-59-1616 17936 CURTIS DR DUMFRIES, VA 22026	SMITH ENGINEERING	7035930299	15.340	10/20/2023
INNOVATION TOWN CENTER - SECTION 1 SDR2022-00071  LND2024-00130	7596-92-5922 8226 WELLINGTON RD MANASSAS, VA 20109	LAND DESIGN CONSULTANTS	7036804585	28.180	12/09/2023
POTOMAC SHORES LB 4 SEC 1 - REVISION TO RET WALLS SDR2022-00072 LND2024-00154	8389-11-0801 2175 CHERRY HILL RD	POTOMAC SHORES RESIDENTIAL ASSOCIATION	7034931447	76.800	01/02/2024
PRESERVE AT LONG BRANCH - SECTION 3 SDR2022-00074  LND2024-00136	7793-91-8552 12775 CLASSIC SPRINGS DR NOKESVILLE, VA 20181	STANLEY MARTIN HOMES LLC	7033467005	22.750	11/07/2023
LOMOND VILLAGE SDR2023-00007  LND2024-00137	7696-59-5040 8050 WILLIAMSON BLVD MANASSAS, VA 20109	THE ENGINEERING GROUPE, INC	703670098511	10.700	11/21/2023
TOWNS AT DALE WOODS SDR2023-00033  LND2024-00175	8092-28-0611 5890 DALE BLVD WOODBIDGE, VA 22193	BEAZER HOMES, LLC - VIRGINIA DIVISION	7037499111	4.650	02/07/2024

**Land Plans with 2500 SqFt or more Disturbed Area with Land Permit Issued**  
 07/01/2023 Through 06/30/2024

<b>Plan Name / Plan Number / Permit Number</b>	<b>Parcel Number / Address</b>	<b>Developer / Owner</b>	<b>Phone</b>	<b>Disturbed Area</b>	<b>Plan Approval Date</b>
INNOVATION TOWN CENTER - SECTION 2 SDR2023-00038  LND2024-00219	7596-92-5922 8226 WELLINGTON RD MANASSAS, VA 20109	STANLEY MARTIN HOMES, LLC		15.550	03/07/2024
MIA'S MEADOW SDR2023-00042  LND2024-00021	8091-54-1995 14905 HEATHER BLOOM DR WOODBIDGE, VA 22193	NVP, INC	7033094238	15.720	07/24/2023
ROBERT TRENT JONES GOLF CLUB, PHASE 1, SECTION 3A SDR2023-00052 LND2024-00127	7296-97-2568 14951 TURTLE POINT DR GAINESVILLE, VA 20155	THE ENGINEERING GROUPE, INC	5718954800	2.650	10/30/2023
DVCC - Gatehouse Residential - Revision SDR2023-00053  LND2024-00120	7298-49-4267 5527 VELTRI TER HAYMARKET, VA 20169	TOLL BROTHERS, INC	7033033811	2.600	10/26/2023
BRIGHTWOOD FOREST PHASE 3 SDR2024-00002  LND2024-00034	8291-21-7856 15371 BALLERINA LOOP WOODBIDGE, VA 22193	TAYLOE RIDGE LLC	7035901111	32.870	07/13/2023
HAYMARKET CROSSING II PHASE 1 SDR2024-00013  LND2024-00293	7298-54-4528 15401 HEATHCOTE BLVD HAYMARKET, VA 20169	PULTE GROUP	7032736196	27.640	06/10/2024
BEACON TOWNS AT BELMONT BAY, SECTION 4 SDR2024-00018 LND2024-00268	8492-32-5196 13865 CLEAR LAKE CIR WOODBIDGE, VA 22191	MILLER & SMITH RESIDENTIAL, LLC		2.120	05/08/2024
BEACON PARK TOWNS AT BELMONT BAY SECTIONS 4 - EGP SDR2024-00052 LND2024-00183	8492-32-5196 13865 CLEAR LAKE CIR WOODBIDGE, VA 22191	DEWBERRY	7034682240	2.210	02/07/2024
UPLAND MANOR - LANDBAY C SDR2024-00054	7397-19-6620 14699 GRAND CRU LOOP GAINESVILLE, VA 20155	VAN METRE HOMES	7033485800	8.700	05/25/2024

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LND2024-00286					
BENEDICTINE SISTERS SECTION 1- UNIFORM RAISE SDR2024-00060 LND2024-00273	7495-88-3042 12580 LINTONS FORD LN BRISTOW, VA 20136	BROOKFIELD RESIDENTIAL	5715814791	15.680	05/10/2024
BEACON PARK TOWNS AT BELMONT BAY SECTION 5 - EGP SDR2024-00070 LND2024-00174	8492-43-4228 13769 CHRISSWIND AVE WOODBIDGE, VA 22191	MILLER & SMITH RESIDENTIAL, LLC		5.540	02/08/2024
MOHAMMADIA CENTER SPR2019-00045 LND2024-00074	8193-40-5813 4291 PRINCE WILLIAM PKWY WOODBIDGE, VA 22192	IMEG CORPORATION	7033345652	4.030	08/11/2023
SUMMIT SCHOOL ROAD EXTENSION & TELEGRAPH RD SPR2021-00127 LND2024-00291	8392-05-3846 13455 TELEGRAPH RD WOODBIDGE, VA 22192	PRINCE WILLIAM COUNTY TRANSPORTATION	7037925276	29.150	07/06/2023
NEW DOMINION CENTER SPR2022-00016 LND2024-00280	7896-33-2693 8220 CONNER DR MANASSAS, VA 20111	CHRISTOPHER CONSULTANTS	7033345659	0.430	05/31/2024
WESTVIEW 66 MNZ01 SPR2022-00107 LND2024-00132	7597-85-1215 11314 BALLS FORD RD MANASSAS, VA 20109	MICROSOFT		29.650	11/08/2023
UNIVERSITY VILLAGE AT INNOVATION PH 1 SPR2022-00229 LND2024-00135	7696-00-8306 11000 UNIVERSITY BLVD 401 MANASSAS, VA 20110	CHRISTOPHER CONSULTANTS, LTD	7033345652	26.820	07/13/2023
POSSUM PT PWR STA PONDS ABC&E CLOSURE BY REMOVAL SPR2022-00259 LND2024-00173	8288-96-2368 19000 POSSUM POINT RD DUMFRIES, VA 22026	VIRGINIA ELECTRIC AND POWER COMPANY	5402590384	98.500	01/19/2024

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PROJECT GAINESVILLE SPR2022-00273  LND2024-00128	7497-41-7199 5945 WELLINGTON RD GAINESVILLE, VA 20155	AMAZON DATA SERVICES, INC.	5405507125	47.810	10/11/2023
INNOVATION TOWN CENTER - KATHERINE JOHNSON AVE SPR2022-00288 LND2024-00062	7596-92-6825 8226 WELLINGTON RD MANASSAS, VA 20109	STANLEY MARTIN HOMES, LLC		38.230	09/01/2023
FREDDY'S STEAKBURGERS AT SUDLEY MANOR SPR2022-00338 LND2024-00033	7697-10-9039 8074 ASHTON AVE MANASSAS, VA 20109	ASHTON AVENUE PROPERTIES LLC		0.910	07/17/2023
BUILDING VA 6 SPR2022-00344  LND2024-00119	7596-65-2312 7729 WELLINGTON RD MANASSAS, VA 20109	JCL CONSULTING LLC	7034889877	13.690	08/22/2023
OCCOQUAN GREENWAY - SECTION 4 BRIDGE SPR2022-00435  LND2024-00284	8293-49-5338 11339 CROMWELL CT WOODBIDGE, VA 22192	PWC PARKS & RECREATION	7037924234	0.060	11/09/2023
LOMOND VILLAGE - PI PLAN SPR2022-00436  LND2024-00124	7696-59-5040 8050 WILLIAMSON BLVD MANASSAS, VA 20109	THE ENGINEERING GROUPE, INC	703670098511	8.440	10/23/2023
GAINESVILLE CROSSING DATA CENTER BUILDINGS 2 & 3 SPR2023-00008 LND2024-00188	7497-56-0118 13700 UNIVERSITY BLVD GAINESVILLE, VA 20155	GCDC PURCHASER, LLC C/O AFFINIUS/USAA	6465583975	31.020	02/27/2024
DALE FOREST APARTMENTS SPR2023-00028  LND2024-00160	8191-48-4479 14321 WRANGLER LN 1 WOODBIDGE, VA 22193	BMF IV FP DALE FOREST LLC	5714545651	0.350	07/10/2023
BUILDING VA7 SPR2023-00055	7596-76-2123 8322 BETHLEHEM RD MANASSAS, VA 20109	IRON MOUNTAIN	4016365689	17.380	09/18/2023



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LND2024-00069					
MINIPRICE SELF STORAGE AT OCCOQUAN SPR2023-00074	8292-81-1076 2645 PRINCE WILLIAM PY WOODBIDGE, VA 22192	SITE IMPROVEMENT ASSOC., INC	7576859000	2.450	09/18/2023
LND2024-00061					
GROUP C IAD011 SPR2023-00091	7597-62-3841 7510 MASON KING CT MANASSAS, VA 20109	AMAZON	5713311290	2,471.000	10/12/2023
LND2024-00262					
PEDESTRIAN BRIDGE INSTALLATION SPR2023-00102	8193-56-7645 12110 DERRIFORD CT WOODBIDGE, VA 22192	RAMCO	7032311934	195.000	10/19/2023
LND2024-00121					
VILLAGE PLACE TECHNOLOGY PARK SPR2023-00130	7397-36-4911 14403 JOHN MARSHALL HWY GAINESVILLE, VA 20155	E.E. REED	5715978964	44.240	07/24/2023
LND2024-00027					
PROJECT MANGO PH 3 SPR2023-00141	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	42.230	08/21/2023
LND2024-00099					
LAKE POINTE APARTMENTS SPR2023-00142	8292-75-8317.00 2580 CATON HILL RD WOODBIDGE, VA 22192	LAKE POINTE APARTMENTS LLC	2029872947	13.600	07/10/2023
LND2024-00016					
PROJECT MANGO HUB SPR2023-00152	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	BOHLER ENGINEERING	7037099500	4.540	08/22/2023
LND2024-00092					
MNZ03 SPR2023-00179	7496-88-1217 8008 DEVLIN RD BRISTOW, VA 20136	MICROSOFT		63.040	03/14/2024
LND2024-00250					

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PNC - VA GATEWAY SPR2023-00187  LND2024-00204	7397-71-9139 5000 WELLINGTON RD GAINESVILLE, VA 20155	BOHLER	5403494500	0.340	01/18/2024
NTT GLOBAL DATA CENTER VA10 SPR2023-00188  LND2024-00063	7397-65-0198 14300 JOHN MARSHALL HWY GAINESVILLE, VA 20155	JCL CONSULTING LLC	7034889877	77.870	08/10/2023
DABNEY ROAD INDUSTRIAL SPR2023-00207  LND2024-00096	8492-03-4759 13706 DABNEY RD WOODBIDGE, VA 22191	BOHLER	5403494500	10.150	10/05/2023
HOLINESS TABERNACLE PH 1 SPR2023-00213  LND2024-00257	8391-76-0912 1505 WALNUT ST WOODBIDGE, VA 22191	HOLINESS TABERNACLE COGIC		1.160	04/29/2024
NOVEC - RIXLEW SUBSTATION SPR2023-00216  LND2024-00108	7696-40-3987 8940 WELLINGTON RD MANASSAS, VA 20109	DEWBERRY	7034682240	11.190	08/15/2023
FARM BREW LIVE EXPANSION DEVELOPMENT PROJECT SPR2023-00222 LND2024-00123	7695-14-7690 9901 DISCOVERY BLVD MANASSAS, VA 20109	SILVA HOLDINGS LLC	7033823352	8.400	10/25/2023
PWCPS - WOODBRIDGE AREA ELEMENTARY SCHOOL SPR2023-00233 LND2024-00078	8392-62-6845 1550 PRINCE WILLIAM PKWY WOODBIDGE, VA 22191	PRINCE WILLIAM COUNTY PUBLIC SCHOOLS	7037918717	11.960	09/20/2023
INDEPENDENT HILL VILLAGE PUBLIC IMPROVEMENT PLAN SPR2023-00236 LND2024-00248	7891-48-9767 14365 INDEPENDENT HILL DR MANASSAS, VA 20112	ELM STREET DEVELOPMENT, INC	7037349730	19.540	04/03/2024
PRINCE WILLIAM COUNTY LANDFILL 2022 SPR2023-00242	7991-09-6721 14811 DUMFRIES RD MANASSAS, VA 20112	PWC PUBLIC WORKS		0.940	08/18/2023

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LND2024-00053					
NTT DATA CENTERS VA 13 SPR2023-00244	7397-65-0198 14300 JOHN MARSHALL HWY GAINESVILLE, VA 20155	NTT GLOBAL DATA CENTER VA10, LLC	3479464736	15.400	12/22/2023
LND2024-00165					
DABNEY DISTRIBUTION CENTER SPR2023-00256	8492-04-2305 13600 DABNEY RD WOODBIDGE, VA 22191	DABNEY ROAD OWNER LLC	9174171442	7.900	08/11/2023
LND2024-00035					
VIRGINIA OAKS DAYCARE SPR2023-00267	7397-42-3398 7541 VIRGINIA OAKS DR GAINESVILLE, VA 20155	THURSTON COMPANIES INC	7035512015	0.700	12/29/2023
LND2024-00212					
WELLINGFORD INDUSTRIAL PARK LOT 19A-1A SPR2023-00278	7597-10-3031 7850 WELLINGFORD DR MANASSAS, VA 20109	MJ ROBIC COMPANIES	7033936700	0.600	07/18/2023
LND2024-00177					
VERIZON MANASSAS FUEL OIL TANK REPLACEMENT SPR2023-00302	7697-47-3772 7777 INFANTRY RIDGE RD MANASSAS, VA 20109	AECOM TISHMAN CONSTRUCTION SERVICES	9178163917	0.130	08/01/2023
LND2024-00101					
MILESTONE TOWERS @ FLEETWOOD DRIVE SPR2023-00311	7591-41-4412 15205 FLEETWOOD DR NOKESVILLE, VA 20181	MILESTONE TOWERS	7036202555	0.200	07/19/2023
LND2024-00029					
TACKETTS MILL CAR WASH SPR2023-00314	8393-10-4281 12831 HARBOR DR WOODBIDGE, VA 22192	SPOTLESS BRANDS		0.110	07/10/2023
LND2024-00060					
EVERBROOK ACADEMY - ROUTE 1 SPR2023-00315	8290-86-8298 15725 NEABSCO RD WOODBIDGE, VA 22191	ENCORE CONSTRUCTION, LLC	2282054662	2.530	08/31/2023
LND2024-00059					

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POTOMAC SHORES TOWN CENTER - BLOCK 5 REVISION 1 SPR2023-00325 LND2024-00107	8389-53-9826 1542 CHERRY HILL RD DUMFRIES, VA 22026	J2 ENGINEERS	703361155040	4.650	09/22/2023
BROAD RUN INDUSTRIAL PARK - LOT 9B SPR2023-00329  LND2024-00164	7595-78-9620 9502 HORNBAKER RD MANASSAS, VA 20109	CORNER PROPERTIES LLC	7039061093	1.990	11/16/2023
QUANTICO CENTER SPR2023-00350  LND2024-00028	8189-68-5008 16830 DUMFRIES RD DUMFRIES, VA 22025	CORNERSTONE DEVELOPMENT OF VIRGINIA	7035035555	5.730	07/31/2023
PROJECT MANGO PH 1 SPR2023-00353  LND2024-00071	7496-47-2202 8227 LINTON HALL RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	96.100	09/27/2023
LATSIOS INDUSTRIAL SPR2023-00356  LND2024-00098	7497-54-2346 12875 RANDOLPH RIDGE LN MANASSAS, VA 20109	CHRISTOPHER CONSULTANTS, LTD	7033345652	10.250	10/11/2023
VIRGINIA MEADOWS LOTS 16A AND 17A SPR2023-00361  LND2024-00030	7596-26-8037 8461 VIRGINIA MEADOWS DR MANASSAS, VA 20109	BECKNELL INDUSTRIAL	6307120352	1.590	08/08/2023
COVANCE SPR2023-00362  LND2024-00014	7695-17-9607 10675 UNIVERSITY BLVD MANASSAS, VA 20110	STACK INFRASTRUCTURE, LLC	5712634119	80.730	07/13/2023
PRINCEDALE APARTMENTS SPR2023-00371  LND2024-00237	8092-27-5422 13362 PRINCEDALE DR WOODBIDGE, VA 22193	PRINCEDALE APARTMENTS, L.P.	7579656200	10.370	07/20/2023
JEFFERSON PLAZA APARTMENTS SPR2023-00377	8392-82-6885 13801 MOUNT PLEASANT DR WOODBIDGE, VA 22191	STANDARD DEVELOPMENT ONWER LLC	2022309465	9.120	11/27/2023

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LND2024-00145					
Building VA10 SPR2023-00394	7596-65-1421 7729 WELLINGTON RD MANASSAS, VA 20109	IRON MOUNTAIN	4016365689	5.920	12/09/2023
LND2024-00133					
POTOMAC SHORES TOWN CENTER BLOCK 3 SPR2023-00403	8389-52-6846 1800 POTOMAC SHORES PKWY DUMFRIES, VA 22026	URBAN, LTD	7036428080	11.200	09/20/2023
LND2024-00093					
PWCPS - OCCOQUAN ELEMENTARY SCHOOL SPR2023-00412	8393-70-4327 12915 OCCOQUAN RD WOODBIDGE, VA 22192	PRINCE WILLIAM COUNTY PUBLIC SHOOOLS	5717199313	10.180	05/14/2024
LND2024-00288					
ST. KATHARINE DREXEL CATHOLIC CHURCH SPR2023-00414	7200-81-4277 15000 WATERFALL RD HAYMARKET, VA 20169	THE CATHOLIC DIOCESE OF ARLINGTON	7032090222	6.570	08/20/2023
LND2024-00081					
BUILDING VA6 - EGP SPR2023-00421	7596-64-9424 7749 WELLINGTON RD MANASSAS, VA 20109	IRON MOUNTAIN	4016365689	13.690	07/03/2023
LND2024-00009					
Battlefield Business Park Phase II Lot 15 SPR2023-00424	7697-57-3283 9990 BATTLEVIEW PKWY MANASSAS, VA 20109	U.A. MECHANICAL TRADES SCHOOL, INC		0.950	02/05/2024
LND2024-00180					
SHAKE SHACK GAINESVILLE SPR2023-00426	7397-71-9139 5000 WELLINGTON RD GAINESVILLE, VA 20155	VERDAD STNL, LLC		0.280	05/09/2024
LND2024-00297					
TEMPORARY CNG TRANSFER FUELING STATION SPR2023-00434	7991-09-6721 14811 DUMFRIES RD MANASSAS, VA 20112	PRINCE WILLIAM RNG LLC	3464359756	0.220	07/19/2023
LND2024-00025					

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Bristow Shopping Center - Parcel A-1C SPR2023-00435  LND2024-00052	7595-40-4899 10501 BRISTOW CENTER DR BRISTOW, VA 20136	BRISTOW PADS A-1C, LLC	5713821230	1.050	08/10/2023
INNOVATION MANASSAS DC2 & DC3 SPR2023-00443  LND2024-00172	7695-58-1389 9450 GODWIN DR MANASSAS, VA 20110	QTS DATA CENTERS		0.900	12/28/2023
KESSINGER HUNTER BUILDING VA3, VA4, VA5 SPR2024-00001 LND2024-00209	7596-66-0725 11560 HAYDEN RD MANASSAS, VA 20109	IRON MOUNTAIN	4016365689	68.020	11/21/2023
LATSIOS PROPERTY PHASE 1 SPR2024-00004  LND2024-00211	7497-25-7688 7265 NEW STABLE WAY GAINESVILLE, VA 20155	BUCHANAN PARTNERS LLC	3014170510	0.350	01/22/2024
PROJECT MANGO PHASE 2 SPR2024-00020  LND2024-00044	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC	5417055257	28.000	08/09/2023
Village Place Technology Park SPR2024-00040  LND2024-00117	7397-36-4811 14403 JOHN MARSHALL HWY GAINESVILLE, VA 20155	CTP-I LLC	5402196266	44.240	11/04/2023
PROJECT MANGO PH 1 SPR2024-00056  LND2024-00072	7496-47-2405 13005 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC C/O BOWMAN CONSULTING GROUP	7034432400	96.100	09/27/2023
Catharpin Recreation Park SPR2024-00058  LND2024-00287	7499-86-9877 12500 KYLE WILSON WAY CATHARPIN, VA 20143	PWC PARKS AND RECREATION	703-792-7185	1.220	12/09/2023
REDSTONE INDUSTRIAL PARK SPR2024-00062	7595-79-9352 11400 UNIVERSITY BLVD MANASSAS, VA 20109	MATAN COMPANIES		18.700	09/19/2023

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LND2024-00064					
INNOVATION POWER LOFT DATA CENTER SPR2024-00063	7595-96-0662 9651 HORNBAKER RD 201 MANASSAS, VA 20109	POWERLOFT @ INNOVATION I LLC	5719198117	0.060	09/07/2023
LND2024-00076					
Chick-fil-A Princeton Woods FSU #04916 SPR2024-00064	8289-27-5814 3330 PINE BLUFF DR DUMFRIES, VA 22026	BOHLER	5403494500	2.640	11/06/2023
LND2024-00111					
SPRIGGS ROAD CAR WASH SPR2024-00071	8091-45-5028 14645 SPRIGGS RD WOODBIDGE, VA 22193	CCP FUND III, LLC		1.190	06/18/2024
LND2024-00299					
BUILDING VA6 SPR2024-00079	7596-64-9424 7749 WELLINGTON RD MANASSAS, VA 20109	IRON MOUNTAIN DATA CENTERS LLC	5184307504	13.690	10/11/2023
LND2024-00085					
Heathcote Marketplace Water and Sewer Plan SPR2024-00092	7298-92-4359 14891 HEATHCOTE BLVD HAYMARKET, VA 20169	IMEG CORPORATION	7033345652	14.300	04/18/2024
LND2024-00259					
POTOMAC SHORES MARINA PARK SPR2024-00097	8388-79-8558 1285 CHERRY HILL RD DUMFRIES, VA 22026	HARBOR STATION COMMUNITIES LLC	5719316265	9.000	12/28/2023
LND2024-00153					
GAINESVILLE CROSSING DATA CENTER SPR2024-00106	7497-56-0118 13700 UNIVERSITY BLVD GAINESVILLE, VA 20155	BOWMAN	7035308093	18.040	03/15/2024
LND2025-00002					
9341 INDUSTRIAL COURT SPR2024-00113	7595-59-7124 9341 INDUSTRIAL CT MANASSAS, VA 20109	KIMLEY-HORN	7038703644	0.130	01/27/2024
LND2024-00206					

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JEFFERSON PLAZA APARTMENTS - REVISION 1 SPR2024-00132 LND2024-00217	8392-82-6884 13801 MOUNT PLEASANT DR WOODBIDGE, VA 22191	STANDARD COMMUNITIES/STANDARD PROPERTY COMPANY INC.	2028005800	9.010	01/17/2024
BUILDING VA6 SPR2024-00145  LND2024-00166	7596-64-9220 7745 WELLINGTON RD MANASSAS, VA 20109	JCL CONSULTING LLC	7034889877	13.510	01/18/2024
PROJECT MANGO PHASE 2 SITE PLAN REVISION #2 SPR2024-00153 LND2024-00148	7496-47-2405 13001 ROLLINS FORD RD BRISTOW, VA 20136	NOVA MANGO FARMS LLC	5417055257	96.940	12/19/2023
Heritage Hunt-INOVA - Pre-Construction Plan SPR2024-00162  LND2024-00277	7497-06-5722 13545 HEATHCOTE BLVD GAINESVILLE, VA 20155	SITTLER DEVELOPMENT ASSOCIATES LLC		8.620	04/23/2024
YOUTH FOR TOMORROW SPR2024-00164  LND2024-00218	7595-54-7695 10145 LINTON HALL RD BRISTOW, VA 20136	STACK INFRASTRUCTURE, INC	9132420683	38.560	03/19/2024
HERITAGE HUNT COMMERCIAL-LAND BAY B SPR2024-00167  LND2024-00278	7497-06-1250 13561 HEATHCOTE BLVD GAINESVILLE, VA 20155	BUCHANAN PARTNERS LLC	3014170510	6.000	05/20/2024
PWCS H.L. MOONEY ADV. WATER RECLAMATION FACILITY SPR2024-00174 LND2024-00197	8391-51-7302 1851 RIPPON BLVD WOODBIDGE, VA 22191	PRINCE WILLIAM COUNTY SERVICE AUTHORITY	7033932062	4.710	02/26/2024
K-9 GUNNER MEMORIAL DOG PARK ACCESSIBILITY DESIGN SPR2024-00180 LND2024-00246	8292-88-8374 13251 STURBRIDGE RD WOODBIDGE, VA 22192	DEPT. PARKS, RECREATION & TOURISM		0.150	04/16/2024
Dabney Road Industrial SPR2024-00188	8492-03-2562 13720 DABNEY RD WOODBIDGE, VA 22191	DABNEY ROAD INDUSTRIAL LLC	7035587300	10.150	01/22/2024



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LND2024-00161					
Village Place Technology Park SPR2024-00201	7397-36-4811 14403 JOHN MARSHALL HWY GAINESVILLE, VA 20155	IMEG CORPORATION	7033345652	44.240	04/24/2024
LND2024-00275					
BRICKYARD SUBSTATION SPR2024-00215	7695-61-0567 9904 GODWIN DR MANASSAS, VA 20110	DOMINION ENERGY		4.630	05/06/2024
LND2025-00004					
ST. KATHARINE DREXEL CATHOLIC CHURCH SPR2024-00219	7200-81-4277 15000 WATERFALL RD HAYMARKET, VA 20169	THE CATHOLIC DIOCESE OF ARLINGTON	7032090222	5.610	05/12/2024
LND2025-00005					
BATTLEFIELD BUSINESS PARK - LOT 10A SPR2024-00221	7697-36-3895 7070 INFANTRY RIDGE RD MANASSAS, VA 20109	HOLLADAY PROPERTIES	8044990870	1.890	05/23/2024
LND2024-00300					
PWCPS NEABSCO ELEMENTARY SCHOOL - ADA IMPROVEMENT SPR2024-00228	8191-83-6417 3800 CORDELL AVE WOODBIDGE, VA 22193	M&F CONCRETE INC		0.490	05/30/2024
LND2024-00281					
T- MOBILE @ INDEPENDENT HILL 7WAW507A SPR2024-00231	7891-63-1590 14800 JOPLIN RD MANASSAS, VA 20112	SBA COMMUNICATIONS	4108082497	126.000	01/24/2024
LND2024-00228					
PWCPS - SINCLAIR ELEMENTARY SCHOOL SPR2024-00323	7697-61-1627 7801 GARNER DR MANASSAS, VA 20109	PRINCE WILLIAM COUNTY PUBLIC SHOOOLS	5717199313	2.200	06/10/2024
LND2024-00292					
MANASSAS TECH CENTER SPR2024-00360	7596-62-8744 8870 MIKE GARCIA DR MANASSAS, VA 20109	WELLINGTON GLEN, LLC	6174762751	17.780	06/18/2024
LND2024-00301					

**Land Plans with 2500 SqFt or more Disturbed Area with Land Permit Issued**  
**07/01/2023 Through 06/30/2024**

<b>Plan Name / Plan Number / Permit Number</b>	<b>Parcel Number / Address</b>	<b>Developer / Owner</b>	<b>Phone</b>	<b>Disturbed Area</b>	<b>Plan Approval Date</b>
HORNER PARK & RIDE - LOT 6 EXPANSION - EGP SPR2024-00393 LND2024-00279	8392-05-3246 13455 TELEGRAPH RD WOODBIDGE, VA 22192	PWC DEPARTMENT OF TRANSPORTATION	7037926823	0.940	06/03/2024
PWC FIRE & RESCUE STATION 27 - EARLY GRADING PLAN SPR2024-00394 LND2024-00294	8090-58-8360 15825 SPRIGGS RD WOODBIDGE, VA 22193	PWC	7037926674	1.450	06/18/2024

**Total Number of Land Plans: 113**

**Total Number of Disturbed Acres: 4,656.990**

**END OF REPORT**

## **Appendix C**

### **List of County-Maintained Roadways and Parking Lots**

ST NO	ST NAME	ST TYPE	DEED ACRES	DESCRIPTION	Impervious Parking Lot? (Yes=1; No=0)	Area of Imp. Parking Lot (Acres)	Impervious Road? (Yes=1; No=0)	Imp. Road (Linear Ft)	Imp. Road (Acres)	Site BMPs (Yes=1; No=0)	Parking Lots Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Miles)	Imp. Roads Not Treated by BMPs (Miles)
4925	CATHARPIN	RD	1.216	LAWNVALE ESTATES SEC 2 R/W PRIVATE ROAD	0		1	880	0.38	0	0	0	0	0.17
13001	CHINN PARK	DR	77.003	CHINN PARK	0		1	97	0.05	1	0	0.05	0.02	0
13131	PUBLIC SAFETY	DR	12.081	PUBLIC SAFETY FACILITY - ACREAGE	0		1	585	0.15	1	0	0.15	0.11	0
5049	WATERWAY	DR	8.21	MONTCLAIR LIBRARY (UNDER CONSTRUCTION)	0		1	716	0.801	1	0	0.801	0.14	0
8636	WELLINGTON	RD	0.857	PWC JUVENILE CTR	0		1	284	0.16	1	0	0.16	0.05	0
1040	EXPRESS	DR	2.538	VRE TRAIN STATION WOODBRIDGE	0		1	483	0.65	1	0	0.65	0.09	0
7625	AARON	LN	15.264	ELLIS L BARRON PARK	1	0.29	0			1	0.29	0	0	0
12560	ADEN	RD	97.074	NOKESVILLE COMMUNITY PARK	1	1.87	1	4393	1.4	1	1.87	1.4	0.83	0
5901	ANTIOCH	RD	3.8	FIRE STATION ANTIOCH ROAD/DOMINION VALLEY	1	1.17	1	897	0.62	1	1.17	0.62	0.17	0
8051	ASHTON	AV	4.177	BULL RUN LIBRARY	1	1.94	1	231	0.15	1	1.94	0.15	0.04	0
7500	BEN LOMOND PARK	DR	240.607	BEN LOMOND PARK	1	1.92	1	1010	0.86	1	1.92	0.86	0.19	0
14730	BIRCHDALE	AV	8.656	BIRCHDALE PARK	1	0.77	0			0	0	0	0	0
14998	BIRCHDALE	AV	0.836	VFD FIRE STATION	1	0.33	1	58	0.038	0	0	0	0	0.01
15011	BIRCHDALE	AV	4.146	BIRCHDALE PARK	1	0.165	0			0	0	0	0	0
15520	BLACKBURN	RD	42.452	RIPPON LODGE	1	0.48	1	1050	0.58	1	0.48	0.58	0.2	0
12401	BRAEMAR	PY	15.172	BRAEMAR PARK	1	0.55	0			1	0.55	0	0	0
14418	BRISTOW	RD	132.734	HELWIG PARK & LIBRARY	1	6.5	1	3,800	2.18	1	6.5	2.18	0.72	0
14422	BRISTOW	RD	1.5	HELWIG PARK ENTRANCE	0		1	167	0.32	1	0	0.32	0.03	0
13065	CHINN PARK	DR	14.647	CHINN PARK COMPLEX (Library, Aquatic Center)	1	4.86	1	509	0.29	1	4.86	0.29	0.1	0
13850	CHURCH HILL	DR	5.086	COMMUNITY CENTER	1	0.49	1	547	0.25	0	0	0	0	0.1
15150	CLOVERDALE	RD	30.19	CLOVERDALE PARK	1	1.57	1	1122	0.49	0	0	0	0	0.21
10501	COPELAND	DR	2.974	SUDLEY MANOR COMMUNITY CENTER	1	0.74	0			0	0	0	0	0
12380	COTTON MILL	DR	4.77	LAKE RIDGE MARINA	0		1	1163	0.65	1	1.02	0.65	0.22	0
12371	COTTON MILL	DR	67.064	LAKE RIDGE PARK, GOLF COURSE	1	2.01	1	1179	0.66	1	2.01	0.66	0.22	0
12390	COTTON MILL	DR	4.675	LAKE RIDGE PARK	1	1.15	1	2430	1.16	1	1.15	1.16	0.46	0
7	COUNTY COMPLEX	CT	65.547	STADIUM COMPLEX	1	4.88	1	950	0.54	1	4.88	0.54	0.18	0
1	COUNTY COMPLEX	CT	40.676	McCOURT & DEVELOPMENT SERVICES BUILDINGS	1	7.03	1	5085	4.8	1	7.03	4.8	0.96	0
5180	DALE	BL	7.161	PARKS SKATE NATION	1	1.48	0			1	1.48	0	0	0
5070	DALE	BL	6.179	BOYS AND GIRLS CLUB	1	0.38	0			1	0.38	0	0	0
5100	DALE	BL	3.5	BOYS/ GIRLS CLUB/COMMUTER PARKING LOT	1	2.61	1	338	0.24	1	2.61	0.24	0.06	0
5301	DALE	BL	218.234	ANDREW LEITCH PARK	1	1.95	1	933	0.46	1	1.95	0.46	0.18	0

ST NO	ST NAME	ST TYPE	DEED ACRES	DESCRIPTION	Impervious Parking Lot? (Yes=1; No=0)	Area of Imp. Parking Lot (Acres)	Impervious Road? (Yes=1; No=0)	Imp. Road (Linear Ft)	Imp. Road (Acres)	Site BMPs (Yes=1; No=0)	Parking Lots Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Miles)	Imp. Roads Not Treated by BMPs (Miles)
4249	DALE	BL	0.478	DALE CITY LIBRARY	1	0.1	0			0	0	0	0	0
14012	DAWSON BEACH	RD	6.23	COMMUNITY CENTER	1	0.16	1	1444	0.47	0	0	0	0	0.27
15941	DONALD CURTIS	DR	17.091	FERLAZZO BLDG	1	4.9	1	600	0.5	1	4.9	0.5	0.11	0
13712	DUMFRIES	RD	9.54	COLES FIRE STATION	1	0.98	1	925	0.5	1	0.98	0	0	0
4100	EXETER	DR	5.688	BRITTANY PARK	1	0.96	1	334	0.16	1	0.96	0.16	0.06	0
15611	FARM CREEK	DR	2.427	FARM CREEK VRE COMMUTER LOT	1	1.22	0			1	1.22	0	0	0
15601	FARM CREEK	DR	4.413	FARM CREEK VRE COMMUTER LOT	1	2.65	1	762	0.88	1	2.65	0.88	0.14	0
12993	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 1	1	0.09	0			1	0.09	0	0	0
12983	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 2	1	0.1	0			1	0.05	0	0	0
8900	FREEDOM CENTER	BL	15.398	WESTERN POLICE STATION	1	4.15	1	1453	1.03	1	4.15	1.03	0.28	0
18809	FULLER HEIGHTS	RD	42.26	FULLER HEIGHTS PARK	1	0.86	1	1137	0.52	1	0.86	0.52	0.22	0
13030	HARBOR	DR	2.293	COMMUTER LOT - TACKETTS MILL	1	1.47	0			1	1.47	0	0	0
13509	HILLENDALE	DR	3.426	COMMUTER LOT - HILLENDALE RD	1	2.23	0			1	2.23	0	0	0
13499	HILLENDALE	DR	21.901	JOHN JENKINS PARK	1	0.16	1	413	0.26	1	0.16	0.26	0.08	0
12940	HUNTING	CO	2.52	BROAD RUN PARK	1	0.31	0			1	0.31	0	0	0
4603	JAMES MADISON	HY	163.633	JAMES LONG PARK	1	3.55	1	3025	2.02	1	3.55	2.02	0.57	0
15904	RICHMOND	HY	0.96	EASTERN FUELING STATION	1	0.74	0			1	0.74	0	0	0
14945	RICHMOND	HY	5.065	HILDA BARG HOMELESS CENTER	1	0.3	1	468	0.25	1	0.3	0.25	0.09	0
14450	JOHN MARSHALL	HY	3.847	FIRE STATION	1	0.86	1	435	0.26	1	0.86	0.26	0.08	0
9250	LEE	AV	2.307	OLD COURTHOUSE/PARKING	1	0.67	0			1	0.67	0	0	0
9254	LEE	AV	0.201	OLD COURTHOUSE/PARKING	1	0.07	0			1	0.07	0	0	0
9252	LEE	AV	0.186	OLD COURTHOUSE/PARKING	1	0.05	0			1	0.05	0	0	0
9256	LEE	AV	0.154	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0	0
9258	LEE	AV	0.163	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0	0
9300	LEE	AV	8.502	OLD COURTHOUSE/PARKING	1	2.2	0			1	2.2	0	0	0
9301	LEE	AV	4.68	OLD COURTHOUSE/PARKING	1	2.03	0			1	2.03	0	0	0
14870	LIGHTNER	RD	4.248	GAINESVILLE LIBRARY	1	1.1	1	160	0.15	1	1.1	0	0	0
4701	LOCUST SHADE	DR	642.151	LOCUST SHADE PARK AND FOREST GREEN GOLF	1	3.9	1	7170	3.95	1	3.9	3.95	1.36	0
8460	MAPLEWOOD	DR	27.478	JOSEPH READING PARK	1	0.4	1	1162	0.62	1	0.4	0.62	0.22	0
8601	MATHIS	AV	2.748	CENTRAL LIBRARY MANASSAS	1	1.35	0			0	0	0	0	0

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14716	MINNIEVILLE	RD	26.333	HOWISON HOMESTEAD PARK	1	1.3	1	899	0.53	1	1.3	0.53	0.17	0
14400	MINNIEVILLE	RD	0.367	DALE CITY RECREATION CENTER PARKING LOT	1	0.23	0			1	0.23	0	0	0
14300	MINNIEVILLE	RD	30.862	DALE CITY RECREATION CENTER	1	1.4	1	164	0.31	1	1.4	0.31	0.03	0
9320	MOSBY	ST	4.759	COURTHOUSE PARKING	1	1.85	0			1	1.85	0	0	0
9350	MOSBY	ST	9.452	COURTHOUSE PARKING	1	0.05	0			1	0.05	0	0	0
2081	OLD BRIDGE	RD	0.7	OLD BRIDGE COMMUTER LOT	1	0.39	0			1	0.39	0	0	0
2095	OLD BRIDGE	RD	1.138	OLD BRIDGE COMMUTER LOT	1	1.12	0			1	1.12	0	0	0
2201	OPITZ	BL	3.778	POTOMAC REGIONAL LIBRARY	1	0.93	1	53	0.038	0	0	0	0	0.01
9212	PEABODY	ST	3.74	COURTHOUSE PARKING	1	1.51	0			1	1.51	0	0	0
9307	PEABODY	ST	0.228	COURTHOUSE PARKING	1	0.18	0			0	0	0	0	0
9305	PEABODY	ST	0.151	COURTHOUSE PARKING	1	0.15	0			0	0	0	0	0
9303	PEABODY	ST	0.276	COURTHOUSE PARKING	1	0.12	0			0	0	0	0	0
10699	PIPER	LN	40.33	AIRPORT VRE STATION & COMMUTER LOT	1	4.44	1	1902	1.3	1	4.44	1.3	0.36	0
13800	POP MOUBRY	PL	20.88	LANCASTER PARK	1	0.17	1	258	0.13	1	0.17	0.13	0.05	0
14700	POTOMAC MILLS	RD	3.58	PRTC POTOMAC MILLS	1	1.78	1	419	0.34	1	1.78	0.34	0.08	0
14730	POTOMAC MILLS	RD	0.787	PRTC - HOMELESS SHELTER	1	0.35	0			1	0.35	0	0	0
14716	POTOMAC MILLS	RD	5.507	PRTC POTOMAC MILLS	1	1.9	0			1	1.9	0	0	0
13161	PUBLIC SAFETY	DR	8.276	PUBLIC SAFETY TRAINING FACILITY - PCL B	1	0.4	0			1	0.4	0	0	0
13101	PUBLIC SAFETY	DR	25.052	PUBLIC SAFETY TRAINING FACILITY - PCL A	1	2.29	1	2581	1.8	1	2.29	1.8	0.49	0
12731	RIDGEFIELD VILLAGE	DR	4.4	EARL CUNARD PARK	1	0.18	0			1	0.18	0	0	0
17301	RIVER RIDGE	BL	6.262	LACEY COMPTON PARK - WAYSIDE VILLAGE	1	0.35	1	310	0.15	1	0.35	0.15	0	0
16530	RIVER RIDGE	BL	5.656	RIVER OAKS FIRE STATION	1	1.03	1	854	0.57	1	1.03	0.57	0.16	0
16198	SILVER LAKE	RD	43.753	SILVER LAKE - EQUESTRIAN CENTER	1	0.8	0			1	0.8	0	0	0
15960	SINDLINGER	WY	4.4	FERLAZZO CENTER	1	1.42	0			1	1.42	0	0	0
13455	TELEGRAPH	RD	24.609	HORNER RD COMMUTER PARKING LOT	1	10.9	1	1531	2.3	1	10.9	2.3	0.29	0
12051	TYGART LAKE	DR	42.074	BROAD RUN LINEAR PARK - PUMP STATION	1	0.38	0			1	0.38	0	0	0
11930	VALLEY VIEW	DR	125.626	VALLEY VIEW PARK	1	5.4	1	3644	2.8	1	5.4	2.8	0.69	0
14300	VETERANS	DR	78.114	VETERANS MEMORIAL PARK	1	3.21	1	4221	2.3	1	3.21	2.3	0.8	0
14631	VINT HILL	RD	165	PRINCE WILLIAM GOLF COURSE	1	0.8	1	1736	0.804	1	0.8	0.804	0.33	0
4450	WATERWAY	DR	13.802	ANN MONCURE WALL PARK	1	1	1	1373	0.66	1	1	0.66	0.26	0

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8642	WELLINGTON	RD	1.263	PWC JUVENILE CENTER	1	0.17	1	357	0.204	1	0.17	0.204	0.07	0
2430	WEST LONGVIEW	DR	4.156	HYLBROOK PARK	1	0.59	0			0	0	0	0	0
14811	DUMFRIES	RD	1061.984	FLEET BUILDING PARKING LOT ONLY	1	2.09	0			0	0	0	0	0
				TOTALS	87	132.5	53	68,697	43.685	78	122.9	41.2	12	0.8

## **Appendix D**

### **Illicit Discharge Summary**



Reported/Observed Discharges - FY2024														
Complainant Information				Discharge Information					Case Inspection and Enforcement					
S.No	Citizen/County Staff	Date	Name	Contact	Suspected Discharger	Discharge Description	Discharge Location	Type	Date of initial inspection	Illicit Discharge?/ NOV Issued	Date of last Inspection	Comments/Notes	Status	Date of Closure
1	County Staff	7/11/2023	Kenneth Judd	703-792-5268	Panda Express Restaurant	Mishandling of waste and left oil stains on parking lot	9685 Liberia Avenue	Spill	7/12/2023	Yes	7/12/2023	Prince William County Zoning department has take a lead to resolve the case.	Closed	7/12/2023
2	County Staff	7/11/2023	Kenneth Judd	703-792-5268	Red Robin Restaurant	Flushing waste to the stormdrain	9665 Liberia Avenue	Spill	7/11/2023	Yes, Nov# 1-2024	7/25/2023	Upon arrival, mopped flued, and grease and waste food found to flush into storm drain. Follow up inspection made [7/25], deficiencies found to be mitigated.	Closed	7/25/2023
3	Citizen	7/26/2023	Mr. Steve	703-994-3857	Tyme N' Tyde Marina	Sewage and Gasoline	14603 Feather stone Rd	Discharge not found	7/26/2023	NA	8/29/2023	Upon arrival, County staff did not get the discharge as reported, follow up will be continued. Follow up inspection made [8/29]	Closed	8/29/2023
4	Citizen	8/10/2023	Pavel Kazenin	703-674-8190	Mr. Lionel Ramosh of 7509 Todd Place	Oil and grease discharge on street	7509 Todd Place	Leaking Vehicle parked on Street- Discharge oil	8/10/2023	Yes, NA	9/6/2023	County staff made inspection on heavily leaks motor vehicle parked on public street, observed oil patches and stains. Asked to clean up the oil patches and stains, the vehicle owner resolved the case instantly applying grease and oil absorbent kitty litter and transporting vehicle to the shop. Again follow up inspection made[09/06], street found clean.	Closed	9/6/2023
5	Citizen	8/14/2023	Robin Forth	robin_ranchguy@gmail.com	CleanSteam.com	Clean Water	11250 Chatterly Loop	Wash water discharge into storm drain	8/15/2023	Yes, NA	9/6/2023	County staff received a citizen complaint with pictures regarding truck was emptying its contents down into storm drain. County Staff did not allow access to the property to investigate the problem from the Manager. A violation letter sent to the Owner/Management to resolve the case informing that the County has the right of entry to the facility. Follow up inspection made [9/6/2024] and found resolved.	Closed	9/6/2023
6	Citizen	8/17/2023	Christopher Connolly	727-504-7119	TBD	Water Pools in Back Yard	17794 White Campion Way	Drainage Problem	8/17/2023	NA	8/17/2023	The property is in still bond, the contractor and Lot Grading Inspector will work to resolve the problem. The County Staff responsible for Lot Grading inspection already met the complainant and developer to resolve the problem.	Closed	8/17/2023
7	Citizen	8/29/2023	Forwarded by NSD	NA	The home owner of 5271 Mantle court	Unusual large volume of grey water discharge into neighbouring property.	5273 Mantle Ct	Unusual Discharge	8/29/2023	Yes, NA	8/30/2023	Prince William County received a complaint regarding the discharge from the neighbor's property. The water is unusual and now pooling into the neighbor's yard at 5273. Inspection visit made on 8/29 but it has forwarded to NSD for resolution as it is the conflict issue with two neighbours.	Closed	8/30/2023
8	County Staff	9/11/2023	Forwarded by NSD	NA	RV user who, Parked and Made residence for a long time	Suspected sewage contamination	Cul. De. Sac of Coppermine Dr	Not detected as suspected	9/12/2023	NA	9/28/2023	Upon arrival, met two people who are using RV as a residence for long time. Inspection of storm water system of surrounding areas including three outfalls were made and I did not notice discharge and disposal of sanitary sewage at the vicinity. Follow up inspection made [9/28]. Case has forwarded to NSD for review living in RV for long time.	Closed	9/28/2023
9	Citizen	9/20/2023	Nikolas Peoples	nikolas.peoples@hotmail.com	TBD	Car Wash with Chemicals on Parking lot, which ultimately flow into storm water system	14440 filarete street	The case did not find as reported	9/20/2023	NA	10/25/2023	Inspection was made. Upon arrival, a black oil receiving pan was observed with some small oil stain patches on the parking lot. The storm water system tracked, and trickle flow observed at outfall. The discharge was normal and its source confirmed to be ground water seepage. Follow up inspection made [10/25]. Case closed.	Closed	10/25/2023
10	Citizen	9/21/2023	Dubberly	(703) 794-0082	13490 Carapace Ct, Driveway Paver	Asphalt debries left on road	Road in front of Carapace Ct	Very minor asphalt patch observed	9/21/2023	NA	9/21/2023	Upon arrival, asphalt pavement was observed on two driveway. Minimal stain was observed on road from equipment. Some trash was left over the bank of road. County staff called to the paving company, CV Paving and informed them to pick up trash left over after paving.	Closed	9/21/2023
11	County Staff	10/6/2023	Drew and Prem	(703) 792-8155	Property owner/ Management Company, 7301 Stream Walk Ln	Uncovered salt pile	7301 Stream Walk Ln	Run off heavily contaminated with salt	10/6/2023	Yes	10/13/2023	Upon arrival, most of the salt pile was found to be uncovered although it was covered and confined on last January. The tarp used to cover the pile was damaged and blown away. The white stain, observed on parkig lot and flow path towards the stormwater system. Follow up inspection made [10/13]. Deficiencies resolved	Closed	10/13/2023
12	Citizen	10/6/2023	Shayne Clinton of VDACS	(804) 221-3621	Bisusiness owner	Ice melt discharge/ Discharge waste water from food truck	7203 Sudley Rd	Food truck Discharge plus ice melt used to kill mice around the convenient store	10/6/2023	Yes	11/9/2023	Upon arrival, oil, grease and waste water etc were found to be disposed on pavement which ultimately flowing into storm water system. A warning email has been sent to the owner to stop further discharge and clean up the debris. Follow up inspection made [11/9]. Case closed.	Closed	11/9/2023
13	Citizen	10/11/2023	Ronald Osorio	(540) 773-9515	Pupuseria Denny Restaurant	Grease, oil & wash water	10528 Lomand Dr, Manassas	Unusual Discharge Very common and natural leaves discharge	10/11/2023	Yes, NOV#2-2024	10/26/2023	Upon arrival, grease, oil and wash water discharge were found to be generated from the Pupuseria Danny restaurant and discharge into stormwater drop inlet. The County staff has issued NOV#2-2024 to the restaurant for deficiency mitigation. Follow up inspection made [10/26], the deficiencies were mitigated.	Closed	10/26/2023
14	Citizen	10/11/2023	Lynn Hinman	(703) 415-6565	Reported to the owner of 14912 Slippery Elm Ct.	Yard waste with raking leaves	Gutter inlet of 14912 Slippery Elm Ct.		10/11/2023	NA	10/11/2023	The case was not discovered as reported. Nobody was found to discharge yard waste and raking leaves into storm sewer system.	Closed	10/11/2023
15	Citizen	10/26/2023	Ashley Peoples	(703) 486-4782	Rehabitation Project of Dunkin Doughnuts	Concrete dust flumes spread out	4101 Dale Blvd	Dust Pollution	NA	Yes		The case has forwarded to the staff inspecting for active construction sites.	Closed	10/26/2023

16	Citizen	11/13/2023	Mark Adams	(703) 254-4727	TBD	Smell with oil scene	8001 Gateway Promenade Pl	Suspect sanitary discharge including oil discharge	11/14/2023	Yes, NA	11/14/2023	Upon arrival, oil scene with bad smell noticed at the upstream and downstream of walking trail made around SWMP # 670. Discharge tracked and source was identified from Regal Stadium of Gainesville. The interaction was made with the Manager Jennifer Akins [(571) 598-4149] and also connect with Ms. Sandra Vasquez [(571) 598-4149] the vendor employed to resolve the overflow of drain cleanout. The incident was unintentional and most of the pollutants retains on buffers. The case closed.	Closed	11/14/2023
17	Citizen	11/24/2023	Bob Webley	703-501-7903	TBD	Oil Leakage from vehicle	Crestwood Dr. X Vernon St.	Oil stains on Road	11/27/2023	Yes, NA	11/27/2023	Upon arrival, oil stains were observed on various spots of street parking. The parking enforcement staff already issued violation notice to the vehicle owner and reported vehicle was removed from parking. Case closed for now.	Closed	11/27/2023
18	Citizen	11/27/2023	Ollie Lee Cloud	(571) 212-5743	Home Owner of 14488 Filarete St	Antifreeze and car fluid discharge on parking lot	Parking spot # 66, associate with 14488 Filarete St	Vehicle fluid discharge	11/27/2023	NA	11/27/2023	Upon arrival, the County staff did not see any type of illicit discharge except poor yard maintenance. Most of the complaints were associated with neighbourhood services and they are working from their side.	Closed	11/27/2023
19	Citizen	11/27/2023	Brenda Amaya	(703) 477-2195	Home Owner of 9401 Old Settle Ct	Raking leaves and discharging into storm drain	9401 Old Settle Ct	Leaves discharge into stormdrain	11/27/2023	Yes, NA	12/28/2023	Upon arrival, the storm water curb and gutter inlet was found almost full. Interaction made with homeowner. The homeowner agreed to remove leaves from the inlet. The County staff educated the homeowner and hand over the education material as well. The county staff did follow up inspection.	Closed	12/28/2023
20	County Staff	12/9/2023	PWC DFR	(703) 792-8392	Prince William Scrap Metal	Fire caught up with metal scrap pile could result illicit discharge	7905 Notes Drive	Fire controlled without releasing illicit discharge	12/11/2023	NA	12/11/2023	Upon arrival, the scrap metal pile was found to be caught up with fire on 12/9/2023 and reported instantly extinguished. The oil and hydrocarbon absorbent booms were found to be placed across the firefighting discharge. The filtered discharge was holding on stormwater management (SWM) facility. The outfall of SWM facility was dry.	Closed	12/11/2023
21	County Staff	12/8/2023	Prem Poudel	(703) 792-8155	Property owners	Dumping Trash and Tyres	2601 and 2621 Prince William Pkwy	Dumping Trash and Tyres on buffer areas	12/8/2023	Yes, NA	1/18/2024	During routine inspection, the County staff observed the trash and tires dumping on buffer areas. The letter is issued to the property owners to remove all those trash and tyres. The deficiencies were seemed to be resolved on follow up inspection.	Closed	1/18/2024
22	County Staff	1/23/2023	Prem poudel	(703) 792-8155	Property Mgmt- Willard Retail	Uncovered Salt pile	11096 Bulloch Drive	Salt pile kept open	1/22/2023	Yes, NA	2/9/2024	Upon arrival, salt pile was seemed uncovered. Made contact and left the voice message to the Property Manager Ms. Sara Steckman of Willard Retail. She returning the call on 1/23 and she is willing to carry out necessary steps to cover and secure the pile. Follow up made on 02/09. The salt pile was perfectly covered and secured the covers.	Closed	2/9/2024
23	Citizen	1/25/2024	Ryan Storrie	(410) 560-0300	United Site Services	wash water discharge/Open Salt Pile/Oil and Grease	5524 Wellington Rd	Wash water, Oil and Grease, uncovered Salt pile,	1/26/2024	Yes, NOV#3-2024	2/12/2024	Upon arrival, County staff observed Sewage vacuum truck wash water discharge into open channel, open salt pile and grease&oil discharge into drainage stone swale. Grease and oil stain was heavily deposited on channel and tarp used to cover the salt pile. The channel was cleaned. The holding grease and oil on stagnant water reported to be vacume.	Closed	2/12/2024
24	County Staff	1/7/2024	Prem Poudel	(703) 792-8155	FMI Manaport LLC	Uncovered Salt pile	8345 Sudley Rd	Salt pile kept open	2/7/2024	Yes, NA	2/12/2024	Upon arrival, salt pile was seemed uncovered on parking lot and dumpster juice leaking from dumpster behind the Great American Buffet. Made contact with the Property Manager Mr. Louis Camper of Finamar Management Inc. He promised to carry out deficiencies mitigation on weekend, i.e. 10 and 11 February. Mr. Camper has send the picture of mitigation. Follow up inspection made on 12th February, Resolved.	Closed	2/12/2024
25	Citizen	2/28/2024	Jessica Guido	407-341-3955	TBD	Petroleum Smell	2551 Eastbourne, Potomac Club	Light smell detected	2/28/2024	Yes, NA	2/28/2024	Upon arrival, the County staff noticed a very faint smell of petroleum spill which is very common in residential areas. Neither the particular spill location detected and nor the source of spill.	Closed	2/28/2024
26	Citizen	3/5/2024	Clay Morris received a call	NA	TBD	Sudy Water	9904 Botsford Rd	Discharge	3/7/2024	NA	3/7/2024	Upon arrival, the County staff did not notice sudsy discharge on creek. Collected 3 bags of litters from surrounding of creek and dumped into County's dumpster.	Closed	3/7/2024
27	County Staff	3/4/2024	Hazmat Officer Mr. Mike	(703) 283-0924	Hazmat Team Knows	Road Accident, Oil Spill	Sanders LnX Bull Run River	Oil Spill	3/7/2024	Yes, NA	3/7/2024	Upon arrival, Observed some broken parts of the vehicle with falling track. There was no significant or noticeable spill remains.	Closed	3/7/2024
28	Citizen	3/21/2024	Ms. Michele Ferguson	(703) 717-8897	TBD	Bad Smell spread out from curb and gutter inlet	13806 Gilbert Rd	Chemical Spill	3/25/2024	Yes, NA	4/18/2024	The reported inlet is ID: 8770. Two 4" pipes have connected with inlet. One of them has trickle flow and another was dry. The chemical smell was noticed at trickle inflow. Flow disappeared in storm sewer system and finally the outfall was found to be moist only. It could be single incident. Follow up inspection Made. Deficiencies didn't notice again.	Closed	4/18/2024

29	Citizen	4/3/2024	Mr Wahaj Mohammad	(202) 908-8910	TBD	Sediment discharge into SWMP 669.	Intersection of Expedition Dr. And Miata Lane.	Cloudy Discharge	4/4/2024	NA	4/4/2024	Upon arrival, the cloudy discharge was observed at SWMP 669. It is very common while raining. E & S inspector also deployed to the areas to investigate land disturbance in associate catchment but he couldn't find the disturbance as reported.	Closed	4/4/2024
30	Citizen	5/6/2024	Amanda Brown (KPWB)	571-285-3772	TBD	Clothes for both men and women, alcohol bottles, cigarettes, used condoms, litters etc	11201 Balls Ford Rd	Poor Housekeeping Practice	5/6/2024	Yes, NA	6/10/2024	Upon arrival, the County staff noticed the items reported by the complainant and made interaction with the Manager. The property was walk through with Mr. Stephan Mullan, the Warehouse Manager. Deficiencies were notified to the management for mitigating the deficiencies. Follow up inspection made, the case didn't show up anymore.	Closed	6/10/2024
31	County Staff	5/6/2024	Hancock, Philip W	<a href="mailto:PHancock@pwcgov.org">PHancock@pwcgov.org</a>	Ikbol Abulkasimova	Containers have been stored at the Stormwater Easement of Pond 276. Potential for holding chemicals though all of them has empty.	10991 Winding Brook Ct	Stormwater Easement Encroachment	5/6/2024	NA	5/6/2024	The County staff reported that he came across large liquid storage containers inside county SWMP 276. Containers appeared to be empty. The IDE Inspector again did follow up and met the homeowner Mr. Ikbol, he said those containers are placed for holding sump well water for lawn irrigation. This issue has already seemed to deal by Mr. David Maxwell last year asking to complete documentation. It is not an illicit discharge issue. The case will be forwarded to David Maxwell.	Closed	5/6/2024
32	Citizen	5/29/2024	Mr. Matt Goldman	(703) 994-9777	TBD	Dumping automotive waste oil on ground	Cul_De_Sac of Glendale Rd, Woodbridge Rd Near 4010 Ramos Ct, Woodbridge	Dumping waste oil after changing oil of Vehicle having plate VA TKE-8634	5/29/2024	Yes, NA	5/29/2024	The video and picture was received from complainant regarding automotive oil dump after changing the oil. The case was forwarded to DFR, Hazmat Team for further action.	Closed	5/29/2024
33	Citizen	5/30/2024	Mr. Val Hensley	703-424-5023	TBD	Suspected sewage discharge	2535 Youngs Drive	Suspected discharge did not received,	5/30/2024	NA	6/26/2024	Complainant will send the picture if the situation still exists.	Closed	6/26/2024
34	County Staff	5/31/2024	Philip Hancock	<a href="mailto:PHancock@pwcgov.org">mailto:PHancock@pwcgov.org</a>	The Property Owner	Unprotected Salt pile	8301 Sudley Rd Manassas, VA 20109	Unprotected Salt pile, leaching out into storm water system.	5/31/2024	Yes, NOV#6-2024		The County staff observed an unprotected salt pile at the corner of the property and leaching out into stormwater system. Working out to find out the property owner. Violation letter has sent.	Running	
35	County Staff	6/7/2024	Patrick Hannan	(703) 792-6848	The Property Owner	Dumping Oil	15115 Cloverdale Rd	Dumping waste cooking oil into storm drain	6/7/2024	Yes, NOV#7-2024	6/21/2024	Follow up inspection made on 6/7/2024. I observed a stormwater inlet that was being used as a drain off oil, grease and waste food. Interaction made with property owner and educated them about unlawful discharge into storm water system. On 2nd follow up, homeowner resolved all deficiencies by cleaning oil and grease stains, disconnected kitchen wash out to storm drain.	Closed	6/21/2024
36	Citizen	6/8/2024	Jamie Alberti	(571) 492-1235	The Property Owner	TBD	14788 Courtlandt Heights Rd	Discharge Polluted Water	6/10/2024	Yes, NA	6/24/2024	The Complainant reported a large hose coming from his backyard pool and discharge water to the front. Upon arrival county staff noticed a denuded spots on front yard, made interaction with owner, and confirmed discharge belongs to the chemicals applying for pool maintenance. Educated the homeowner, follow up made [6/24]. Denuded sport repaired with turf.	Closed	6/24/2024
37	County Staff	6/7/2024	Kelly L Easterly	(703) 792-4550	The Property Owner of 5595 Webster Way	Dumping something into storm drain	Road Curb and Gutter inlet crossed the road of 5595	Discharge Brine Salty Water	6/10/2010	Yes, NA	6/10/2024	After investigation, It came to know that the resident of 5595 Webster Way spill the salty brine water into storm drain. The Brine water has been used to keep cabbage leaves into drum as preservative. I educate the people who involved in spill about lawful and unlawful discharge as per county code. The violator convinced and, are willing to follow the county code in future.	Closed	6/10/2024

## **Appendix E**

# **Oil and Household Hazardous Waste Disposal Summary**

## FY24 Oil and Hazardous Waste Disposal Summary

Prince William County owns and operates the Prince William County Landfill, a permitted municipal sanitary landfill located at 14811 Dumfries Road in Manassas, Virginia. The landfill serves all residents, businesses, and institutions within Prince William County. A household hazardous waste (HHW) collection facility is located on the landfill property, which is owned by the County and operated by a vendor, currently Clean Harbors of Laurel, Maryland. The HHW facility is open two days a week, year-round (Wednesdays and Saturdays), from 10:00 a.m. to 5:00 p.m. Clean Harbors is responsible for proper packaging and safe recycling or disposal of all HHW collected at the facility. The landfill also has collection locations for other wastes, including vegetative wastes, used motor oil, and other vehicle fluids. Information about the County landfill and acceptable wastes is published on the County's website at <https://www.pwcva.gov/department/solid-waste-management>. Specific information about the HHW program is located at <https://www.pwcva.gov/department/solid-waste-management/household-hazardous-waste>.

### ○ Residents

- Offer twice a week collection of household hazardous waste and electronics year-round at the County Landfill and once a month at the Balls Ford Road Compost Facility.
- Maintain a safe building for residents to drop off household hazardous waste and electronics with proper storage as needed.
- Offer daily collection of used motor oil, antifreeze, and car batteries.
- Provide useful signs to direct residents on how to properly dispose of these materials when they arrive at the landfill and compost facility.
- Provide clear and complete information about management, storage and delivery of household hazardous waste to the County landfill and compost facility through brochures and instruction sheets, web pages, public service announcements and newsletters

### ○ County Government

- Provide extensive training on the proper handling and disposal of chemicals and potentially hazardous materials
- Provide extensive training on how to respond to and report a chemical spill.
- Established an effective program for handling motor oil, antifreeze and other vehicle fluids at the Fleet Maintenance Shop
- Conducted an inventory of chemicals in use by County agencies and arranged a collection of no longer used products with a licensed handler.
- Piloted a program to collect chemicals from agencies and work with County contractor to accept them at designated intervals throughout the year.
- Produced a preferred chemical list to reduce the use of potentially hazardous and harsh products.

## **Appendix F**

### **Spill Response Summary**

Incident #	Date	Location	Source	Incident Narrative	Status
FD23100900054438	5/16/2023	Sudley Manor Dr/Sudley Rd Manassas, Va 20109	Gasoline	Haz mat units were dispatched for a report of a vehicle leaking diesel fuel beginning in the left turn lane of Sudley Road and continuing down Sudley Manor and into the parking lot of Sudley Manor Square at 7807 Sudley Road. The driver of the vehicle stated that approximately 30 gallons of fuel leaked from the vehicle. This fuel was spread along the roadway in a thin layer and concentrated in the parking lot at 7807 where significant pooling had occurred. Initial units on scene were able to determine that no storm drains or waterways had been impacted and were able to contain most of the spill by using available materials and some absorbent, as well as by clamping the fuel line on the truck. Responsible party contacted ECC who agreed to do the clean up. R506, HM506 and HS 506 remained on scene until ECC arrived. BC Ericson returned and determined it was no longer necessary to clean up roadway, clean up was confined to parking lot. Scene was tot ECC. Lt LeFever with FMO cited the responsible party and County PD declared the vehicle unsafe to drive due to various problems. Responsible party was informed that the vehicle must be towed and that the fuel line must be secured before this happens. A mechanic arrived on scene and fixed the fuel line before R506 cleared. Approximately 40 bags of absorbent, 15 oil pads, 1 boom, 1 pop up pool, and a salvage bucket were used on the call. We were able to obtain 8 bags of absorbent from ECC but all other items will need to be replaced.	Closed
FD23070300034819	7/3/2023	7828 Elsinore Dr	Mixed Chemicals	Company 506 units responded to the scene for a report of a resident that mixed Bleach with Muriatic Acid and Calcium Hypochlorite. Once on scene, it was determined that the chemicals were mixed in a small bucket that started to react causing the resident to inhale the chemicals. The patient self-decontaminated himself via his home shower and was evaluated by M507. Hazmat 506 crew investigated the area and determined all chemicals were in their original containers and that only a small amount of the mixed bleach solution was spilled on the ground which was rinsed into the gravel surrounding the pool patio. The remaining chemicals in the bucket were dumped into the pool. The structure was ventilated for a slight smell and residents were advised to seek medical attention or call 911 if they started feeling ill. Scene turned over to FMO.	Closed
FD23073000040568	7/30/2023	Liberia Ave/Bayberry Ave	Diesel Fuel	Phone consult completed with E501 for approximately 34 gallons of diesel fuel on the roadway secondary to a ruptured tank. E501 placed buckets under the tank and performed defensive measures to keep the product out of waterways. LEPC issued. No need for HazMat response. VAEOC notified.	Closed
FD23073100040592	7/31/2023	I66 47.4W	Diesel Fuel	Phone consult completed with E522 for approximately 50 gallons of diesel fuel on the roadway secondary to a ruptured saddle tank. E522 placed a pop-up pool under the tank and performed defensive measures to keep the product out of waterways. LEPC issued. No need for HazMat response. VAEOC notified.	Closed
230034517	8/27/2023	14300 Veterans Dr	Unknown Substance	On the listed date, time, and location company 6 units responded for the report of a possible oil spill in a waterway. Upon arrival on scene, E512 officer reported that there was a dark brown liquid and a "sheen" on the water under a pedestrian bridge at the location. The water appeared stagnant and was not moving at all. There was a dark colored substance on the top of water. HM506 personnel obtained multiple samples of the liquid. The oil paper test on both samples was negative. FTIR and Ramen testing of both samples came back either negative or as water. A oil only absorbant pad was placed in the water and it did not absorb the substance. A Prince William County park ranger was on scene and notified of the negative findings. FMO Schultz responded to the location and was also notified of the negative findings. It was determined that the substance was not oil or any other hazardous material. All company 6 units cleared with good intent.	Closed
N/A	9/5/2023	11780 Reid Ln	Barrels	DHM Technician, Lt Lind, fielded a phone call from E505's OIC (Lt Alloway.) He advised that he had received an email from the admin secretary of Nokesville VFD regarding a citizen inquiry of a few abandoned metal drums on the side of Reid Ln. They went out to investigate the situation and found the barrels sitting upright and not leaking. They appeared to be partially filled with some sort of petroleum-based product. He did say it looked like the barrels had leaked a little bit at one time but were not currently leaking product. Since there was no hazard, the on-duty FM was notified of the situation to follow up. Lt. Reubens, who was the on-duty FM, investigated the area and documented the case on his end. He had also contacted DEQ and VDOT to assess as well.	Closed
FD23091100049035	9/11/2023	Sudley Rd / Williamson BLVD Manassas VA	Gasoline	Company 506 received a phone consult for an auto fire involving a ruptured fuel tank. BC Ferguson advised that units extinguished the fire after using approx. 50 gallons of ARAFF foam and 20,000 gallons of water. It was estimated that approx. 25-30 gallons of gasoline was involved in the fire and all runoff went into a nearby storm drain. Due to the amount of water that was used during fire attack, it was determined that hazmat response would not be necessary, and that the incident would be reported to VAEOC for documentation purposes.	Closed

FD230038765	9/25/2023	11171 Balls Ford Rd	Gasoline	Today at approximately 19:30 engine 522 was dispatched for a fuel spill at a gas station. E522 estimates that 20-30 gallons of gasoline was spilled. E522 was unsure if any fuel was spilled into the storm drain as the area directly next to the drain was already wet from previous rain. E522 stated the fuel spill had stopped and that a barrier was created to prevent further drainage into/towards the storm drain. Hazmat 506 advised that because the leak had stopped and that E522 had taken measures to prevent further gasoline from entering the storm drain that a hazmat consult was sufficient. Hazmat 506 advised E522 to continue to apply absorbant to the spilled fuel and to have the gas station contact their clean-up company.	Closed
FD230041756	10/16/2023	DAWSON BEACH Rd /RT1 Woodbridge, Va 22191	Diesel Fuel	Haz Mat was requested by Captain Janda to respond to an overturned tractor trailer which was hauling scrap metal. The truck was reportedly carrying 120 gallons of diesel fuel. When Haz Mat units arrived on scene they found a small leak of around 3-5 gallons of various automotive fluids which had been contained by absorbent and had not entered any waterways. The truck had several small leaks, one of hydraulic fluid, one of engine oil and one of diesel. The hydraulic leak was mitigated with a pop up pool, the oil leak was patched and the diesel leak was inaccessible but very minor. There was no need for an LEP to be issued as the fluid spilled was a non reportable quantity and Redman's towing stated they could handle al necessary clean up. The scene was turned over to county police and Redman's towing. EOC was not notified due to the non reportable quantity and lack of impact on waterways.	Closed
FD2312100066378	12/10/2023	7905 Notes Dr	Scrap Metal Pile	At 1722 company 22 personnel responded to an outside fire reported at Prince Willaim metal recycling, Inc located at 7905 Notes Drive, Manassas, VA. Company 22 units arrived on scene to a 25-foot-high pile of metal scrap and other mixed debris on fire with flames reported to be 50 feet tall in downpouring rainy conditions. At 1734 Additional suppression resources were requested to assist with extinguishment efforts. At 1836 BC504 initiated a hazmat phone consultation with station 6. BC504 advised that fire extinguishment efforts on the scrap metal pile were not effective and was generating large amounts of contaminated runoff going into the storm drain. HazMat personnel were added to the incident and responded with R506, HM506, and HS506. E506 was added to the incident while enroute. Company 6 units arrived on scene to a large mixed scrap metal pile with fire and smoke in downpouring rainy conditions. HazMat Personnel met with BC504 and planned to conduct area monitoring for personnel working on the fire ground and investigate the scale of contaminated runoff generated. Atmospheric monitoring was conducted utilizing AreaRae's and MultiRae's. Normal atmospheric readings were preset throughout. VOC readings indicated 100-150 ppb peak in the established warm zone. AreaRae monitoring was in place throughout the initial phases of the hazmat investigation. QRae III monitoring was ongoing throughout the incident. Water generated by fire suppression activities, combined with the downpouring rainy conditions generated contaminated water runoff that overwhelmed the predeployed onsite absorbent booms, the water volume was beyond the ability to be contained. R506 tested the water with oil finding paper and pH paper and did not indicate the presence of oil or corrosivity. Water generated from the incident was directed to a large retention pond at the end of notes drive. E506 investigated the overfilled retention pond and was not able to detect contamination in the runoff. Area monitoring was ongoing as suppression units exposed the seat of the fire with a front loader and the fire was able to be controlled. BC504 released HazMat personnel and advised possible follow up the next day if needed. PWC Fire Marshals were not able to make contact with the responsible party at the time of the incident and the investigation is ongoing.	Closed
FD23121100066463	12/11/2023	Ashton Ave. and Sudley Manor Drive	Driveway Sealant	E511 upgraded an auto accident to a Haz Mat incident after discovering that several gallons of driveway sealant had leaked from containers in the back of a truck involved in an auto accident. R506 and HM 506 responded to the call, with E506 and HS 506 being placed in service due to the small volume of the spill. R506 aas and discovered about 3 to 5 gallons of driveway sealant in the roadway. After discussing with BC504 it was agreed to use absorbent to capture the sealant then place it n the back of the truck for the responsible party to dispose of. The responsible party, Branscome Paving Company, stated they could properly dispose of the contaminated absorbent and would also bring a vac truck to finish cleaning up any residual material. No waterways were impacted and the spill was contained to the area around the truck. No LEP was issued due to the small quantity of material spilled, the lack of waterway involvement and the willingness of the responsible party to accommodate the clean up. DFR units cleared the scene after removing the absorbent from the roadway and turned it over to police and the responsible party.	Closed



FD230051943	12/24/2023	13313 Occoquan Rd., Woodbridge, VA 22191	Gasoline	<p>DHM (Lt Lind) fielded a phone consult from E512B's OIC (Capt. Shaw) regarding a fuel leak from a gas pump. They were dispatched to the shell gas station at the dispatched location for a gas pump hose that was leaking gasoline. E512B AOS and found approx. 5-10 gallons of gasoline on the ground. The emergency shut off for the pump had been activated prior to their arrival. Capt Shaw advised that the product did leave the parking lot and flowed out on to Occoquan Rd, but did not travel very far and did not enter any storm drains. The fuel was absorbed using stay dry and pads. They were advised by me to continue using absorbent and notify the property owner/manager that they will be responsible for ensuring clean up. The gas station was already in the process of cleaning up the spill. No other services were needed by hazmat. Notification was made to the VA EOC for documentation purposes only.</p>	Closed
FD23122700069768	12/27/2023	10605 Block Rogues Rd, Midland, VA	Liquid Propane	<p>Company 6 units (E506, R506, HM506, and HMS506) arrived on scene to find an overturned bobtail propane truck. Crews were merged and reassigned upon arrival on scene, after Tech II Podobed made contact with Fauquier's command. Entry team 1 assembled to include Technician II Lee Bergstreser (Team Leader) and Technician II Dominic Carlino with the intention to complete an initial damage assessment and to begin hazard mitigation. HM506 requested Fauquier County provide a RIT extraction team on a charged 1 3/4" hose line (RE1117). The wrecked vehicle was identified as an MC331 Bobtail propane truck with a capacity of 4,223 LB/GAL LP Gas. Vehicle was overturned onto the passenger side and the only occupant of the vehicle had self-extricated. While monitoring air quality and flammability we found that the LEL near the rear of the vehicle was 2% and did not require constant ventilation. On approach to the operator control panel, the product was found to be leaking from a liquid line which ran from the tank to the operator control panel. The leaking pipe on the tank side appeared to be sheared off at the threads and had light vapor emitting. Frost was identified around the damaged area and appeared to have autorefrigerated stopping further leaking. The spray fill pipe was also observed to be emitting vapor, which was leaking past the intact threads. All valves were checked to ensure they were shut completely. Photos taken to be provided visual aid to command. Tank fill level gauge was observed at 50% capacity though the driver noted to on scene crews that it should be 75% full. PSI was at 75, and internal tank temp was 48 degrees Fahrenheit. Could not determine clear level of product in tank by using a TIC. Entry team 1 exited the hazard area and did a face to face with HM506. HMTs on scene determined that a propane flare operation can be safely performed in the adjacent field and tools were assembled. A liquid propane flare stand was erected, and gas/water lines were stretched to the bad container. Operation was delayed in order to find and turn off power to an electrified cattle fence that was next to the propane tanker. Once the fence was determined to be safely off, we commenced operations. During testing/safety checks it was determined that a 50' section of propane flare hose was leaking at the coupling and taken out of service. Replacement fire hose was used to finish the water injection connections. Flare pilot was lit, and flare was successfully operated and observed to have a liquid flare operation of approximately 1.5 hours. Once the flare was completed the tow company was notified that we will need to upright the container to render the remaining propane safe in case some was trapped in the tank due to the sideways position. Hazmat teams completed continuous monitoring during the uprighting procedure. Once standing on all 4 tires, the tow company was moved a safe distance away and entry team 1 reconnected the flare hose lines and continued the flare operation. On phase 2, only a vapor flare was observed, and it was believed that the damaged container had been emptied of propane on the first flare operation, with only some vapors remaining. HM506 determined to be sure we have mitigated the hazard that we should fill the container with enough water that Ferrell gas could confirm there was little to no vapor space remaining, and that the spitter valve was emitting only water or a mixture of residue vapor with water. A sheared pipe needed to be removed and plugged with a large wooden dowel to allow water to continue filling the tank. Multiple attempts were needed to keep the hole plugged as water from the water injection kit built up inside the tank. The tank was eventually filled to approximately 85% capacity, the spitter valve discharged a mixture of water and residual vapor, and it was determined that no more liquid product remained in the tank, meaning no pressure would build up and cause further leakage. The remaining bit of non pressurized vapor residual could not be forced out due to inability to keep leaks fully plugged under pressure of water injection. After confirming with Fauquier hazmat coordinator/fire chief, propane flare and water injection lines were disconnected and bobtail was determined to be safe to transport after a period of atmospheric monitoring to ensure no residual vapors were leaking and causing an unsafe atmosphere. The scene was turned over to state police and VDOT.</p>	Closed

FD2401030000556	1/3/2024	11735 Lucasville Road, Manassas, Va 20112	Liquid Propane	<p>Lt Moore was contacted as Duty Haz Mat by Lt McClurg on E507BM for a phone consult. Lt McClurg stated he was on scene with a 325 gallon propane tank that was actively leaking. Lt Moore upgraded the incident to a Haz Mat and responded with R506, E506, K506 and HM506 from station 6. On arrival Lt Moore and T2 Bergstreser went down range while E507BM acted as a RIT team. T2 Bergstreser and Lt Moore noticed a strong smell of propane in the driveway near the house and tank. After masking up Lt Moore and T2 Bergstreser approached the tank which had an obvious leak near the spitter valve. Readings were elevated for VOCs and LEL was elevated directly around the valve. There was also a viscous yellow substance spattered around the valve assembly and the side of the tank. The area around the valve assembly was damp and the yellow material seemed to have dripped down the side of the tank. T2 Bergstreser checked the valves and found all of them to be secure and hand tight.</p> <p>At this point Lt Moore and T2 Bergstreser checked the area around the tank and found a strong smell of propane in the area but only slightly elevated VOCs and no LEL. Lt Moore decided to flare the tank and preparations were begun. At this time an Amerigas representative arrived on scene and was escorted to the tank with Lt Moore and T2 Bergstreser. He stated the yellow material was solidified mercaptan and that the leak was coming from the spitter. He turned the spitter valve with a great deal of force and it closed further, which immediately stopped the leak. He then retrieved a leak detection spray bottle and checked the rest of the valve assembly. The leak appeared to be mitigated. The operation was discontinued at this point. The Amerigas tech stated that the tank was old and out of date and that he wanted to do some further checking but did not require Fire Department assistance. He was informed to call us back if he needed any further assistance and stated that if he found further problems with the tank or the lines he would pump off the tank.</p>	Closed
FD24011500002852	1/15/2024	I66 37.2E	Diesel Fuel	<p>Phone consult completed with BC Artone for possibly 25 gallons of diesel fuel that leaked from a saddle tank of a tractor trailer secondary to an auto accident. Due to snow storm conditions, crews were unable to determine if any product entered a waterway, but conducted defensive operations to protect the waterway from further product contamination. Hazmat units did not respond due to the snow storm and a prolonged response time.</p>	Closed
FD240003270	1/20/2024	MM48 I66 EB	Diesel Fuel	<p>HM units aos to find a dump truck involved in an auto accident with diesel fuel leaking from the saddle tank. Leak was very small and was easily controlled by wax patching. Approximately 10 gallons of diesel spilled into the roadway, but no waterways were impacted. Absorbent was placed on the ground and scene was tot state police. No LEPC issued.</p>	Closed
FD240004151	1/29/2024	Lee Hwy and Heathcote Blvd	Diesel Fuel & Cooking Oil	<p>I received a phone consult from Battalion 501 at 12:48 on January 29, 2024. BC501 stated that a food truck was involved in an MVC and had spilled approximately 15 gallons of diesel fuel and another 10 gallons of cooking oil into a grassy median. I felt that there were no hazards that required Hazmat to be sent to the scene and that the main priority was ensuring proper cleanup of the site. This became a little more complicated because the driver/owner of the food truck was transported from the scene.</p> <p>I spoke to Matt Adkins and he made contact with the FMO who was able to send a representative to the scene. I called the NOVA regional VDOT line and explained the situation and asked that they coordinate cleanup due to its location and it being on a road VDOT is responsible for. VDOT had 2 units on the scene during my phone call with them.</p>	Closed
FD240008732	3/2/2024	Sanders Lane PWC/LC line @ Bull Run	Motor Oil	<p>Company 6 units got dispatched to a single vehicle accident on Sanders Ln. at the Bull Run bridge which is the Prince William County and Loudoun County line. E627 arrived on scene to find the vehicle off the roadway and on its roof in the water. M627 transported the driver and E627 upgraded the call to a hazmat due to leaking oil. BC 603 arrived on scene, took command and scaled the incident back to just have HM506 continue in. Company 6 units arrived on scene and observed a small sheen around the vehicles engine compartment in the water. Company 6 units took photos for documentation and confirmed with Loudoun County Sheriffs that the Vehicle was going to be towed. Loudoun County Sheriffs confirmed that Battlefield towing was en route to get the vehicle. The incident was turned over to E627 and Loudoun County Sheriffs and Company 6 units went in service.</p>	Closed

FD24030700012801	3/7/2024	Area of 167 Scott Drive – City of Manassas Park	Motor Oil	<p>At the request of FM589 Battalion Chief Rob Clark, I was requested to assist in the investigation of a spill that appeared to be motor oil, which seemed to have been disposed of behind the specified address, over the back fence. Upon my arrival, I was greeted by FM589 and Detective T. Wheeler from the City of Manassas Park Police. We employed oil-detecting paper to test multiple locations, yielding positive results for the presence of oil. The recent weather conditions had caused the oil to spread from the rear of the property into the storm water system of Parkside Middle School.</p> <p>I made contact with Bill Miller from PW Schools, who subsequently reached out to their environmental service division. I informed Mr. Miller that the incident was situated away from the normal school operations and would not interfere with dismissal or school activities. Upon gaining access to the school property, it was observed that the oil had infiltrated the storm water system, with multiple locations exhibiting a sheen on the water or areas where oil had accumulated. We were able to obtain multiple positive results with the oil-detecting paper. Additionally, there was a visible trail of oil leading from the rear of the property to the school's storm water system.</p> <p>Upon the arrival of the school's environmental team, they implemented containment measures by placing booms at the storm water inlets and outflows to prevent further oil contamination in the waterways. I also contacted Alan Lacy from the Department of Environmental Quality (DEQ) to report the situation, as the oil had affected the waterways of the Commonwealth. Detective Wheeler and FM589 documented the scene with multiple photographs before and after testing with the oil-detecting paper. I demonstrated to Detective Wheeler the hydrophobic nature of the oil paper, which does not absorb water, to showcase its effectiveness in detecting oil presence.</p> <p>Personnel from PWC schools escorted me to an outfall near the school bus parking area, approximately 100 yards downstream from the release point. We observed a slight sheen on the water, but were unable to obtain positive results with the oil-detecting paper due to the dilution of the visible sheen.</p> <p>Based on my observations, I believe the substance to be most likely motor oil. While it is challenging to ascertain the exact quantity, it was estimated to be well over 5 quarts. After consulting with PWC Fire Marshal's Office, it was determined that FM589 and Detective Wheeler would approach the responsible party and provide them with a Local Emergency Planning Committee (LEPC) discharge form. FM589 released me from the scene prior to delivering the form and engaging with the responsible party.</p>	Closed
FD240009796	3/9/2024	Sudley RD/ LEE HWY	Diesel Fuel	<p>R506 was dispatched to the intersection of Sudley RD / Lee HWY for a box truck leaking diesel fuel. The call was originally dispatched as a single vehicle ACCX with one patient. BC504 arrived on scene and took command of the incident. BC504 noticed a slight sheen next to the roadway in the drainage ditch and called for a hazmat phone consult. After being informed of the situation R506 was added to the call. R506 arrived on scene to find the driver of the vehicle had already been extracted and transported to the hospital. R506 did notice the Sheen in the drainage ditch however after inspecting the box truck, it appeared to no longer have an active leak. No one on scene was able to give an estimation of how much diesel fuel had leaked out. R506 deployed booms and absorbent pads to the drainage ditch. PD had called Waggy's towing for the vehicle removal and clean-up. R506 contacted the Park Ranger on scene who stated that she would follow up with any product on park property. The scene was turned over to county PD and R506 went in service.</p>	Closed
FD240010207	3/12/2024	Richmond Hwy / Chesapeake Dr. (On Richmond Hwy)	Hydraulic Fluid	<p>Hazmat phone consult was fielded by the duty hazmat tech, Lt Lind. E523's OIC (Til Lonas) advised that a vehicle had leaked an unknown amount of hydraulic fluid along Richmond Hwy in the area of Chesapeake Dr. The fluid was lying on the roadway and not running into any waterways or soils. Other vehicles traveling on Richmond Hwy had also driven through the product. E523 was advised to apply absorbent and sweep the product onto the shoulder and then to contact VDOT for further cleanup/investigation. An approximate gallonage of product was believed to be 20 gallons. HMO 501 was notified, along with Tom Trochan (VDOT) and the VA EOC. No further action was required and this report is for documentation purposes only.</p>	Closed
FD240013016	4/1/2024	148.6 MM, I95SB	Dynasolve	<p>DHM (Lt Lind) fielded a phone consult from E503M's OIC regarding a chemical spill from an auto accident. They advised that approx. 1 gallon of Dynasolve had spilled onto the roadway. After a reference of the chemical, it was determined to be petroleum based and the recommendation was given to units on scene to use absorbent to contain/mitigate the hazard. No waterways were affected and no other hazards were present. The VA EOC and HM501 were notified.</p>	Closed

FD240014045	4/8/2024	13753 Piedmont Vista Dr	Hydraulic Fluid	<p>On the listed date, time, and location I received a HAZMAT phone consultation from Truck 504 officer Lt. Thomson. He advised that a trash truck had a mechanical malfunction with the hydraulics and hydraulic fluid leaked onto the roadway. He advised that the leak was controlled and no longer leaking because all the fluid had leaked from the system. The estimated amount of fluid leaked is 40-50 gallons. He further advised that the spill was contained to the roadway and absorbent had been used to block the spill from moving further. He advised that no manhole covers, drains, or waterways were impacted at all from the spill. The hazard had been mitigated. Truck 504 officer advised that the trash truck company already had a cleaning company enroute to clean the spill. The name of the trash company is Republic Services. PD was enroute to take over traffic control of the scene. I requested Truck 504 officer to send me photos of the scene to get a visual of the incident.</p> <p>From the information and photos provided by T504 officer, I determined that no HAZMAT response or mitigation was necessary. There was no active leak of any hazardous material and the spill had been contained to the roadway around the trash truck. There were no environmental hazards present. T504 officer advised they did not need any additional resources. I advised T504 to give an LEPC form to the responsible party that was still on scene.</p>	Closed
FD24020100006180	5/1/2024	NAMES MADISON HWY / WATERFALL F	Diesel Fuel	<p>E524 requested a phone consult with the DHM through the PSTC. The DHM (Lt. Moore) was assigned to R506 for the day and was already committed to another CFS during the attempt to contact him. HMO502 (Matt Adkins) handled the phone consult and directed units on scene to initiate a Hazmat response. HM506 was dispatched to above location for a reported MVA with potentially 90 gallons on diesel fuel that may be spilled into the roadway. K506 placed OOS in order to staff HM506 with an acting DHM (TII Bergstreser). HM506, HMS506, and E506 responded emergent to the scene. Due to an ACC-X at Hwy 234/Sudley Manor Rd Company 506 units had to divert travel through University Blvd to Balls Ford Rd in order to reach the above incident scene. Upon arrival Company 506 found a 2 vehicle MVA, a sedan had impacted the rear end of a dually diesel truck which was carrying a 90 gallon diesel cell tank in the bed of the truck. Upon impact the sedan displaced or cut a rubber line on the bottom of the fuel cell, which then began leaking fuel into the bed of the truck. The fuel then was able to flow from the truck bed into the roadway. E524 was the first FD unit on scene and after securing the scene and assessing injuries they were able to dam the fuel spill into the immediate area with absorbent, which kept the fuel from reaching a nearby drain. Crews on scene were also able to stop further leaking by closing a stop-cock valve at the bottom of the fuel cell (see image 4 below). The tank was reported to be full at 90 gallons prior to the incident, and had lost approximately 10 gallons in total. Pictures taken for report and responsible party information obtained. An LEPC form was issued to the vehicle owner. The towing company (Gainseville Towing and Recovery 703.754.9696) that had arrived on scene stated they would be able to handle the cleanup of the fuel spill. Scene released to E524 and PD. Company 506 units made ready and in service. Hazmat report completed, VDOT and VAEOC given a courtesy notification. End of report.</p>	Closed
FD240017410	5/1/2024	156 I95SB	Fuel	<p>DHM Lt Lind fielded a phone consult from E520BM's OIC. He advised that a tractor trailer had crashed on the interstate and both saddle tanks had ruptured. Approx 40-50 gallons of fuel had spilled onto the roadway. The fluids were contained to the roadway and did not enter any waterways or the soil. They were advised to place as much absorbent down that they had and then to contact VDOT for additional resources. The EOC was contacted, and no further assistance was needed</p>	Closed
FD240020978	5/25/2024	Reid Ln / Fitzwater Dr., Nokesville, VA 20181	Drums	<p>DHM Lt. Lind fielded a phone consult from PE505 regarding several 55 gallon drums that had been abandoned on the roadway, on a creek bank, and in the creek on Reid Lane. HM506, R506, and E506 responded to the scene. Duty FM was requested by the DHM enroute. Upon arrival, 506 personnel met with PE505 and observed 4, 55 gallon drums in the reported location, 2 of them in the creek. The drums were closed and there were no signs of any product actively leaking. Observed a light sheen on the surface of the water near the drums indicating a possible petroleum product. Tested using oil paper and the Gemini and both results came back negative. Observed a label on one of the drums for motor oil. Personnel placed absorbent pads around the drums and 2 booms across the creek; one directly downstream of the drums and the second about 25 feet downstream. DHM contacted DEQ representative to report the findings (see notes under VA DEQ for further detail). Duty FM researched the closest residence and spoke with the property owner to report the incident. HM506 marked the area with fire line tape and DCO 500 notified OPSC in the event any further reports were made from citizens. Scene turned over to Duty FM.</p>	Closed

FD240021313	5/27/2024	11005 Reid Ln., Nokesville, VA 20181	Drums	DHM Lt Lind fielded a phone consult from E525. E525 noted 4 drums on Reid Lane and that absorbent pads and booms had already been put in place along with fire line tape marking the area. E525 sent photos to DHM Lind and confirmed it was the same drums from an incident on 5/25/2024. The photos showed that the drums had been moved slightly and there was a nominal addition of product in the water adjacent to the drums. The defensive measures previously put in place (absorbent pads and 2 booms) were still in place. DHM notified the VA EOC and advised them to have the DEQ follow up with us if they needed any further information. VA EOC report number from the original incident is below for reference.	Closed
FD240023471	6/10/2024	Montega Dr. / Minicler Ct., Woodbridge, VA 22192	Unknown Substance	DHM Lind received a phone consult from E526 for a report of a suspicious substance found on the bank of a storm water pond by a Public Works employee. E506, R506, and HM506 responded to the scene. Met with E526 and County PD on the scene. HM506 crew observed a package wrapped in duct tape that had been cut open by the public works rep on scene. Inside the package were several small clear plastic bags containing a brown clumpy substance that resembled dirt or sand. The atmosphere was monitored utilizing the MultiRae Pro and the MX908 to confirm that the area was safe. County PD officers, along with fire department hazmat personnel approached the area where the package was located. PD officers advised that it resembled some sort of possible narcotic and that they would bag the packages and transport them to their facility. At the request/permission of county PD, a sample was obtained by hazmat personnel to try and identify the product utilizing the MX908 and Gemini. No identification of the product was obtained, and fire service personnel cleared the scene. The scene was turned over to County PD. Hazmat 501 and DCO500 were also notified of the incident.	Closed
FD240026229	6/28/2024	Queen Chapel Rd / Hoadly Rd., Woodbridge, VA 22192	Motor Oil	R506 was dispatched to an auto accident with entrapment at the above location. During the incident, a large amount of oil was noted leaking from the dump truck (involved in the auto accident) and running down the shoulder of Hoadly Rd. Defensive measures were taken to stop the flow of oil and other fluids from going into the storm drain. An inspection inside the storm drain revealed that some of the product had entered the storm drain. The next storm drain access further down was checked and was completely dry. It appeared that most of, if not all, of the product in the storm drain was water. The engine company on scene flowed water to extinguish a small fire in the truck during the incident. It did not appear that the product had traveled down the storm water system. Waggy's towing was on scene and assumed responsibility of the released product. Waggy's also happened to be the owner of the trash company that owns the dump truck involved in the auto accident. Approx. 40 pads and 5 bags of absorbent were used. No other hazards or products appeared to be leaking from any of the vehicles. The VA EOC was notified of the spill.	Closed
FD240026556	6/30/2024	761 Fort Henry Ct., Dumfries, VA 2202	Fire Fighting Foam	DHM Lt Lind fielded a phone consult from E503M's OIC. He advised that they had used approx. 10 gallons of foam to fight a car fire. The foam concentrate was diluted with tank water. Some of the foam water mixture entered the storm drain, but is non-hazardous. Due to the phone consult going through the PSCC, a report is being completed.	Closed
FD230048929	12/4/2024	4502 Forestburg Ln., Triangle, VA 22172	Fuel Oil	Requested by E503M to assist with a leaking fuel oil tank. DHM Lt Lind contacted the OIC from E503M via phone. They reported that the fuel oil tank had a steady drip from the bottom of it and was leaking product onto the ground. The tank is a 250 gallon tank on the Delta side of the home. They were instructed to place their pop up pool under the spill to contain the product until our arrival. R506 and HM506 responded and a.s. Hazmat personnel determined the leak was coming from a pin hole size hole at the bottom of the tank. Wax was used to stop the leak and the pop up pool was used to trap any product that overcame our wax seal. The homeowner advised that the company was supposed to come out tomorrow to fill his fuel oil tank, so we are estimating that the tank was at an 1/8 <sup>th</sup> full. Estimated product release is between 20-40 gallons. It was difficult to get a better estimate on product release because of the wet saturated ground from rain over the weekend. The homeowner was issued an LEPC and other contacts were made (DEQ, VA EOC, and text to Captain Brubaker.) Company 6 and 3 units cleared the scene.	Closed

## **Appendix G**

### **Industrial and High Risk Inspection Summary**

Landuse	Outfall Id	Last Inspection Date	Flow Present	Illicit Discharge	High Risk	Maintenance Required	Within PWC Service Area	VPDES Permitted
Open Space	64149	8/14/2023	No	Unlikely	Y	True	N	N
Residential	15296	9/20/2023	Yes	Unlikely	Y	False	N	N
Residential	61362	9/22/2023	No	Unlikely	Y	True	Y	N
Shopping Center	62841	9/22/2023	No	Unlikely	Y	False	Y	N
Planned Industrial Park	60841	3/27/2024	No	Unlikely	Y	True	N	N
Residential	22489	8/22/2023	Yes	Unlikely	Y	False	N	N
Other Industrial	23506	9/28/2023	Yes	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	54999	8/18/2023	No	Unlikely	Y	True	Y	N
Shopping Center	56536	9/19/2023	Stagnant	Unlikely	Y	False	N	N
Wholesale Warehousing	35138	8/18/2023	No	Unlikely	Y	True	N	N
Gas Station	61907	9/19/2023	No	Unlikely	Y	False	N	N
Shopping Center	11619	11/9/2023	Yes	Unlikely	Y	False	N	N
Planned Industrial Park	13811	3/26/2024	Stagnant	Obvious	Y	True	N	N
Shopping Center	30720	5/21/2024	Yes	Unlikely	Y	False	N	N
Residential	64080	9/20/2023	Yes	Unlikely	Y	True	Y	N
Planned Industrial Park	62110	11/13/2023	No	Unlikely	Y	True	N	N
Planned Industrial Park	62108	11/13/2023	No	Unlikely	Y	True	N	N
Wholesale Warehousing	21444	8/22/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	34882	11/14/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	34879	11/13/2023	No	Unlikely	Y	True	N	N
Other Industrial	23512	9/28/2023	Yes	Unlikely	Y	True	N	N
Planned Industrial Park	62109	11/13/2023	No	Unlikely	Y	True	N	N
Hotel w/ Restaurant	42817	11/9/2023	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	20164	3/20/2024	Yes	Obvious	Y	True	N	N
Open Space	64151	8/15/2023	No	Unlikely	Y	True	N	N
Residential	61447	9/21/2023	Yes	Unlikely	Y	False	Y	N
Hotel w/ Restaurant	39915	11/9/2023	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47292	10/27/2023	No	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	60202	8/18/2023	Yes	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47274	10/27/2023	No	Unlikely	Y	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47279	10/27/2023	No	Unlikely	Y	False	N	N
Shopping Center	10508	5/20/2024	No	Unlikely	Y	False	Y	N
Shopping Center	52647	8/18/2023	No	Unlikely	Y	False	N	N
Shopping Center	42823	11/9/2023	No	Unlikely	Y	False	N	N
Shopping Center	8083	10/26/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	28930	5/3/2024	Yes	Unlikely	Y	True	N	N
Gas Station	21517	11/9/2023	No	Unlikely	Y	False	N	N
Shopping Center	36187	9/8/2023	No	Unlikely	Y	False	N	N
Hotel w/ Restaurant	40771	10/26/2023	Yes	Unlikely	Y	False	N	N
Residential	8283	10/11/2023	Yes	Obvious	Y	False	N	N
Shopping Center	62984	9/22/2023	No	Unlikely	Y	False	N	N
Regional Mall	25676	3/15/2024	Yes	Unlikely	Y	False	N	N
Gas Station	29795	8/15/2023	No	Unlikely	Y	False	N	N
Hotel w/ Restaurant	42821	11/9/2023	No	Unlikely	Y	False	N	N
Other Industrial	28321	9/29/2023	Yes	Unlikely	Y	True	N	N
Shopping Center	62906	9/22/2023	Stagnant	Unlikely	Y	False	Y	N
Hotel w/ Restaurant	5755-005	11/16/2023	No	Unlikely	Y	False	N	N
Gas Station	13613	8/18/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	39498	5/3/2024	No	Unlikely	Y	True	N	N
Residential	39830	10/12/2023	No	Unlikely	Y	False	N	N
Shopping Center	39925	11/9/2023	No	Unlikely	Y	False	N	N
Wholesale Warehousing	27613	8/22/2023	No	Unlikely	Y	False	N	N
Residential	8774	3/26/2024	No	Obvious	Y	True	Y	N
Hotel w/ Restaurant	10521	5/20/2024	No	Unlikely	Y	True	Y	N
Gas Station	20159	3/20/2024	No	Unlikely	Y	False	N	N
Planned Industrial Park	27640	8/22/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	13348	4/10/2024	Stagnant	Unlikely	Y	False	N	N
Planned Industrial Park	40260	8/14/2023	Stagnant	Obvious	Y	True	N	N
Planned Industrial Park	13813	3/27/2024	No	Unlikely	Y	False	N	N
Planned Industrial Park	11330	8/15/2023	Stagnant	Unlikely	Y	True	N	N
Planned Industrial Park	13034	11/14/2023	No	Unlikely	Y	False	N	N
Shopping Center	21180	3/19/2024	Stagnant	Unlikely	Y	False	N	N
Shopping Center	42815	11/9/2023	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	27627	8/22/2023	No	Unlikely	Y	False	N	N
Wholesale Warehousing	21442	8/22/2023	No	Unlikely	Y	False	N	N
Shopping Center	30690	5/24/2024	Yes	Unlikely	Y	False	N	N
Other Industrial	28325	9/29/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	19425	4/11/2024	No	Unlikely	N	False	N	N
Planned Industrial Park	56035	8/14/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	56009	11/30/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	26354	4/11/2024	No	Unlikely	N	False	N	N
Planned Industrial Park	30908	12/13/2023	Yes	Obvious	N	False	N	N
Other Industrial	28331	9/29/2023	Yes	Unlikely	N	False	N	N
Planned Industrial Park	25242	4/10/2024	No	Unlikely	N	True	N	N
Planned Industrial Park	22866	4/11/2024	No	Unlikely	N	False	N	N
Planned Industrial Park	39466	5/3/2024	No	Unlikely	N	True	N	N
Planned Industrial Park	28912	11/14/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	62115	11/14/2023	No	Unlikely	N	False	N	N
Other Industrial	28323	9/29/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	19411	4/11/2024	No	Unlikely	N	False	N	N

## **Appendix H**

# **County-Maintained SWM Facilities - Inspection Summary**



## County-Maintained SWM/BMP - Compliance Report FY24

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1	234	7/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
2	543	7/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
3	793	7/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
4	692	7/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
5	189	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
6	214	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
7	410	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
8	613	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
9	871	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
10	872	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
11	873	7/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
12	850	7/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
13	113	7/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
14	1043	7/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
15	1044	7/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
16	1045	7/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
17	30	7/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
18	1046	7/10/2023	Routine	Yes	No maintenance is needed at this time.	No	No
19	64	7/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
20	971	7/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
21	971	7/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
22	906	7/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
23	907	7/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
24	908	7/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
25	909	7/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
26	887	7/12/2023	Routine	Yes	No maintenance is needed at this time.	No	No
27	455	7/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
28	882	7/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
29	805	7/13/2023	Routine	Yes	No maintenance is needed at this time.	No	No
30	874	7/13/2023	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
31	881	7/13/2023	Routine	Yes	No maintenance is needed at this time.	No	No
32	794	7/18/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
33	1051	7/18/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
34	558	7/19/2023	Routine	Yes	No maintenance is needed at this time.	No	No
35	69	7/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
36	685	7/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
37	1001	7/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
38	1002	7/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
39	151	7/24/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
40	471	7/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
41	121	7/24/2023	Routine	Yes	No maintenance is needed at this time.	No	No
42	368	7/24/2023	Routine	Yes	No maintenance is needed at this time.	No	No
43	100	7/25/2023	Routine	No	Maintenance is needed (County)	No	Yes
44	564	7/26/2023	Routine	No	Maintenance is needed (County)	No	Yes
45	551	7/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
46	552	7/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
47	553	7/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
48	563	7/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
49	590	7/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
50	313	7/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
51	868	7/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
52	439	7/31/2023	Routine	Yes	No maintenance is needed at this time.	No	No
53	803	8/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
54	962	8/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
55	269	8/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
56	866	8/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
57	867	8/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
58	532	8/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
59	216	8/3/2023	Routine	No	Maintenance is needed (County)	No	Yes
60	318	8/3/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
61	505	8/3/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
62	217	8/3/2023	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
63	533	8/3/2023	Routine	Yes	No maintenance is needed at this time.	No	No
64	837	8/3/2023	Routine	Yes	No maintenance is needed at this time.	No	No
65	894	8/3/2023	Routine	Yes	No maintenance is needed at this time.	No	No
66	336	8/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
67	339	8/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
68	340	8/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
69	529	8/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
70	559	8/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
71	141	8/8/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
72	142	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
73	143	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
74	377	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
75	424	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
76	501	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
77	1042	8/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
78	459	8/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
79	884	8/9/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
80	795	8/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
81	859	8/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
82	195	8/9/2023	Routine	Yes	No maintenance is needed at this time.	No	No
83	458	8/9/2023	Routine	Yes	No maintenance is needed at this time.	No	No
84	1050	8/9/2023	Routine	Yes	No maintenance is needed at this time.	No	No
85	617	8/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
86	528	8/14/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
87	858	8/14/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
88	652	8/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
89	669	8/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
90	1048	8/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
91	270	8/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
92	343	8/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
93	823	8/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
94	218	8/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
95	808	8/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
96	910	8/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
97	996	8/15/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
98	84	8/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
99	503	8/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
100	118	8/16/2023	Routine	Yes	No maintenance is needed at this time.	No	No
101	85	8/17/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
102	88	8/17/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
103	66	8/17/2023	Routine	Yes	No maintenance is needed at this time.	No	No
104	891	8/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
105	973	8/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
106	974	8/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
107	975	8/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
108	80	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
109	81	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
110	86	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
111	470	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
112	477	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
113	789	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
114	864	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
115	890	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
116	954	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
117	1003	8/24/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
118	554	8/24/2023	Routine	Yes	No maintenance is needed at this time.	No	No
119	150	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
120	297	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
121	442	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
122	482	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
123	920	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
124	921	8/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
125	70	8/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
126	148	8/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
127	149	8/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
128	434	8/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
129	953	8/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
130	129	8/29/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
131	130	8/29/2023	Routine	Yes	No maintenance is needed at this time.	No	No
132	131	8/29/2023	Routine	Yes	No maintenance is needed at this time.	No	No
133	427	8/29/2023	Routine	Yes	No maintenance is needed at this time.	No	No
134	911	8/30/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
135	912	8/30/2023	Routine	Yes	No maintenance is needed at this time.	No	No
136	89	9/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
137	338	9/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
138	1021	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
139	1022	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
140	1023	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
141	1024	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
142	1025	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
143	1029	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
144	1030	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
145	1031	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
146	1032	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
147	1033	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
148	1034	9/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
149	326	9/6/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
150	387	9/7/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
151	388	9/7/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
152	53	9/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
153	55	9/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
154	238	9/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
155	922	9/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
156	389	9/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
157	405	9/8/2023	Routine	No	Maintenance is needed (County)	No	Yes
158	15	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
159	232	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
160	235	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
161	312	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
162	390	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
163	520	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
164	535	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
165	916	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
166	935	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
167	1020	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
168	836	9/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
169	144	9/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
170	1037	9/12/2023	Routine	No	Maintenance is needed (County)	No	Yes
171	251	9/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
172	853	9/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
173	854	9/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
174	972	9/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
175	1012	9/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
176	56	9/12/2023	Routine	Yes	No maintenance is needed at this time.	No	No
177	562	9/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
178	556	9/14/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
179	571	9/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
180	378	9/15/2023	Complaint Based	No	Maintenance is needed (County)	No	Yes
181	549	9/15/2023	Routine	Yes	No maintenance is needed at this time.	No	No
182	284	9/19/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
183	899	9/19/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
184	898	9/19/2023	Routine	Yes	No maintenance is needed at this time.	No	No
185	627	9/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
186	957	9/20/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
187	207	9/20/2023	Routine	Yes	No maintenance is needed at this time.	No	No
188	208	9/20/2023	Routine	Yes	No maintenance is needed at this time.	No	No
189	690	9/20/2023	Routine	Yes	No maintenance is needed at this time.	No	No
190	63	9/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
191	632	9/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
192	633	9/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
193	98	9/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
194	414	9/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
195	68	9/22/2023	Routine	Yes	No maintenance is needed at this time.	No	No
196	852	9/22/2023	Routine	Yes	No maintenance is needed at this time.	No	No
197	902	9/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
198	879	9/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
199	901	9/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
200	903	9/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
201	411	9/27/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
202	527	9/27/2023	Routine	Yes	No maintenance is needed at this time.	No	No
203	567	9/28/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
204	87	9/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
205	133	9/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
206	885	9/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
207	698	9/29/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
208	1005	10/2/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
209	938	10/2/2023	Routine	Yes	No maintenance is needed at this time.	No	No
210	970	10/2/2023	Routine	Yes	No maintenance is needed at this time.	No	No
211	988	10/2/2023	Routine	Yes	No maintenance is needed at this time.	No	No
212	158	10/4/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
213	233	10/4/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
214	807	10/4/2023	Routine	Yes	No maintenance is needed at this time.	No	No
215	126	10/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
216	16	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
217	17	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
218	536	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
219	788	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
220	806	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
221	848	10/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
222	155	10/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
223	819	10/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
224	315	10/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
225	237	10/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
226	379	10/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
227	583	10/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
228	1004	10/10/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
229	345	10/10/2023	Routine	Yes	No maintenance is needed at this time.	No	No
230	346	10/10/2023	Routine	Yes	No maintenance is needed at this time.	No	No
231	870	10/10/2023	Routine	Yes	No maintenance is needed at this time.	No	No
232	122	10/13/2023	Routine	No	Maintenance is needed (County)	No	Yes
233	481	10/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
234	1006	10/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
235	541	10/13/2023	Routine	Yes	No maintenance is needed at this time.	No	No
236	955	10/16/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
237	337	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
238	383	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
239	384	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
240	385	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
241	465	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
242	653	10/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
243	108	10/17/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
244	608	10/17/2023	Routine	Yes	No maintenance is needed at this time.	No	No
245	609	10/17/2023	Routine	Yes	No maintenance is needed at this time.	No	No
246	414	10/18/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
247	252	10/18/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
248	232	10/18/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
249	235	10/18/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
250	390	10/18/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
251	470	10/18/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
252	535	10/18/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
253	253	10/18/2023	Routine	Yes	No maintenance is needed at this time.	No	No
254	321	10/18/2023	Routine	Yes	No maintenance is needed at this time.	No	No



No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
255	399	10/18/2023	Routine	Yes	No maintenance is needed at this time.	No	No
256	531	10/20/2023	Routine	Yes	No maintenance is needed at this time.	No	No
257	147	10/23/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
258	125	10/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
259	258	10/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
260	517	10/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
261	75	10/23/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
262	166	10/23/2023	Routine	Yes	No maintenance is needed at this time.	No	No
263	369	10/23/2023	Routine	Yes	No maintenance is needed at this time.	No	No
264	370	10/23/2023	Routine	Yes	No maintenance is needed at this time.	No	No
265	371	10/23/2023	Routine	Yes	No maintenance is needed at this time.	No	No
266	375	10/23/2023	Routine	Yes	No maintenance is needed at this time.	No	No
267	483	10/26/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
268	123	10/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
269	860	10/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
270	124	10/26/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
271	372	10/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
272	373	10/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
273	374	10/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
274	478	10/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
275	861	10/26/2023	Routine	Yes	No maintenance is needed at this time.	No	No
276	218	10/30/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
277	432	10/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
278	433	10/31/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
279	1004	11/1/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
280	176	11/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
281	914	11/3/2023	Routine	Yes	No maintenance is needed at this time.	No	No
282	566	11/6/2023	Routine	No	Maintenance is needed (County)	No	Yes
283	916	11/6/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
284	652	11/6/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
285	910	11/6/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
286	630	11/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
287	631	11/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
288	967	11/9/2023	Routine	No	Maintenance is needed (County)	No	Yes
289	565	11/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
290	968	11/9/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
291	969	11/9/2023	Routine	Yes	No maintenance is needed at this time.	No	No
292	50	11/13/2023	Routine	Yes	No maintenance is needed at this time.	No	No
293	855	11/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
294	856	11/15/2023	Routine	No	Maintenance is needed (County)	No	Yes
295	909	11/15/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
296	597	11/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
297	622	11/16/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
298	623	11/16/2023	Routine	Yes	No maintenance is needed at this time.	No	No
299	998	11/17/2023	Routine	No	Maintenance is needed (County)	No	Yes
300	73	11/20/2023	Routine	Yes	No maintenance is needed at this time.	No	No
301	7	11/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
302	8	11/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
303	10	11/29/2023	Routine	Yes	No maintenance is needed at this time.	No	No
304	12	11/29/2023	Routine	Yes	No maintenance is needed at this time.	No	No
305	694	12/1/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
306	662	12/1/2023	Routine	Yes	No maintenance is needed at this time.	No	No
307	32	12/4/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
308	119	12/4/2023	Routine	Yes	No maintenance is needed at this time.	No	No
309	226	12/4/2023	Routine	Yes	No maintenance is needed at this time.	No	No
310	227	12/4/2023	Routine	Yes	No maintenance is needed at this time.	No	No
311	228	12/4/2023	Routine	Yes	No maintenance is needed at this time.	No	No
312	397	12/5/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
313	139	12/5/2023	Routine	No	No maintenance is needed at this time.	No	No
314	567	12/5/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
315	31	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
316	115	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
317	116	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
318	117	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
319	135	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
320	136	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
321	137	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
322	138	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
323	140	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
324	488	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
325	518	12/5/2023	Routine	Yes	No maintenance is needed at this time.	No	No
326	34	12/6/2023	Routine	No	Maintenance is needed (County)	No	Yes
327	41	12/6/2023	Routine	No	Maintenance is needed (County)	No	Yes
328	202	12/6/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
329	254	12/6/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
330	33	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
331	51	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
332	255	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
333	256	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
334	288	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
335	289	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
336	290	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
337	291	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
338	437	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
339	438	12/6/2023	Routine	Yes	No maintenance is needed at this time.	No	No
340	839	12/7/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
341	857	12/7/2023	Routine	Yes	No maintenance is needed at this time.	No	No
342	278	12/8/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
343	495	12/8/2023	Routine	Yes	No maintenance is needed at this time.	No	No
344	496	12/8/2023	Routine	Yes	No maintenance is needed at this time.	No	No
345	497	12/8/2023	Routine	Yes	No maintenance is needed at this time.	No	No
346	499	12/8/2023	Routine	Yes	No maintenance is needed at this time.	No	No
347	500	12/8/2023	Routine	Yes	No maintenance is needed at this time.	No	No
348	154	12/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
349	157	12/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
350	810	12/11/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
351	317	12/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
352	1039	12/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
353	1040	12/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
354	1041	12/11/2023	Routine	Yes	No maintenance is needed at this time.	No	No
355	637	12/12/2023	Routine	No	Maintenance is needed (County)	No	Yes
356	638	12/12/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
357	587	12/12/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
358	201	12/13/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
359	547	12/13/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
360	18	12/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
361	163	12/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
362	200	12/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
363	624	12/13/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
364	696	12/14/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
365	19	12/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
366	29	12/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
367	62	12/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
368	65	12/14/2023	Routine	Yes	No maintenance is needed at this time.	No	No
369	71	12/18/2023	Routine	Yes	No maintenance is needed at this time.	No	No
370	798	12/18/2023	Routine	Yes	No maintenance is needed at this time.	No	No
371	165	12/19/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
372	165	12/19/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
373	561	12/19/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
374	560	12/19/2023	Routine	Yes	No maintenance is needed at this time.	No	No
375	684	12/19/2023	Routine	Yes	No maintenance is needed at this time.	No	No
376	557	12/20/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
377	538	12/21/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
378	822	12/21/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
379	820	12/22/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
380	454	12/27/2023	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
381	169	12/28/2023	Routine	No	Maintenance is needed (County)	No	Yes
382	658	12/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
383	659	12/28/2023	Routine	No	Maintenance is needed (Owner)	Yes	No
384	388	12/28/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
385	973	12/28/2023	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
386	223	12/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
387	224	12/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
388	245	12/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
389	246	12/28/2023	Routine	Yes	No maintenance is needed at this time.	No	No
390	955	12/29/2023	60-day reinspection	No	Maintenance is needed (County)	No	Yes
391	1006	12/29/2023	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
392	429	1/2/2024	Routine	No	Maintenance is needed (County)	No	Yes
393	147	1/2/2024	60-day reinspection	No	Maintenance is needed (County/Owner)	Yes	Yes
394	203	1/2/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
395	428	1/2/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
396	145	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
397	180	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
398	187	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
399	277	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
400	396	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
401	401	1/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
402	967	1/3/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
403	329	1/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
404	354	1/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
405	355	1/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
406	54	1/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
407	44	1/5/2024	Routine	No	Maintenance is needed (County)	No	Yes
408	47	1/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
409	72	1/8/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
410	298	1/8/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
411	360	1/8/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
412	361	1/8/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
413	218	1/9/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
414	186	1/10/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
415	482	1/11/2024	60-day reinspection	No	Maintenance is needed (County)	No	Yes
416	359	1/11/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
417	80	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
418	81	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
419	84	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
420	85	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
421	86	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
422	477	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
423	503	1/11/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
424	570	1/11/2024	Routine	Yes	No maintenance is needed at this time.	No	No
425	452	1/12/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
426	150	1/12/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
427	453	1/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
428	989	1/22/2024	Routine	No	Maintenance is needed (County)	No	Yes
429	821	1/22/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
430	498	1/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
431	999	1/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
432	1000	1/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
433	814	1/23/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
434	128	1/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
435	59	1/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
436	120	1/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
437	156	1/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
438	813	1/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
439	990	1/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
440	991	1/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
441	127	1/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
442	800	1/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
443	846	1/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
444	847	1/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
445	492	1/30/2024	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
446	293	1/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
447	294	1/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
448	595	1/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
449	602	1/31/2024	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
450	295	1/31/2024	Routine	Yes	No maintenance is needed at this time.	No	No
451	199	2/1/2024	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
452	1017	2/1/2024	Routine	Yes	No maintenance is needed at this time.	No	No
453	1018	2/1/2024	Routine	Yes	No maintenance is needed at this time.	No	No
454	426	2/2/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
455	300	2/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
456	809	2/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
457	1038	2/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
458	877	2/5/2024	Routine	No	Maintenance is needed (County)	No	Yes
459	610	2/5/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
460	878	2/5/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
461	889	2/5/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
462	362	2/6/2024	Routine	No	Maintenance is needed (County)	No	Yes
463	445	2/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
464	161	2/8/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
465	815	2/8/2024	Routine	Yes	No maintenance is needed at this time.	No	No
466	628	2/13/2024	Routine	No	Maintenance is needed (County)	No	Yes
467	629	2/13/2024	Routine	No	Maintenance is needed (County)	No	Yes
468	694	2/13/2024	60-day reinspection	No	Maintenance is needed (County/Owner)	Yes	Yes
469	286	2/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
470	600	2/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
471	1047	2/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
472	382	2/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
473	436	2/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
474	1019	2/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
475	446	2/14/2024	Routine	No	Maintenance is needed (County)	No	Yes
476	895	2/14/2024	Routine	No	Maintenance is needed (County)	No	Yes
477	897	2/14/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
478	601	2/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
479	896	2/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
480	928	2/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
481	190	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
482	191	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
483	406	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
484	423	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
485	796	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
486	981	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
487	982	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
488	983	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
489	984	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
490	985	2/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
491	489	2/15/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
492	797	2/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
493	28	2/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
494	972	2/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
495	189	2/16/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
496	74	2/20/2024	Routine	No	Maintenance is needed (County)	No	Yes
497	667	2/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
498	11	2/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
499	334	2/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
500	394	2/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
501	425	2/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
502	699	2/21/2024	Routine	No	Maintenance is needed (County)	No	Yes
503	2	2/21/2024	Routine	No	Maintenance is needed (County)	No	Yes
504	4	2/21/2024	Routine	No	Maintenance is needed (County)	No	Yes
505	655	2/21/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
506	812	2/21/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
507	22	2/21/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
508	584	2/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
509	649	2/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
510	654	2/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No



No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
511	3	2/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
512	335	2/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
513	456	2/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
514	650	2/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
515	986	2/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
516	992	2/22/2024	Routine	No	Maintenance is needed (County)	No	Yes
517	170	2/22/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
518	484	2/22/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
519	593	2/22/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
520	647	2/22/2024	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
521	146	2/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
522	599	2/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
523	171	2/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
524	970	2/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
525	993	2/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
526	440	2/26/2024	Routine	No	Maintenance is needed (County)	No	Yes
527	441	2/26/2024	Routine	No	Maintenance is needed (County)	No	Yes
528	113	2/26/2024	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
529	92	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
530	352	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
531	353	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
532	511	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
533	569	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
534	697	2/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
535	83	2/27/2024	Routine	No	Maintenance is needed (County)	No	Yes
536	524	2/27/2024	Routine	No	Maintenance is needed (County)	No	Yes
537	670	2/27/2024	Routine	No	Maintenance is needed (County)	No	Yes
538	604	2/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
539	465	2/27/2024	60-day reinspection	No	Maintenance is needed (Owner)	Yes	No
540	337	2/27/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
541	82	2/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
542	457	2/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
543	490	2/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
544	582	2/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
545	691	2/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
546	579	2/28/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
547	576	2/28/2024	Routine	Yes	No maintenance is needed at this time.	No	No
548	578	2/29/2024	Routine	No	Maintenance is needed (County)	No	Yes
549	95	2/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
550	112	2/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
551	647	2/29/2024	Other	No	Meeting	Yes	No
552	96	2/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
553	57	3/1/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
554	934	3/1/2024	Routine	Yes	No maintenance is needed at this time.	No	No
555	514	3/4/2024	Routine	No	Maintenance is needed (County)	No	Yes
556	516	3/4/2024	Routine	No	Maintenance is needed (County)	No	Yes
557	804	3/4/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
558	510	3/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
559	512	3/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
560	515	3/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
561	892	3/6/2024	Routine	No	Maintenance is needed (County)	No	Yes
562	519	3/6/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
563	616	3/6/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
564	883	3/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
565	939	3/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
566	987	3/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
567	182	3/7/2024	Routine	No	Maintenance is needed (County)	No	Yes
568	183	3/7/2024	Routine	No	Maintenance is needed (County)	No	Yes
569	225	3/7/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
570	314	3/7/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
571	220	3/7/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
572	178	3/7/2024	Routine	Yes	No maintenance is needed at this time.	No	No
573	179	3/7/2024	Routine	Yes	No maintenance is needed at this time.	No	No
574	642	3/7/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
575	198	3/11/2024	Routine	No	Maintenance is needed (County)	No	Yes
576	606	3/11/2024	Routine	No	Maintenance is needed (County)	No	Yes
577	327	3/11/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
578	90	3/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
579	199	3/11/2024	Routine	Yes	No maintenance is needed at this time.	No	No
580	607	3/11/2024	Routine	Yes	No maintenance is needed at this time.	No	No
581	27	3/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
582	67	3/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
583	598	3/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
584	904	3/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
585	905	3/12/2024	Routine	Yes	No maintenance is needed at this time.	No	No
586	845	3/14/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
587	646	3/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
588	980	3/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
589	271	3/15/2024	Routine	No	Maintenance is needed (County)	No	Yes
590	316	3/18/2024	Routine	No	Maintenance is needed (County)	No	Yes
591	824	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
592	825	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
593	826	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
594	827	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
595	828	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
596	829	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
597	830	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
598	831	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
599	832	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
600	833	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
601	834	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
602	835	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
603	1013	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
604	835	3/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
605	886	3/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
606	581	3/19/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
607	919	3/19/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
608	104	3/19/2024	Routine	Yes	No maintenance is needed at this time.	No	No
609	328	3/19/2024	Routine	Yes	No maintenance is needed at this time.	No	No
610	880	3/19/2024	Routine	Yes	No maintenance is needed at this time.	No	No
611	965	3/19/2024	Routine	Yes	No maintenance is needed at this time.	No	No
612	366	3/20/2024	Routine	No	Maintenance is needed (County)	No	Yes
613	661	3/20/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
614	863	3/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
615	250	3/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
616	132	3/21/2024	Routine	No	Maintenance is needed (County)	No	Yes
617	430	3/21/2024	Routine	Yes	No maintenance is needed at this time.	No	No
618	917	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
619	918	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
620	925	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
621	926	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
622	927	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
623	936	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
624	964	3/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
625	530	3/25/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
626	588	3/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
627	640	3/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
628	1009	3/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
629	521	3/26/2024	Routine	No	Maintenance is needed (County)	No	Yes
630	589	3/26/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
631	460	3/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
632	236	3/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
633	251	3/29/2024	Complaint Based	No	Maintenance is needed (Owner)	Yes	No
634	644	4/1/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
635	643	4/1/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
636	930	4/1/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
637	619	4/3/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
638	279	4/3/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
639	265	4/4/2024	Routine	No	Maintenance is needed (County)	No	Yes
640	257	4/4/2024	Routine	No	No maintenance is needed at this time.	No	No
641	259	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
642	260	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
643	261	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
644	264	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
645	266	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
646	267	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
647	268	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
648	280	4/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
649	400	4/9/2024	Routine	No	Maintenance is needed (County)	No	Yes
650	395	4/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
651	242	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
652	243	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
653	244	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
654	247	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
655	248	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
656	249	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
657	364	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
658	365	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
659	367	4/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
660	416	4/10/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
661	403	4/10/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
662	79	4/15/2024	Routine	No	Maintenance is needed (County)	No	Yes
663	221	4/15/2024	Routine	No	Maintenance is needed (County)	No	Yes
664	378	4/15/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
665	393	4/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
666	881	4/15/2024	Complaint Based	Yes	No maintenance is needed at this time.	No	No
667	204	4/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
668	205	4/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
669	222	4/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
670	241	4/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
671	391	4/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
672	212	4/16/2024	Routine	No	Maintenance is needed (County)	No	Yes
673	564	4/16/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
674	323	4/16/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
675	324	4/16/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
676	213	4/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
677	215	4/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
678	843	4/17/2024	Routine	No	Maintenance is needed (County)	No	Yes
679	402	4/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
680	648	4/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
681	844	4/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
682	790	4/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No
683	791	4/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No
684	668	4/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
685	963	4/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
686	966	4/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
687	893	4/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
688	811	4/23/2024	Routine	No	Maintenance is needed (County)	No	Yes
689	971	4/23/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
690	272	4/23/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
691	49	4/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
692	325	4/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
693	548	4/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
694	817	4/24/2024	Routine	No	Maintenance is needed (County)	No	Yes
695	39	4/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
696	506	4/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
697	507	4/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
698	513	4/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
699	451	4/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
700	816	4/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
701	45	4/25/2024	Routine	No	Maintenance is needed (County)	No	Yes
702	527	4/25/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
703	167	4/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
704	219	4/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
705	239	4/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
706	937	4/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
707	240	4/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
708	468	4/29/2024	Routine	No	Maintenance is needed (County)	No	Yes
709	568	4/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
710	285	4/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
711	299	4/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
712	467	4/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
713	469	4/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
714	634	4/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
715	296	5/1/2024	Routine	No	Maintenance is needed (County)	No	Yes
716	276	5/1/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
717	508	5/1/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
718	509	5/1/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
719	546	5/1/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
720	274	5/1/2024	Routine	Yes	No maintenance is needed at this time.	No	No
721	301	5/2/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
722	302	5/2/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
723	462	5/2/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
724	275	5/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
725	303	5/2/2024	Routine	Yes	No maintenance is needed at this time.	No	No
726	4	5/3/2024	60-day reinspection	No	Maintenance is needed (County)	No	Yes
727	363	5/3/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
728	596	5/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
729	660	5/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
730	950	5/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
731	206	5/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
732	641	5/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
733	605	5/7/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
734	525	5/7/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
735	526	5/7/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
736	686	5/7/2024	Routine	Yes	No maintenance is needed at this time.	No	No
737	888	5/7/2024	Routine	Yes	No maintenance is needed at this time.	No	No
738	618	5/8/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
739	657	5/9/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
740	43	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
741	172	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
742	281	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
743	480	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
744	666	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
745	682	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
746	818	5/9/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
747	210	5/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
748	435	5/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
749	665	5/9/2024	Routine	Yes	No maintenance is needed at this time.	No	No
750	99	5/13/2024	Routine	No	Maintenance is needed (County)	No	Yes
751	134	5/13/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
752	61	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
753	91	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
754	209	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
755	412	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
756	664	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
757	671	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
758	799	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
759	979	5/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
760	869	5/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
761	1014	5/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
762	473	5/14/2024	Routine	No	Maintenance is needed (County)	No	Yes
763	145	5/14/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
764	608	5/14/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
765	609	5/14/2024	Complaint Based	No	Maintenance is needed (County)	No	Yes
766	792	5/14/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes



No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
767	103	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
768	188	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
769	330	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
770	591	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
771	594	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
772	838	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
773	1036	5/14/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
774	308	5/14/2024	Routine	Yes	No maintenance is needed at this time.	No	No
775	1027	5/15/2024	Routine	No	Maintenance is needed (County)	No	Yes
776	105	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
777	164	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
778	196	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
779	197	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
780	311	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
781	695	5/15/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
782	407	5/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
783	409	5/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
784	443	5/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
785	862	5/15/2024	Routine	Yes	No maintenance is needed at this time.	No	No
786	577	5/16/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
787	1028	5/16/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
788	192	5/16/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
789	574	5/16/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
790	929	5/16/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
791	951	5/16/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
792	667	5/16/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
793	408	5/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
794	572	5/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
795	573	5/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
796	952	5/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
797	1072	5/16/2024	Routine	Yes	No maintenance is needed at this time.	No	No
798	185	5/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
799	651	5/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
800	1049	5/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
801	386	5/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
802	492	5/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
803	493	5/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
804	494	5/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
805	849	5/21/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
806	322	5/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
807	491	5/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
808	1010	5/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
809	1011	5/22/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
810	52	5/22/2024	Routine	Yes	No maintenance is needed at this time.	No	No
811	479	5/23/2024	Routine	No	Maintenance is needed (County)	No	Yes
812	332	5/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
813	422	5/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
814	801	5/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
815	802	5/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
816	960	5/23/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
817	842	5/23/2024	Routine	Yes	No maintenance is needed at this time.	No	No
818	840	5/28/2024	Routine	No	Maintenance is needed (County)	No	Yes
819	961	5/28/2024	Routine	No	Maintenance is needed (County)	No	Yes
820	46	5/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
821	474	5/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
822	544	5/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
823	841	5/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
824	802	5/28/2024	Other	No	Maintenance is needed (Owner)	Yes	No
825	159	5/28/2024	Routine	Yes	No maintenance is needed at this time.	No	No
826	545	5/28/2024	Routine	Yes	No maintenance is needed at this time.	No	No
827	177	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
828	193	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
829	194	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
830	309	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
831	341	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
832	342	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
833	347	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
834	476	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
835	913	5/29/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
836	527	5/29/2024	Complaint Based	Yes	No maintenance is needed at this time.	No	No
837	310	5/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
838	687	5/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
839	900	5/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
840	1015	5/29/2024	Routine	Yes	No maintenance is needed at this time.	No	No
841	915	5/30/2024	Routine	No	Maintenance is needed (County)	No	Yes
842	58	5/30/2024	Routine	No	Maintenance is needed (County)	No	Yes
843	522	5/30/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
844	523	5/30/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
845	933	5/30/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
846	956	5/30/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
847	461	5/30/2024	Routine	Yes	No maintenance is needed at this time.	No	No
848	292	5/31/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
849	1016	6/2/2024	Routine	No	Maintenance is needed (County)	No	Yes
850	592	6/3/2024	Routine	No	Maintenance is needed (County)	No	Yes
851	106	6/3/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
852	376	6/3/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
853	656	6/3/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
854	931	6/3/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
855	962	6/3/2024	60-day reinspection	Yes	No maintenance is needed at this time.	No	No
856	475	6/3/2024	Routine	Yes	No maintenance is needed at this time.	No	No
857	932	6/3/2024	Routine	Yes	No maintenance is needed at this time.	No	No
858	775	6/4/2024	Routine	No	Maintenance is needed (County)	No	Yes
859	782	6/4/2024	Routine	No	Maintenance is needed (County)	No	Yes
860	783	6/4/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
861	724	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
862	725	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
863	726	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
864	727	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
865	728	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
866	744	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
867	745	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
868	746	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
869	747	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
870	748	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
871	749	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
872	751	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
873	753	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
874	754	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
875	755	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
876	756	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
877	765	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
878	766	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
879	767	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
880	768	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
881	769	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
882	770	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
883	771	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
884	773	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
885	774	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
886	776	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
887	777	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
888	778	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
889	779	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
890	780	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
891	781	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
892	784	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
893	785	6/4/2024	Routine	Yes	No maintenance is needed at this time.	No	No
894	611	6/5/2024	Routine	No	Maintenance is needed (County)	No	Yes

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
895	639	6/5/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
896	787	6/5/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
897	923	6/5/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
898	1026	6/5/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
899	612	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
900	700	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
901	706	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
902	707	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
903	708	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
904	709	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
905	710	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
906	711	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
907	712	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
908	716	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
909	717	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
910	718	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
911	719	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
912	720	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
913	721	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
914	723	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
915	729	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
916	730	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
917	731	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
918	732	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
919	733	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
920	735	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
921	735	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
922	736	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
923	737	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
924	738	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
925	739	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
926	740	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
927	757	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
928	758	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
929	758	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
930	759	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
931	760	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
932	761	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
933	762	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
934	763	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
935	764	6/5/2024	Routine	Yes	No maintenance is needed at this time.	No	No
936	466	6/6/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
937	463	6/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
938	464	6/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
939	537	6/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
940	786	6/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
941	946	6/6/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
942	575	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
943	621	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
944	663	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
945	701	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
946	702	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
947	703	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
948	704	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
949	705	6/6/2024	Routine	Yes	No maintenance is needed at this time.	No	No
950	13	6/10/2024	Routine	No	Maintenance is needed (County)	No	Yes
951	14	6/10/2024	Routine	No	Maintenance is needed (County)	No	Yes
952	693	6/10/2024	Routine	No	Maintenance is needed (County)	No	Yes
953	1035	6/10/2024	Routine	No	Maintenance is needed (County)	No	Yes
954	9	6/10/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
955	1007	6/10/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
956	614	6/10/2024	Routine	Yes	No maintenance is needed at this time.	No	No
957	615	6/10/2024	Routine	Yes	No maintenance is needed at this time.	No	No
958	620	6/10/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
959	625	6/10/2024	Routine	Yes	No maintenance is needed at this time.	No	No
960	997	6/11/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
961	398	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
962	421	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
963	683	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
964	688	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
965	689	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
966	977	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
967	978	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
968	994	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
969	995	6/11/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
970	431	6/11/2024	Routine	Yes	No maintenance is needed at this time.	No	No
971	875	6/11/2024	Routine	Yes	No maintenance is needed at this time.	No	No
972	876	6/12/2024	Routine	No	Maintenance is needed (County)	No	Yes
973	550	6/12/2024	Routine	No	Maintenance is needed (County)	No	Yes
974	392	6/12/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
975	851	6/12/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
976	865	6/12/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
977	976	6/13/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
978	229	6/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
979	472	6/13/2024	Routine	Yes	No maintenance is needed at this time.	No	No
980	97	6/17/2024	Routine	No	Maintenance is needed (County)	No	Yes
981	5	6/17/2024	Routine	No	Maintenance is needed (County)	No	Yes
982	6	6/17/2024	Routine	No	Maintenance is needed (County)	No	Yes
983	107	6/17/2024	Routine	No	Maintenance is needed (County)	No	Yes
984	23	6/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
985	114	6/17/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
986	647	6/17/2024	Other	No	Meeting	Yes	No
987	93	6/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No
988	94	6/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No
989	636	6/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No
990	712	6/17/2024	Routine	Yes	No maintenance is needed at this time.	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
991	37	6/18/2024	Routine	No	Maintenance is needed (County)	No	Yes
992	585	6/18/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
993	35	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
994	36	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
995	38	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
996	42	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
997	304	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
998	502	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
999	635	6/18/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1000	350	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1001	351	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1002	603	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1003	713	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1004	714	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1005	715	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1006	722	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1007	734	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1008	741	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1009	742	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1010	743	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1011	750	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1012	752	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1013	772	6/18/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1014	109	6/20/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1015	175	6/20/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1016	283	6/20/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1017	356	6/20/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1018	173	6/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1019	174	6/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1020	273	6/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1021	282	6/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1022	358	6/20/2024	Routine	No	Maintenance is needed (Owner)	Yes	No



No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1023	78	6/20/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1024	26	6/24/2024	Routine	No	Maintenance is needed (County)	No	Yes
1025	102	6/24/2024	Routine	No	Maintenance is needed (County)	No	Yes
1026	586	6/24/2024	Routine	No	Maintenance is needed (County)	No	Yes
1027	77	6/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1028	319	6/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1029	320	6/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1030	486	6/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1031	959	6/24/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1032	76	6/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1033	101	6/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1034	485	6/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1035	487	6/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1036	958	6/24/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1037	231	6/25/2024	Routine	No	Maintenance is needed (County)	No	Yes
1038	344	6/25/2024	Routine	No	Maintenance is needed (County)	No	Yes
1039	168	6/25/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1040	594	6/25/2024	Complaint Based	No	Maintenance is needed (County/Owner)	Yes	Yes
1041	230	6/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1042	307	6/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1043	380	6/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1044	534	6/25/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1045	647	6/25/2024	Routine	No	No maintenance is needed at this time.	No	No
1046	24	6/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1047	25	6/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1048	419	6/25/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1049	40	6/26/2024	Routine	No	Maintenance is needed (County)	No	Yes
1050	111	6/26/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1051	152	6/26/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1052	357	6/26/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1053	110	6/26/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1054	153	6/26/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance	Comments	Minor Maintenance	Major Maintenance
1055	184	6/26/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1056	413	6/26/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1057	1001	6/27/2024	60-day reinspection	No	Maintenance is needed (County)	No	Yes
1058	348	6/27/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1059	404	6/27/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1060	626	6/27/2024	Routine	No	Maintenance is needed (County/Owner)	Yes	Yes
1061	48	6/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1062	160	6/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1063	349	6/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1064	381	6/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1065	418	6/27/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1066	20	6/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1067	21	6/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1068	417	6/27/2024	Routine	Yes	No maintenance is needed at this time.	No	No
1069	940	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1070	942	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1071	943	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1072	944	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1073	948	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1074	949	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No
1075	947	6/28/2024	Routine	No	Maintenance is needed (Owner)	Yes	No

## **Appendix I**

### **Privately-Maintained SWM Facilities – Inspection Summary**

## Privately Maintained SWM/BMP Facilities - Compliance Report FY24

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
1	5049	7/24/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
2	5215	8/3/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
3	5727	8/9/2023	Routine	No	Maintenance is needed.	Yes	No	No
4	5949	8/9/2023	Routine	No	Maintenance is needed.	Yes	No	No
5	5948	8/9/2023	Routine	No	Maintenance is needed.	Yes	No	No
6	6088	9/7/2023	Routine	No	Maintenance is needed.	Yes	No	No
7	5478	10/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
8	5479	10/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
9	5480	10/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
10	5481	10/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
11	5059	10/3/2023	Routine	No	Maintenance is needed.	Yes	No	No
12	6120	10/10/2023	Routine	No	Maintenance is needed.	Yes	No	No
13	5511	10/24/2023	Routine	No	Maintenance is needed.	Yes	No	No
14	5609	10/24/2023	Routine	No	Maintenance is needed.	Yes	No	No
15	5650	10/27/2023	Routine	No	Maintenance is needed.	Yes	No	No
16	5610	10/30/2023	Routine	No	Maintenance is needed.	Yes	No	No
17	5868	11/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
18	5779	11/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
19	5780	11/15/2023	Routine	No	Maintenance is needed.	Yes	No	No
20	5778	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
21	5773	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
22	5774	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
23	5775	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
24	5776	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
25	5777	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
26	5204	11/16/2023	Routine	No	Maintenance is needed.	Yes	No	No
27	5419	11/20/2023	Routine	No	Maintenance is needed.	Yes	No	No
28	6039	11/20/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
29	5016	12/12/2023	Routine	No	Maintenance is needed.	Yes	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
30	5209	12/18/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
31	5298	12/18/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
32	5909	12/18/2023	Routine	Yes	No maintenance needed at this time.	No	No	No
33	5126	1/3/2024	Routine	No	Maintenance is needed.	Yes	No	No
34	5055	1/4/2024	Routine	No	Maintenance is needed.	Yes	No	No
35	5384	1/4/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
36	5085	1/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
37	5154	1/8/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
38	5068	1/10/2024	Routine	No	Maintenance is needed.	Yes	No	No
39	5073	1/10/2024	Routine	No	Maintenance is needed.	Yes	No	No
40	5334	1/10/2024	Routine	No	Maintenance is needed.	Yes	No	No
41	5071	1/10/2024	Routine	No	Maintenance is needed.	Yes	No	No
42	5200	1/10/2024	Routine	No	Maintenance is needed.	Yes	No	No
43	5035	1/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
44	5036	1/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
45	5219	1/11/2024	Routine	No	Maintenance is needed.	Yes	No	No
46	5245	1/11/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
47	5069	1/12/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
48	5496	1/26/2024	Routine	No	Maintenance is needed.	Yes	No	No
49	5514	1/26/2024	Routine	No	Maintenance is needed.	Yes	No	No
50	5513	1/26/2024	Routine	No	Maintenance is needed.	Yes	No	No
51	5607	1/29/2024	Routine	No	Maintenance is needed.	Yes	No	No
52	5606	1/29/2024	Routine	No	Maintenance is needed.	Yes	No	No
53	5605	1/29/2024	Routine	No	Maintenance is needed.	Yes	No	No
54	5676	1/30/2024	Routine	No	Maintenance is needed.	Yes	No	No
55	5675	1/30/2024	Routine	No	Maintenance is needed.	Yes	No	No
56	5954	1/30/2024	Routine	No	Maintenance is needed.	Yes	No	No
57	5952	1/30/2024	Routine	No	Maintenance is needed.	Yes	No	No
58	5953	1/30/2024	Routine	No	Maintenance is needed.	Yes	No	No
59	5157	1/30/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
60	5877	1/31/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
61	5679	2/1/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
62	5929	2/2/2024	Routine	No	Maintenance is needed.	Yes	No	No
63	5935	2/2/2024	Routine	No	Maintenance is needed.	Yes	No	No
64	6211	2/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
65	6219	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
66	6220	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
67	6221	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
68	6216	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
69	6215	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
70	6214	3/5/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
71	6212	3/6/2024	Routine	No	Maintenance is needed.	Yes	No	No
72	6213	3/6/2024	Routine	No	Maintenance is needed.	Yes	No	No
73	6217	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
74	5710	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
75	5698	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
76	5792	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
77	5793	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
78	6024	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
79	5214	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
80	6170	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
81	6169	3/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
82	5822	3/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
83	5917	3/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
84	5853	3/13/2024	Routine	No	Maintenance is needed.	Yes	No	No
85	6218	3/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
86	5918	3/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
87	5745	3/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
88	5744	3/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
89	5743	3/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
90	5742	3/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
91	5824	3/19/2024	Routine	No	Maintenance is needed.	Yes	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
92	5823	3/19/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
93	5056	3/20/2024	Routine	No	Maintenance is needed.	Yes	No	No
94	6082	3/20/2024	Routine	No	Maintenance is needed.	Yes	No	No
95	6081	3/20/2024	Routine	No	Maintenance is needed.	Yes	No	No
96	6080	3/20/2024	Routine	No	Maintenance is needed.	Yes	No	No
97	6083	3/20/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
98	5246	3/21/2024	Routine	No	Maintenance is needed.	Yes	No	No
99	5005	3/21/2024	Routine	No	Maintenance is needed.	Yes	No	No
100	5700	4/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
101	5701	4/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
102	5604	4/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
103	6105	4/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
104	5602	4/16/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
105	5603	4/16/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
106	5359	4/16/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
107	5389	4/16/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
108	6106	4/16/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
109	6167	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
110	5982	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
111	6080	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
112	6080	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
113	5143	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
114	5141	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
115	5899	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
116	5900	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
117	5898	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
118	5270	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
119	5269	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
120	5216	4/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
121	6081	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
122	6168	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
123	5169	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
124	5170	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
125	5491	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
126	5043	4/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
127	5119	4/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
128	5213	4/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
129	5205	4/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
130	5072	4/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
131	5467	4/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
132	5346	4/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
133	5371	4/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
134	5873	4/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
135	5662	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
136	5368	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
137	5651	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
138	5654	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
139	5653	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
140	5652	4/19/2024	Routine	No	Maintenance is needed.	Yes	No	No
141	5212	4/19/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
142	5381	4/19/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
143	5382	4/19/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
144	6084	4/19/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
145	5586	4/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
146	5337	4/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
147	5585	4/23/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
148	5037	4/23/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
149	5686	4/25/2024	Routine	No	Maintenance is needed.	Yes	No	No
150	5682	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
151	5683	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
152	5684	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
153	5685	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No



No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
154	5680	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
155	5681	4/25/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
156	6167	4/29/2024	Routine	No	Maintenance is needed.	Yes	No	No
157	5749	4/29/2024	Routine	No	Maintenance is needed.	Yes	No	No
158	5277	5/1/2024	Routine	No	Maintenance is needed.	Yes	No	No
159	5526	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
160	5988	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
161	5989	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
162	5129	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
163	5875	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
164	6097	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
165	6096	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
166	6097	5/7/2024	Routine	No	Maintenance is needed.	Yes	No	No
167	5674	5/7/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
168	5667	5/7/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
169	5097	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
170	5096	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
171	5575	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
172	5671	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
173	5139	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
174	5137	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
175	5138	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
176	5206	5/8/2024	Routine	No	Maintenance is needed.	Yes	No	No
177	5784	5/8/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
178	5783	5/8/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
179	5770	5/8/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
180	5845	5/9/2024	Routine	No	Maintenance is needed.	Yes	No	No
181	5844	5/9/2024	Routine	No	Maintenance is needed.	Yes	No	No
182	5547	5/9/2024	Routine	No	Maintenance is needed.	Yes	No	No
183	5493	5/9/2024	Routine	No	Maintenance is needed.	Yes	No	No
184	5841	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
185	5840	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
186	5839	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
187	5843	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
188	5842	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
189	5846	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
190	5847	5/9/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
191	5405	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
192	5407	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
193	5830	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
194	5829	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
195	5828	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
196	5406	5/10/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
197	6147	5/15/2024	Routine	No	Maintenance is needed.	Yes	No	No
198	6149	5/15/2024	Routine	No	Maintenance is needed.	Yes	No	No
199	6149	5/15/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
200	5094	5/15/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
201	6139	5/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
202	6138	5/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
203	5473	5/16/2024	Routine	No	Maintenance is needed.	Yes	No	No
204	6004	5/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
205	6150	5/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
206	6151	5/17/2024	Routine	No	Maintenance is needed.	Yes	No	No
207	6003	5/17/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
208	5059	5/22/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
209	5277	5/22/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
210	5141	5/22/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
211	5708	5/22/2024	Routine	No	Maintenance is needed.	Yes	No	No
212	5709	5/22/2024	Routine	No	Maintenance is needed.	Yes	No	No
213	5165	5/22/2024	Routine	No	Maintenance is needed.	Yes	No	No
214	5197	5/22/2024	Routine	No	Maintenance is needed.	Yes	No	No
215	5736	5/22/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
216	5738	5/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
217	5739	5/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
218	5737	5/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
219	5191	5/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
220	6152	5/23/2024	Routine	No	Maintenance is needed.	Yes	No	No
221	6153	5/23/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
222	6157	5/23/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
223	6061	5/23/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
224	5712	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
225	5731	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
226	5732	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
227	5733	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
228	5734	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
229	5735	5/24/2024	Routine	No	Maintenance is needed.	Yes	No	No
230	5072	6/3/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
231	6227	6/12/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
232	6228	6/12/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
233	6229	6/12/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
234	6233	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
235	6232	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
236	6231	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
237	6234	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
238	6237	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
239	6238	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
240	6236	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
241	6235	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
242	6240	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
243	6242	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
244	6239	6/13/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
245	6224	6/14/2024	Routine	No	Maintenance is needed.	Yes	No	No
246	6222	6/14/2024	Routine	No	Maintenance is needed.		No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
247	6223	6/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
248	6225	6/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
249	6226	6/14/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
250	5853	6/17/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
251	5792	6/17/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
252	5793	6/17/2024	60-day reinspection	No	Maintenance is needed.	Yes	No	No
253	6024	6/17/2024	60-day reinspection	Yes	No maintenance needed at this time.	No	No	No
254	5805	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
255	5601	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
256	5599	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
257	5600	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
258	5598	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
259	5597	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
260	5548	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
261	5867	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
262	5866	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
263	5865	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
264	5864	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
265	5858	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
266	5859	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
267	5863	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
268	5862	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
269	5861	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
270	5860	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
271	5798	6/18/2024	Routine	No	Maintenance is needed.	Yes	No	No
272	5804	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
273	5801	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
274	5800	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
275	5802	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
276	5803	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
277	5799	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

No. Count	Facility ID	Inspection Date	Inspection Type	Facility In Compliance?	Notes	Owner 60 Day Ltr (y/n)	CAO 30 Day Ltr	CAO 15 Day Ltr
278	5797	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
279	5796	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
280	5794	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No
281	5795	6/18/2024	Routine	Yes	No maintenance needed at this time.	No	No	No

## **Appendix J**

### **Summary of SWM Facilities Added to Inventory**

**Facilities added to County Inventory in FY2024**

Facility ID	Facility Type	Facility Description	Inventory Date	Maintenance	Comments	Swm Agreement	VAHUC 6	VAHUC12 Name	Plan Name	Status	Drainage Area	Latitude	Longitude
1054	BMP	U	9/7/2023	P	CONTECH CDS2020-5-C	N	PL34	Broad Run-Rocky Branch	PRINCE WILLIAM COUNTY FIRE STATION 22	NR	0.16	-77.5410	38.7939
1055	BMP	O	9/7/2023	P	ADS ENVIROHOOD	N	PL34	Broad Run-Rocky Branch	PRINCE WILLIAM COUNTY FIRE STATION 22	NR	0.39	-77.5412	38.7933
1056	SWMP/BMP	U	9/7/2023	P	STORMTECH SC-740 W/ 2 ISOLATOR CHAMBERS	N	PL34	Broad Run-Rocky Branch	PRINCE WILLIAM COUNTY FIRE STATION 22	NR	5.08	-77.5417	38.7933
1057	SWMP/BMP	D	2/16/2024	P	20"x4.5" RISER, 3.1" BMP ORIFICE AT RISER	N	PL43	Little Bull Run	DOMINION VALLEY COUNTRY CLUB SECTION 53	R	111.32	-77.6419	38.8613
1058	SWMP/BMP	W	2/29/2024	P	PWSE=227.97', 5'x5' RISER W/ SLUICE GATE	N	PL46	Lower Bull Run	WALKER'S STATION	R	21.47	-77.4451	38.7602
1059	SWMP/BMP	D	3/8/2024	P	4" BMP ORIFICE AT RISER	N	PL32	Broad Run-Catletts Branch	HAYMARKET BYPASS (SOMERSET CROSSING DR) PIP	R	22.34	-77.6535	38.8066
1060	SWMP/BMP	D	3/8/2024	P	3" BMP ORIFICE AT RISER	N	PL32	Broad Run-Catletts Branch	HAYMARKET BYPASS (SOMERSET CROSSING DR) PIP	R	12.69	-77.6406	38.8057
1061	SWMP/BMP	D	4/1/2024	P	2.5" BMP ORIFICE AT RISER	N	PL51	Powells Creek	EAGLES POINTE EAST LANDBAY C SECTION 11	R	31.62	-77.3059	38.6061
1062	SWMP/BMP	D	4/1/2024	P	1.45" BMP ORIFICE AT RISER	N	PL51	Powells Creek	EAGLES POINTE EAST LANDBAY C SECTION 10	R	7.70	-77.3066	38.6043
1063	SWMP/BMP	D	4/1/2024	P	1.25" BMP ORIFICE AT RISER	N	PL51	Powells Creek	EAGLES POINTE EAST LANDBAY C SECTION 8	R	7.92	-77.3076	38.6032
1064	SWMP/BMP	W	4/18/2024	P	PWSE=259.97', 2" BMP ORIFICE AT RISER	N	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	17.05	-77.4467	38.7517
1065	SWMP/BMP	D	4/18/2024	P	5" BMP ORIFICE AT RISER	N	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 2	R	10.64	-77.4456	38.7545
1066	SWMP/BMP	D	4/18/2024	P	4.5" BMP ORIFICE AT RISER	N	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY B SECTION 1	R	11.52	-77.4440	38.7489
1067	SWMP/BMP	W	6/6/2024	P	PWSE=242.81', WEIR SERVES AS CONTROL STRUC	N	PL44	Middle Bull Run	BLACKBURN - BALLS FORD ROAD & ASHTON AVENUE	R	121.90	-77.5254	38.7961
1068	BMP	B	6/17/2024	P	BIORETENTION AREA	N	PL47	Occoquan River-Occoquan Reservoir	HICKORY FALLS	R	2.23	-77.3442	38.6887
1069	SWMP/BMP	D	6/17/2024	P	3" BMP ORIFICE AT EW	N	PL47	Occoquan River-Occoquan Reservoir	HICKORY FALLS	R	5.09	-77.3438	38.6890
1070	BMP	B	6/17/2024	P	BIORETENTION AREA	N	PL47	Occoquan River-Occoquan Reservoir	HICKORY FALLS	R	2.59	-77.3428	38.6910
1071	SWMP/BMP	D	6/17/2024	P	3" BMP ORIFICE AT EW	N	PL47	Occoquan River-Occoquan Reservoir	HICKORY FALLS	R	5.25	-77.3425	38.6914
5917	CSWMP/BMP	W	6/21/2024	C	PWSE=331.42', 8" BMP ORIFICE AT RISER	Y	PL49	Neabsco Creek	APOLLO RESIDENTIAL	NR	33.12	-77.3574	38.6767
6212	CSWMP/BMP	U	11/2/2023	C	STORMTECH SC-740 W/ 2 ISOLATOR CHAMBERS	Y	PL46	Lower Bull Run	AUTOTRADEMARK	NR	1.58	-77.4471	38.7903
6213	CBMP	O	11/2/2023	C	PERMEABLE PAVEMENT W/ 4" UNDERDRAIN(S)	Y	PL46	Lower Bull Run	AUTOTRADEMARK	NR	1.58	-77.4469	38.7904
6214	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY A	R	4.49	-77.4483	38.7553
6215	CSWMP/BMP	U	2/5/2024	C	STORMTECH MC-3500 W/ 3 ISOLATOR CHAMBERS	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY A	R	4.49	-77.4482	38.7553
6216	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION I	R	2.11	-77.4473	38.7567
6217	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION I	R	2.40	-77.4468	38.7570
6218	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION I	R	1.81	-77.4477	38.7572
6219	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION II	R	3.29	-77.4459	38.7573
6220	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION II	R	1.37	-77.4453	38.7579
6221	CBMP	B	2/5/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	RICHMOND STATION LANDBAY B SECTION II	R	0.83	-77.4446	38.7584
6222	CSWMP/BMP	U	2/26/2024	C	STORMKEEPER SK75 W/ 2 SEDIMENT STRIPS	Y	PL34	Broad Run-Rocky Branch	BETHLEHEM CONTRACTORS OFFICE	NR	5.15	-77.5349	38.7882
6223	CBMP	B	2/29/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	WALKER'S STATION	R	2.01	-77.4439	38.7619
6224	CBMP	B	2/29/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	WALKER'S STATION	R	1.04	-77.4443	38.7585
6225	CBMP	U	2/29/2024	C	6"x4" FILTERRA	Y	PL46	Lower Bull Run	WALKER'S STATION	R	0.18	-77.4441	38.7625
6226	CBMP	U	2/29/2024	C	6"x4" FILTERRA	Y	PL46	Lower Bull Run	WALKER'S STATION	R	0.19	-77.4440	38.7621
6227	CBMP	T	3/21/2024	C	INFILTRATION TRENCH W/ PERFORATED PIPE	N	PL41	Occoquan River-Lake Jackson	GEORGE HELLWIG MEM PARK SYNTHETIC TURF FIELD	NR	1.73	-77.4523	38.6382
6228	CBMP	T	3/21/2024	C	INFILTRATION TRENCH W/ PERFORATED PIPE	N	PL41	Occoquan River-Lake Jackson	GEORGE HELLWIG MEM PARK SYNTHETIC TURF FIELD	NR	2.22	-77.4531	38.6389
6229	CBMP	T	3/21/2024	C	INFILTRATION TRENCH W/ PERFORATED PIPE	N	PL41	Occoquan River-Lake Jackson	GEORGE HELLWIG MEM PARK SYNTHETIC TURF FIELD	NR	2.25	-77.4529	38.6388
6230	CSWMP/BMP	D	3/27/2024	C	5'x4" RISER, 4" BMP ORIFICE AT RISER	Y	PL34	Broad Run-Rocky Branch	TRUCKERS PARKING AND REPAIR SHOP FACILITY	NR	3.74	-77.5273	38.7317
6231	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	6.90	-77.4458	38.7506
6232	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	0.81	-77.4450	38.7509
6233	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	3.52	-77.4458	38.7520
6234	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	0.79	-77.4456	38.7524
6235	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	6.46	-77.4464	38.7543
6236	CSWMP/BMP	U	4/18/2024	C	STORMTECH SC-740 W/ 3 ISOLATOR CHAMBERS	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 1	R	6.46	-77.4463	38.7544
6237	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 2	R	1.26	-77.4456	38.7532
6238	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY A SECTION 2	R	10.64	-77.4451	38.7544
6239	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY B	R	2.17	-77.4427	38.7487
6240	CBMP	B	4/18/2024	C	BIORETENTION AREA	Y	PL46	Lower Bull Run	CAYDEN RIDGE LANDBAY B	R	2.55	-77.4429	38.7497
6241	CSWMP/BMP	D	5/9/2024	C	WEIR SERVES AS CONTROL STRUCTURE	Y	PL51	Powells Creek	HARBOR STATION - POTOMAC RIVER BLVD PHASE 1	R	114.27	-77.2866	38.5774
6242	CSWMP/BMP	D	5/14/2024	C	2.5" BMP ORIFICE AT EW	Y	PL34	Broad Run-Rocky Branch	MANASSAS CORPORATE CENTER DATA CENTER BLDG 2	NR	15.36	-77.5010	38.7240
6243	CSWMP/BMP	D	5/14/2024	C	0.875" BMP ORIFICE AT EW	Y	PL34	Broad Run-Rocky Branch	MANASSAS CORPORATE CENTER DATA CENTER BLDG 2	NR	2.15	-77.4994	38.7222
6244	CSWMP/BMP	U	5/24/2024	C	CMP CHAMBERS W/ 2 ISOLATOR CHAMBERS	Y	PL43	Little Bull Run	HAYMARKET CROSSING	R	10.57	-77.6440	38.8261

6245	CBMP	U	6/11/2024	C	CONTECH CDS2015-4-C	Y	PL44	Middle Bull Run	7-ELEVEN AT SUDLEY ROAD AND LOMOND DRIVE	NR	0.40	-77.5124	38.7827
6246	CBMP	U	6/11/2024	C	CONTECH CDS2015-4-C	Y	PL44	Middle Bull Run	7-ELEVEN AT SUDLEY ROAD AND LOMOND DRIVE	NR	0.55	-77.5124	38.7825
6247	CSWMP/BMP	U	6/11/2024	C	29"x45" RCP CHAMBERS W/ 2 WEIR WALLS	Y	PL44	Middle Bull Run	7-ELEVEN AT SUDLEY ROAD AND LOMOND DRIVE	NR	1.16	-77.5124	38.7826
6248	CSWMP/BMP	U	6/27/2024	C	STORMTECH MC-4500 W/ ISOLATOR CHAMBER	Y	PL34	Broad Run-Rocky Branch	INDEPENDENCE PARCEL "B-1"	NR	1.76	-77.5476	38.7747
6249	CSWMP/BMP	U	6/27/2024	C	STORMTECH MC-4500 W/ 2 ISOLATOR CHAMBERS	Y	PL34	Broad Run-Rocky Branch	INDEPENDENCE PARCEL "B-1"	NR	1.76	-77.5482	38.7740
6250	CSWMP/BMP	U	6/28/2024	C	9 CMP CHAMBERS W/ MANIFOLD	Y	PL34	Broad Run-Rocky Branch	6900 WELLINGTON ROAD	NR	3.99	-77.5610	38.7808



## **Appendix K**

### **Community Partners' Annual Reports**



# Northern Virginia Clean Water Partners

Annual Summary of Results  
July 1, 2023 - June 30, 2024

This summary was produced by the Northern Virginia Regional Commission on behalf of the 2024 Clean Water Partners.



## Stormwater Pollution in Northern Virginia

Water bodies in Northern Virginia, including the region's numerous streams, lakes, and rivers, provide a range of environmental, social, and economic benefits to surrounding communities. However, when waterways are polluted and water quality becomes impaired, their key resources are reduced and result in negative impacts to both humans and the natural environment.

Polluted stormwater runoff is the number one cause of poor water quality in Northern Virginia's waterways. When it rains and snows, water runs off streets, driveways, yards and parking lots and mixes with pollutants, such as litter, fertilizer, pet waste, road salt, and auto fluids. These pollutants then enter storm drains on the street and are discharged directly into nearby streams.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners joined together to improve residents' knowledge and behaviors through an ongoing public education campaign.

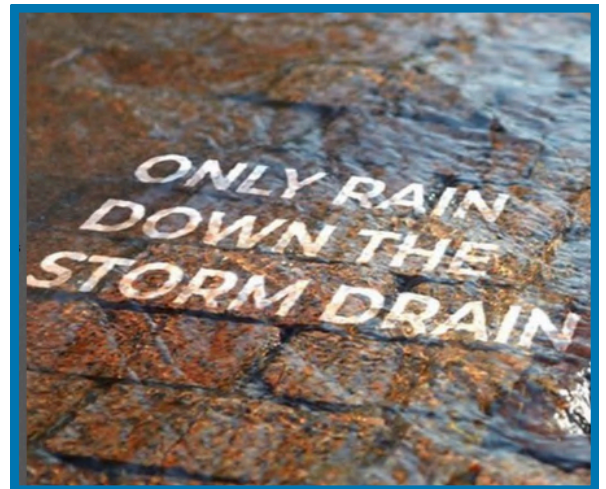
## About the Partnership

The Northern Virginia Clean Water Partners (NVCWP) is composed of a group of local governments, drinking water and sanitation authorities, and businesses that share the common goals to keep Northern Virginia residents healthy and safe by reducing the amount of pollution from stormwater runoff that reaches local creeks and rivers, and empower individuals to take action to reduce pollution.

To meet these goals, the partners work together to:

- Identify high priority water quality issues for the region
- Identify the target audience(s) for outreach
- Educate the region's residents on simple ways to reduce pollution around their homes
- Monitor changes in behavior through surveys and other data collection techniques
- Pilot new cost-effective opportunities for public outreach and education

Membership is voluntary and each member makes an annual contribution to fund the program. By working together, the partners are able to leverage their funds to develop and implement a range of bilingual education and outreach strategies throughout Northern Virginia.



**"Only rain down the storm drain"  
- Partnership Motto**

The 2024 campaign helped to satisfy MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

For more information visit [onlyrain.org](https://onlyrain.org)

## 2024 Campaign Overview

The Northern Virginia Clean Water Partners identified the following water quality issues to highlight in their 2024 campaign:

- **Nutrients (Phosphorus and Nitrogen)**
- **Bacteria**
- **Salt**
- **Illicit Discharges (e.g., pesticides, motor oil, etc.)**

Target audiences for these issues include pet owners, winter salt applicators, home mechanics, and residents with a lawn or garden. To reach these audiences, the campaign used a combination of social media, television and other paid advertising, printed materials, and the Only Rain website to distribute messaging that encourages pollution reduction practices. The partners also tabled at local events and led other in-person activities throughout the year to engage residents and raise campaign awareness.

The 2024 campaign also continued to update outreach and engagement programming through a number of new social marketing tools, including:

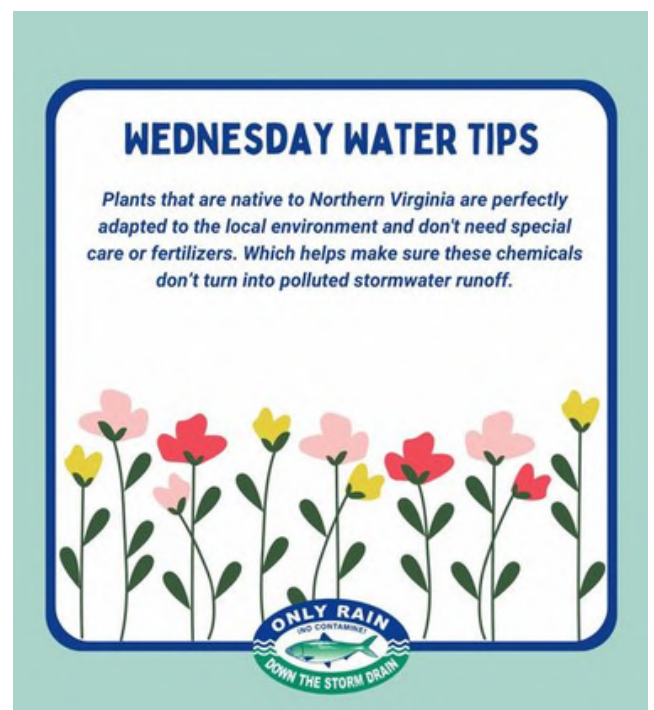
- Enhanced website features
- New social media content, including “Wednesday Water Tips”
- A new campaign video
- New forms of paid advertising

## Social Media Highlights

In 2024, the NVCWP continued to grow its social media presence over a number of platforms to reach the campaign's target audiences.

The partners created Facebook and Twitter/X accounts as a part of their 2020 campaign strategy. Since July 1, 2023, the Facebook page has gained 64 new followers for a total of 612 current followers. During the campaign year, the page included 276 posts with 624 post engagements and 188 post link clicks. The Twitter/X account currently has 193 followers with 28 new followers since 2023. Over the year, the account had 262 tweets, 1,093 tweet engagements, and 91 link clicks.

In December 2022, the partners created an Instagram account to engage additional members of the public. The Instagram account added 69 followers and created 231 posts during the 2024 campaign. In July 2023, the NVCWP also added a Threads account, which gained 65 followers and shared 101 posts over the year.

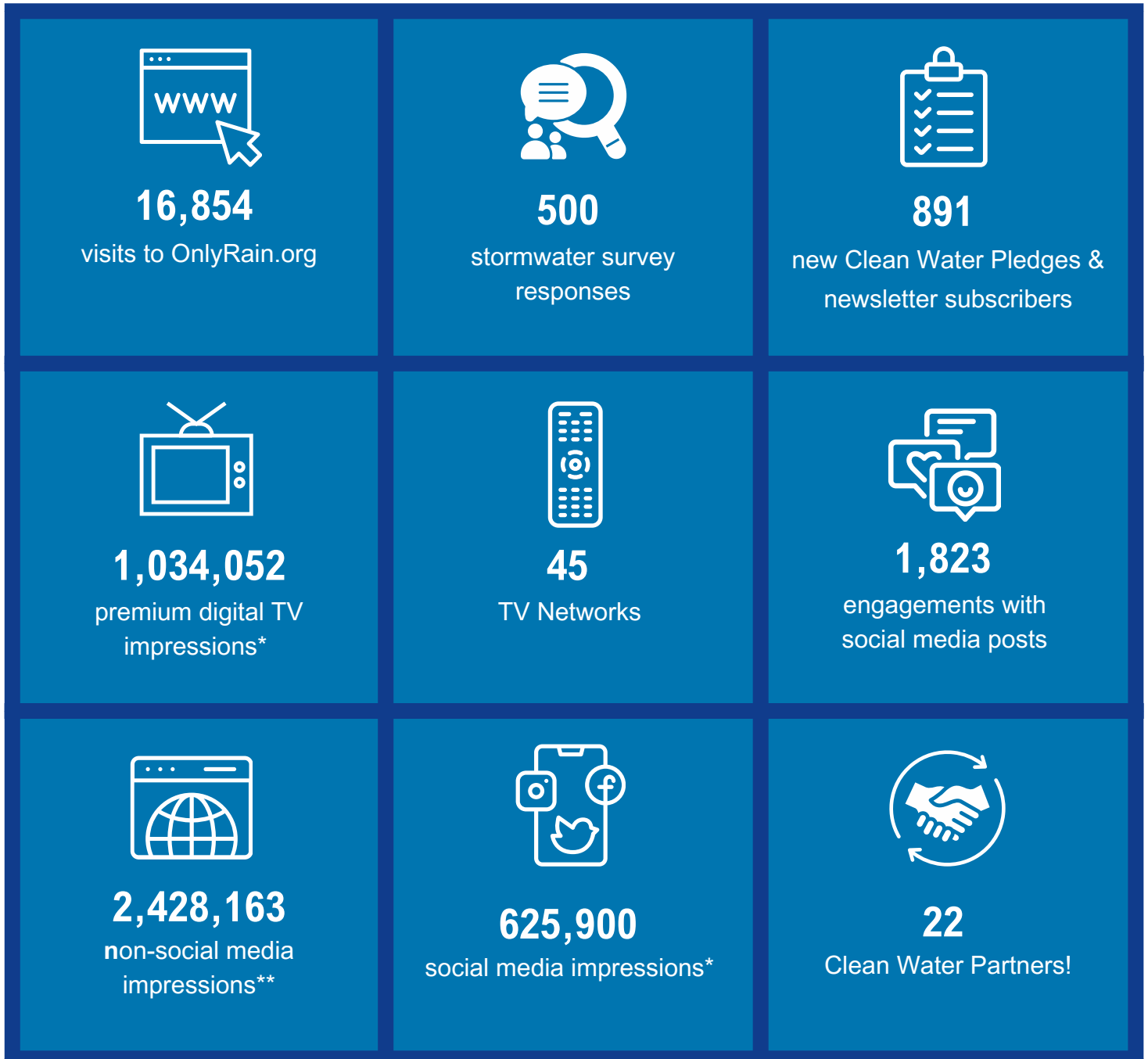


**Top reaching Instagram and Facebook image in 2024**

## Video Advertisements

The campaign engages residents through video advertisements that focus on residential stormwater management actions. In 2024, the campaign aired both two videos, one of which also aired in Spanish, on a combination of 45 English and Spanish language networks for a total of 12,354 ads aired and 1,034,052 impressions, or views.

## Key Facts and Figures for 2024



\*Impressions are the number of times an ad appeared on a TV, computer, or other electronic device.

\*\*Non-social media impressions include impressions on Google Search, Reddit, and other websites outside of Twitter/X and Meta platforms (Facebook, Instagram, and Threads).

# Annual Stormwater Survey

## Survey Goal

The Northern Virginia Clean Water Partners conduct an annual online survey of approximately 500 residents in the region to better understand their stormwater-related knowledge and behaviors over time. Results help the partners to assess their campaign's effectiveness and direct future education and outreach efforts.

## Results

### Stormwater and Watershed Knowledge

Similar to 2023 (69%), 71% of Northern Virginia residents reported that they are familiar with the term "watershed". When asked which watershed they live in, 39% of residents selected that they live within the Potomac River watershed, and 27% selected that they live in the Chesapeake Bay watershed. Responses to this question have not significantly changed over the past five years.

When asked where stormwater eventually ends up, 32% of residents responded that it only goes to the Potomac River or Chesapeake Bay, and 20% selected that it only goes to a wastewater treatment plant. 41% of residents reported that it ends up at both destinations.

### Information and Advertising

28% of residents reported that they have seen or received at least some form of information about reducing water pollution in the past 12 months. Of those who were aware of an event for water quality improvement, such as stream clean ups or storm drain stenciling, 54% reported participating in the event. While this response represents a decrease from 2023 (69%), event participation has still significantly increased since 2018.

33% of survey respondents selected that they were familiar with the NVCWP prior to the survey, and when shown the "only rain down the storm drain" fish logo, 54% of residents reported having previously seen the logo. Both responses represent a decrease from 2023. However, similar to last year, 71% stated that they trust information from the campaign, and 67% would contact the NVCWP if they had questions about water quality.

This year's survey results indicate that while recognition of the NVCWP and general water quality activities in the region have declined, the majority of residents continue to have positive perceptions of the campaign and an interest in taking part in related projects. As such, future programming will not only aim to bring greater awareness to the campaign, but also to other water quality improvement initiatives in the region that residents can participate in.





## Campaign Impact

Residents who have viewed at least one NVCWP ad were asked a series of questions about the impact of the ads, including ways that their behaviors have changed since then. Over 80% of respondents reported that they now have a greater understanding of pet waste, fertilizer, and motor oil impacts on local water quality. Further, nearly three-quarters (73%) of respondents stated that they now pick up more pet waste, 82% fertilize less frequently, and 81% now dispose of motor oil properly. As in previous years, the survey reflects that NVCWP ads promote positive behaviors to reduce stormwater pollution. In addition, over 75% of respondents noted that they were already taking at least one of the actions to reduce pollution, suggesting that the ads also serve as valuable reinforcements for these behaviors.

## Resident Behaviors

The survey asked specific questions to understand changes in Northern Virginia residents' behaviors around relevant stormwater management and pollution issues, including pet waste, lawn and garden care, car fluids, and household hazardous waste.



In a decrease from 2023 (51%), 43% of residents reported owning at least one dog. Of those that walk their dog, 87% stated that they always or usually pick up their dog's waste during walks. The majority also reported picking up after their pet in their own yard on a daily basis (59%), while 24% pick up on a weekly basis.

When asked why they pick up their dog's waste, 22% of residents responded that their actions were due to water pollution concerns, and 18% selected that "it's what good neighbors do". In a decrease from 2023 (25%), 19% of residents noted picking up their pet's waste due to a city or county ordinance.

In 2024, there was a slight shift in reasons that residents pick up pet waste, while general behaviors remained consistent from previous years. Related messaging should continue to encourage individuals to pick up waste in their yard more frequently to minimize pollution.



When asked about reporting potential water pollution, 49% of residents stated that they know who to contact, and in an increase from the past five years, about two-thirds (67%) selected that they would probably or definitely contact someone to report a potential source of water pollution.

Of those who were equally likely to call and not to call, as well as those that would not call, there was a decrease in those that selected their reason being that they would prefer not to communicate with officials or authorities (25% in 2024 compared to 32% in 2023), and a slight increase in those that selected being "too busy" (22% in 2024 compared to 18% in 2023).



novacwp #DYK there's a stormwater hotline for reporting what goes down the storm drain? If you see someone dumping waste down the drain or water flowing in the drain when it hasn't rained in 72 hours, call your local hotline.



60% of residents reported knowing if their locality has a specific drop-off location for household hazardous waste (HHW). This response did not significantly change from 2023 (61%). While the majority of residents continue to know of drop-off sites, additional education should focus on types of HHW that can be taken to these locations to promote better trash and recycling practices.



Survey respondents were provided descriptions of a rain barrel, rain garden, and conservation landscaping and asked whether they have heard of these stormwater management features and would be interested in installing one on their property. In general, 2024 results showed slight decreases in familiarity, ownership, and interest in all three forms of stormwater management compared to 2023.

Residents were more likely to already have conservation landscaping on their property than the other two stormwater management features. Yet, as in prior years, residents were most familiar with rain barrels, and 25% reported already owning at least one on their property. Residents were least familiar with rain gardens, although one-third (33%) noted an interest in having one in their yard.



As a new survey topic, respondents were asked questions to measure attitudes and behaviors related to snow and ice maintenance, including the use of deicers (e.g., road salt) and abrasives (e.g., sand). Notably, during snowy and icy conditions, 34% of residents stated that they always or frequently apply deicers at their residence, and 17% always or frequently apply an abrasive. Of those that use a deicer, residents tend to most frequently apply before (31%) or after (32%) storm events, while 15% selected that it varies or depends on the circumstance.

Respondents were also asked about their perceptions, positive and negative, of the impacts from road salt application. The majority of residents feel that salt has a positive impact on emergency vehicle safety (62%), motorist safety (65%), and pedestrian safety (69%). However, only 41% of residents also feel that it has a negative impact on local waterways.

These results stress that while residents have a positive perception of salt application for public safety, they do not necessarily recognize its negative impacts on the environment and drinking water. As such, future education efforts should focus on highlighting when to apply salt to maximize safety and also underscore the importance of smart salting practices to protect the health of local waterways.







Of those that own or lease a car, 64% of residents reported taking their vehicle to a commercial car wash, while 37% wash their vehicle at home. Responses to this question have fluctuated over the past 5 years, in which only 21% of residents reported washing their car at home in 2023 and 43% reported doing so in 2022.

For those that wash their cars or trucks at home, residents continue to most frequently clean their vehicle three to four times a year (27%), while 3% wash less than once a year and 13% wash more than 12 times a year. To clean their vehicle, over half of residents reported using an environmentally-friendly detergent (52%) and washing on pervious surfaces, including grass, gravel, and/or dirt (53%).

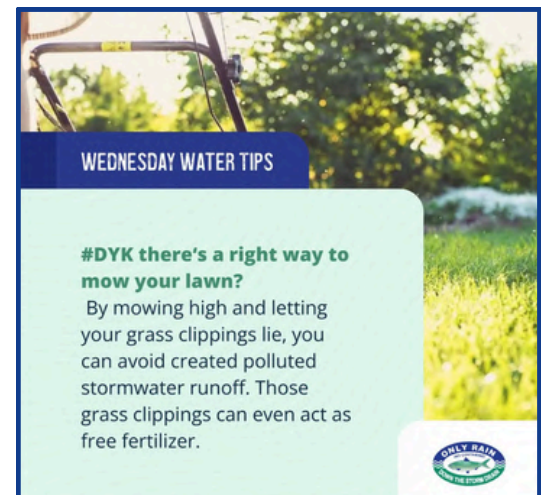
60% of residents reported going to an auto center for an oil change, and nearly a quarter (24%) take their old motor oil to a gas station or hazmat facility for recycling. In addition, 15% of respondents noted that they store their used motor oil in their garage, place it in the trash, or dump it down the storm drain, sink or onto the ground.

With multi-year increases in residents that take their motor oil to facilities for recycling, as well as those that store their oil or put it in the trash, future education should include safe storage practices and easily accessible information on recycling locations in the region to ensure that the oil does not eventually end up in the environment.



Two-thirds (66%) of residents with a lawn or garden stated that they use a lawn care service at least once a year. Similar to 2023, 74% of residents with a lawn or garden reported using fertilizer at least once a year. However, there was a slight increase in residents that fertilize only when a soil test recommends it (11%), and those that never fertilize (15%). Moreover, over the past five years, there has also been an increase in residents who fertilize twice per year compared to just once a year, which indicates the need for additional outreach to reinforce the use of soil tests to determine if and when fertilizing is actually necessary to support healthy lawn care.

When asked how they dispose of their grass clippings, the highest percentage of respondents (36%) reported that they put the clippings in compost or recycling bags for pick up. 21% bag and place clippings in the trash, and 32% leave it on the lawn or garden. If grass clippings ended up in the street, 66% of residents reported sweeping or blowing them back into their lawn, while 17% leave them in the street and 18% sweep them into the storm drain.



## 2025 Campaign Goals

The Clean Water Partners will continue to identify and implement new strategies to better engage Northern Virginia residents and improve their stormwater-related knowledge and behaviors in 2025. The next campaign year will include an updated quarterly e-newsletter, improved website content, new fact sheets and infographics, and more!

Northern Virginia Clean Water Partners

# 2024 Survey at a Glance

The Northern Virginia Clean Water Partners (NVCWP) conduct an annual survey to better understand Northern Virginia residents' stormwater knowledge and behaviors in order to inform future education and outreach efforts.

## Watershed Knowledge



About 1/4 (27%) of residents believe they live in the Chesapeake Bay watershed.



71% of residents were familiar with the term "watershed" prior to the survey.

## Stormwater Runoff



About 1/3 of residents believe that stormwater ends up in the Chesapeake Bay or Potomac River, while 20% think that it goes to a wastewater treatment plant. 41% think that it ends up at both destinations.

## Automobile Care

64% of vehicle owners go to a commercial car wash at least once a year. Of those that clean their car at home, nearly 3/4 report only using water or environmentally-friendly detergent.



## Advertising Reach

54% of residents recognize the Clean Water Partners logo. When asked about perceptions of NVCWP ads, over 80% trust the information conveyed and believe the ads are important.

## Lawn Care

74%

of residents fertilize their lawn or garden at least once a year. 26% either never fertilize or only fertilize when a soil test recommends it.

## Conservation Landscaping

1/4

of residents already have a rain barrel, rain garden, and/or conservation landscaping on their property. Over 1/3 are interested in obtaining one or more for their property.

## Winter Salt

1/3

of residents always or frequently apply deicer (e.g., salt) at their residence during snowy or icy conditions.

## Dog Owners



87% of dog owners report always or usually picking up their pet's waste while on a walk.

## Pollution Reporting

67%

of residents would probably or definitely report potential pollution to their town or county.

## Additional Information

**Contact: Rebecca Murphy**

Coastal Program Manager

rmurphy@novaregion.org

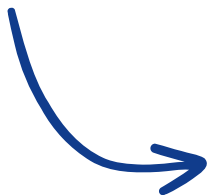
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3040 Williams Drive, Suite #200

Fairfax, VA 22031



**Website:** [www.onlyrain.org](http://www.onlyrain.org)



Scan with  
your phone!

**Social Media:**

- **Facebook:** [facebook.com/NVCWP](https://facebook.com/NVCWP)
- **X (Formerly Twitter):** [twitter.com/nova\\_cwp](https://twitter.com/nova_cwp)
- **Instagram:** [instagram.com/novacwp](https://instagram.com/novacwp)
- **Threads:** [threads.net/@novacwp](https://threads.net/@novacwp)

**2024 Clean Water Partners:**

Fairfax County | Arlington County | Loudoun County | Loudoun Water | Fairfax Water | City of Alexandria | City of Fairfax | City of Falls Church | City of Manassas | City of Manassas Park | Stafford County | Town of Leesburg | Town of Dumfries | Town of Herndon | Town of Vienna | Prince William County | Northern Virginia Regional Commission | George Mason University | Virginia Coastal Zone Management Program | Fairfax County Public Schools | Northern Virginia Soil and Water Conservation District | Prince William County Public Schools



WINTER 2023

ISSUE 203



A YEAR OF EDUCATING & INSPIRING





## FROM THE EXECUTIVE DIRECTOR

### RICO FLESHMAN, E.P.

I love Prince William County! More specifically, I love the geography, the places, the attractions, the collection of diverse people and cultures, the history, and of course, our wonderfully vibrant environment. Another year has passed since I stepped into this role which means another 365 days of being introduced to new faces, new places, and the history that makes our County so special. I have found that being a useful tool to the government, businesses, and residents alike is exactly how Keep Prince William Beautiful as an organization thrives, how we strengthen the bonds between the community and environmental stewardship, and how we transform that energy into action.

This past year has seen its fair share of adversity but in that I have witnessed people all across the County stand up to offer their assistance to KPWB in the continuous pursuit of our mission. Picking up litter is a thankless and seemingly endless job at times, yet we have had volunteers old and new line up to assist us and perform community cleanups, adopt spots, label storm drains, do our litter and shopping center surveys, and add their personal expertise and skills to a wide variety of beautification projects. Amidst all of the background noise, to the thousands of volunteers and hundreds of organizations that have lent us your support- KPWB THANKS YOU!

We have also shifted our focus to increased education. We believe a well informed, environmentally-literate population is best poised to take action and have therefore spent hundreds of hours with community groups, civic organizations, and in classrooms working to educate our communities on what it means to take care of our environment. One of my personal favorite moments in this role is to stand in front of a classroom of students and see their eyes light up when we make a connection with them! It fuels me. It gives me hope and I use that hope to continue to do what we do for the County.

I love Prince William County! KPWB loves Prince William County and this team is very much looking forward to what the next year holds for us all!

A handwritten signature in black ink, appearing to be 'Rico Fleshman'.

*"Engage through outreach & education, **excite** by developing a sense of pride in our communities, and **empower** through action to keep our County clean and beautiful."*



## OUR MISSION

Keep Prince William Beautiful is a 501(c)3 environmental organization that serves Prince William County through partnering with residents, businesses, community organizations and the government to educate and inspire environmental stewards who, through locally informed action, actively work to reduce litter waste, increase recycling, and broaden environmental education throughout the County.

10,721

LBS. of Litter Collected

37

Community Education & Outreach Events

11

Beautification Projects

3,069

Volunteer Hours

57

Community & Adopt-A-Spot Cleanups

1,858

LBS. of Plastic Bag & Film Collected

2023  
COMMUNITY  
IMPACT



# COMMUNITY ACTION



## CHINN PARK CHILDREN'S GARDEN

In June, KPWB partnered with the Garden Club of Lake Ridge to build an educational garden for kids, located between the Chinn Aquatics and Fitness Center and Chinn Park Library. This project was also in collaboration with the Chinn Park Preschool Program.

Volunteers came together to plant a variety of flowers, herbs, and more, creating a highly sensory experience for children that encourages a love for gardening and exploring nature. Stepping stones and educational markers were added throughout for easy accessibility and so one can learn as they go. The garden also features a mailbox full of more kid-friendly educational materials to take home. Thank you to our fellow community organizations and each volunteer who helped make this learning experience come to life!



# COMMUNITY ACTION

## NVFS' SERVE CAMPUS BEAUTIFICATION

May certainly brought more flowers this year! This past summer, KPWB partnered with AWS InCommunities and the NVFS SERVE Campus to refresh and add to the NVFS SERVE Campus Wellness Garden.

Volunteers built a large new planter for the campus, and gave new life to the garden after it was first established in 2021 by our team. More plants were added and the space was given fresh mulch. This project aimed to provide a calming place for both the staff and guests of the campus to enjoy.





# COMMUNITY ACTION



## DCC TREE PLANTING & CLEANUP

In September, KPWB teamed up with 60 volunteers from the DCC Coalition to remove litter and restore fencing around Bull Run Plaza and the Bull Run Watershed, as well as extend the riparian buffer by planting dozens of trees. Nearly 30 bags of trash were collected, 50 trees were planted, and new fencing helps to prevent future litter from entering our watershed. Thank you for your hard work, volunteers!

## ANDREW LEITCH PARK CLEANUP

This past March, KPWB teamed up with over 40 volunteers from multiple community organizations to clean litter from the NW corner of Andrew Leitch Park. Collecting an estimate of 2332 lbs. of total waste, volunteers removed many dumped mattresses, porch decking, household and lawn furniture, and 32 bags of trash. Thank you to our partners and these hard-working volunteers for their dedication toward protecting our parks!





# COMMUNITY ACTION



## ANNUAL TOWN OF DUMFRIES CLEANUPS

In 2023, KPWB partnered with the Town of Dumfries to conduct two annual town cleanups that removed litter from various locations around Dumfries. During the Spring Cleanup, 36 volunteers participated in collecting over 700 lbs. of waste from the ground and labeled multiple storm drains. Storm drain labeling is an important educational tool in the community; labels serve as a reminder that any litter in the street can easily flow into our storm drains. Water is not treated or cleaned after entering our storm drains, meaning any present contaminants or trash is sent directly into the nearest body of water. During the Fall Cleanup, 22 volunteers came together to remove over 300 lbs. of litter and illegally-dumped items from the Town of Dumfries. KPWB is honored to have this partnership with the community and looks forward to future action!



# COMMUNITY ACTION

## ANNUAL BULL RUN WATERSHED CLEANUPS

Protecting water quality in Prince William County is one of the most vital parts of maintaining a healthy environment for wildlife and community members alike. The Bull Run tributary feeds into the Occoquan Reservoir, which provides nearly 17 million gallons of drinking water for over half of Prince William's county population. As a member of the Bull Run Watershed Protectors, a volunteer group of local organizations that seek to improve the health of Bull Run, KPWB helped conduct two cleanup and tree planting events this year. In March, this partnership brought out 50 volunteers to remove almost 30 bags of litter from the area; they planted 10 native tree seedlings near the stream, as well as dozens of native seed balls. Later on in November, 30 volunteers participated in the second cleanup, clearing 26 bags of litter and many large illegally-dumped items.





# COMMUNITY ACTION

## E-WASTE RECYCLING PROGRAM

KPWB is always looking for ways to expand so as to offer more resources to community members and local businesses. In 2023, KPWB partnered with the PWC Green Business Council and The Junkluggers of Gainesville, VA to offer a free e-waste recycling drop-off location for all community members. E-waste includes any unwanted or broken electronic devices. It has become an additional strain on our landfills, one we hope to help divert.



## PLASTIC BAG & FILM COLLECTION PROGRAM

In similar news, KPWB was proud to expand our NexTrex Recycling program. In partnership with local libraries, this program collects plastic bag & film donations from the community, and sends these donations back to NexTrex to have recycled into eco-friendly products. In 2023, KPWB added five collection bins to manage, partnering with five more libraries. All collections go toward earning another bench to be donated to these local libraries, each made from 500 lbs. of recycled plastic bags. KPWB thanks you for your donations!





# COMMUNITY ACTION

Learning how to care for one's environment, how to live sustainability, should be prevalent in any young person's education, and we believe in the value of *hands-on* learning. When students are given the chance to explore environmental issues during their youth, a deeper sense of personal interest and responsibility toward our planet is cultivated; they are encouraged to identify challenges, to use critical thinking, and to test their problem-solving skills. Promoting environmental education in our county has been the leading staple of our year, and is the most crucial element to building an environmentally sustainable future.

## DALE CITY ELEMENTARY TRAIL REPAIR & OUTDOOR CLASSROOM

This past April, KPWB teamed up with PWTSC and Dale City Elementary School to give students the opportunity to experience outdoor learning throughout their school year. The existing outdoor classroom at Dale City ES needed heavy clearing, as did the trail leading to the space. This project is still in progress; so far, volunteers came together to reroute the existing trail, improve trail sustainability, cleared and rebuilt the existing outdoor classroom, and expanded new space for an additional outdoor classroom. Removing vegetation and repairs have included lots of heavy lifting, and we are excited to keep going!





# COMMUNITY ACTION

## THE TRASH SUIT: TEACHING CONSUMERISM AND LITTER AWARENESS

October brought a fun, but illuminating, addition for our staff to use when teaching PWC students about the impacts of consumerism and single-use culture. The Trash Suit started as an experiment by Robin Greenfield in which he wore every piece of trash he created over 30 days, instead of tossing anything. KPWB borrowed the suit, including both the jacket and pants, to educate classes from multiple schools on the effects of excessive consumerism in the United States. This was an unforgettable visual to share with students!



## EDUCATIONAL ACTIVITIES WITH LOCAL LIBRARIES

Throughout 2023, KPWB has held a series of kid-friendly activities at our local libraries. This included educating students on the benefits of composting, planting, and other environmental topics.

These activities also involved storytime, and our staff is excited to continue doing them in 2024.



# COMMUNITY ACTION

## BOYS & GIRLS CLUBS' REPAIR AND UPDATE

In November, KPWB, Habitat for Humanity Prince William County, and Neabsco District Supervisor Victor S. Angry teamed up with volunteers from multiple organizations to repair and update 3 local Boys & Girls Clubs. The work completed included repainting common rooms, curbs, and handicapped spots, wood-staining, adding new outdoor games, fence-clearing, pressure-washing, large debris removal, weed clearing, and more.

What a success! Thank you to Habitat for Humanity Prince William County, Neabsco District Supervisor Victor S. Angry, and every volunteer who participated in this series of events for doing such an incredible job for these boys and girls!





# COMMUNITY ACTION



## TOWN OF DUMFRIES BUS SHELTER BEAUTIFICATION

In June, KPWB showcased 3 more beautified bus shelters, located in the Town of Dumfries. This annual project, supported by OmniRide and KPWB, transforms designated bus shelters into canvases of public art designed by local artists. Combined with a litter removal program, this project aims to use public art to beautify neighborhoods, spread litter awareness, and improve the ridership experience. The theme for 2023 was “Clean Communities, Clean Waterways” and these talented artists knocked it out of the park! Artist’s names, from top to bottom on the left: Darien Taylor, Tamao Nakayama, Amanda Brown

## IRONGATE COMMUNITY BEAUTIFICATION

This past year, our team headed to the Irongate community in Manassas, VA to build a new green space for the neighborhood and for our pollinators. New topsoil and mulch was brought in with the installation of varying shrubs, such as Pinkster Flower and Virginia Sweetspire. In addition, a lending library was installed to expand book access and inspire readers in the community. The lending library was built by Joshua, who is pursuing a Venturing Summit Award with Boy Scouts of America. We want to thank Joshua, as well as thank McKay Used Books, who generously donated over fifty books to fill the current lending library and the additional ones that will be installed throughout the neighborhood.

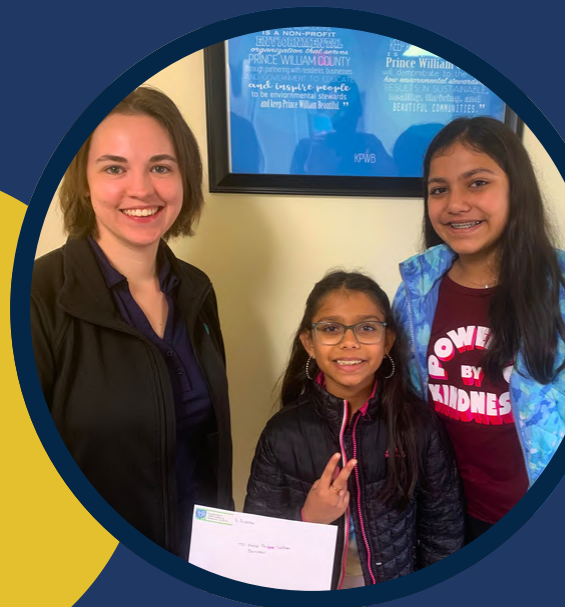




# HIGHLIGHTS

## VOLUNTEER SHOUTOUT

It's truly our volunteers that keep Prince William beautiful and we have to shout out one of the best! Anushka Misra received the President's Volunteer Service Award silver tier by volunteering 75 hours at various events and organizations throughout 2023. She assisted KPWB with cleanups and NexTrex ; she also volunteers for Lucky Dog, Food Pantry, Loudan Literacy Program, and more. She even finds time to run her own fundraiser and KPWB was honored to receive a donation! Thank you, Anushka!



## COMPOST PROGRAM WITH PRINCE WILLIAM COUNTY SCHOOLS

To educate students on the value of food scraps, KPWB teamed up with The Junkluggers of Gainesville VA to start a pilot composting program at Prince William Academy. We are encouraged by the success students have had so far and are eager to establish more programs.

## 2023 AWARDS

This year, KPWB was honored to have our efforts recognized by the community. For the second year in a row, KPWB was selected for the 2023 Best of Woodbridge Award: Non-Profit Organization Category by the Woodbridge Award Program. KPWB also received the 2023 Agnes L. Colgan Award: Arts and Education from the PW Chamber of Commerce. Lastly, the Town of Dumfries awarded KPWB with an Earth Day Proclamation.



## VOLUNTEER TODAY

Prince William County benefits from the hundreds of KPWB volunteers each year, and our volunteers benefit as well! Volunteers lead community cleanups, participate in beautification projects, support our booths at community events, assist in the office and with our TRES bag collection, and much more. Whether you're an individual, organization, business or partner, we can help match you to the perfect volunteer opportunity!

KPWB has both one-time and ongoing opportunities available year-round. See the full list of programs or register to volunteer with us at [kpwb.org](http://kpwb.org).

**ADOPT-A-SPOT**

**LITTER SURVEYING**

**STORM DRAIN  
LABELING**

**BEAUTIFICATION**

**ADOPT-A-SHELTER**

**TRES RECYCLING**

**COMMUNITY  
CLEANUPS**

**EDUCATIONAL  
OUTREACH**

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Parks, Recreation, and  
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### Grace Benevento

Programs Manager

### Grace Canna

Programs Assistant

### Jaden Fleshman

Programs Assistant

### Kamala Espig

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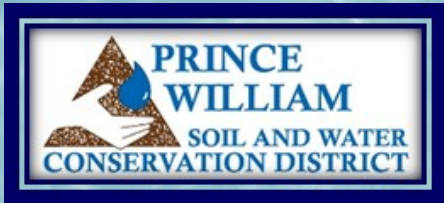
Anushka Misra

Students of Antietam Elementary School

Garden Club of Lakeridge

The Veterans of Foreign Wars Of The US Club





# Inspiring Personal Responsibility for our Environment and Natural Resources

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 Manassas, VA 20109-3733

571.379.7514  
[www.pswcd.org](http://www.pswcd.org)

## Annual Report

### July 1, 2023—June 30, 2024



Meaningful Watershed Education Experience (MWEE) at Beville M.S.

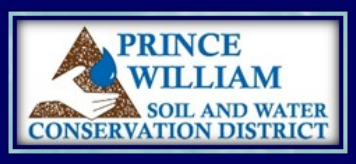
**Our mission:**  
 To provide leadership in the conservation of soil, water, and related resources to all Prince William County citizens, through technical assistance, information, and education.

The Commonwealth of Virginia supports Prince William Soil & Water Conservation District through financial and administrative assistance provided by the Virginia Soil and Water Conservation Board and the Department of Conservation and Recreation (DCR).

The District receives funding via a Memorandum of Agreement with Prince William County to provide technical assistance, as well as compliance programs that solve and prevent natural resource problems for landowners, and encourage good stewardship of the environment.







# Directors and Staff

## Board of Directors



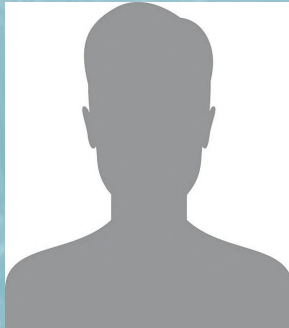
**John Price**  
Chairman



**Jenny Reed**  
Vice Chairman



**Nancy Vehrs**  
Secretary



**Mansimron Kahlon**  
Treasurer

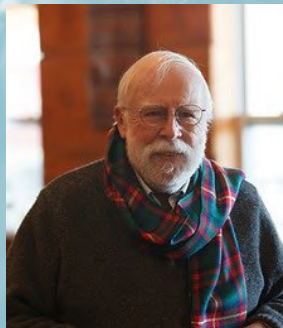


**Thomas Bolles**  
Director

## Associate Directors



**Jim Gehlsen**



**Harry Glasgow**



**Sonnie Cuffey**

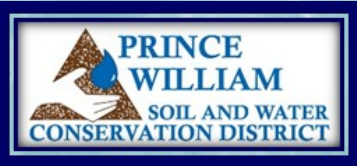


**Will Lintner**



**Andrew Uglow**





# Staff



**Duane Mohr**  
District  
Manager



**Linda Dunn**  
Office Manager



**Veronica Tangiri**  
Water Quality Program  
Manager



**Kim Lowther**  
Education Specialist



**Nicole Slazinski**  
Urban Conservation  
Specialist



**Josie Anderson**  
Water Quality Assistant



**Seth Hatfield**  
Conservation  
Specialist



**Alex Murphy**  
Conservation  
Specialist



**Jay Yankey**  
Cost-Share Specialist



## About our County

### About our county



According to the United States Department of Agriculture (USDA) 2022 Census of Agriculture for Prince William County (latest census available), there are 20,388 acres of farmland in the county, approximately 11% of the total acres. This represents a 11% decrease in farmland over the 2017 census. The average size of farms is 65 acres. The market value of products sold is \$10,084,000. Farmland in Prince William County is mainly located in three magisterial districts: Brentsville, Gainesville, and Coles.

### What is the Prince William Soil & Water Conservation District?

The Prince William Soil and Water Conservation District (PWSWCD) encompasses all of Prince William County. Our mission is to provide leadership in the conservation of soil, water, and related resources to all Prince William County citizens through technical assistance, information, and education. The District accomplishes this mission by administering the Virginia Agricultural Best Management Practice Cost-Share Program in the county and developing and administering educational programs to youth and adults. The District plays a role in the larger objective of improving water quality not only in local watersheds, but also in the Potomac and Chesapeake Bay Watersheds..

PWSWCD provides the following services to the residents of Prince William County:

- Agriculture—Conservation Plans, Virginia Agriculture Cost-Share program
- Youth Education—Conservation Capsules (classroom education), Farm Field Days, Meaningful Watershed Educational Experience (MWEE), Environmental Education
- Water Quality—Adopt-a-Stream/Pond, Water Quality Monitoring, Chemical Monitoring, Floatables Monitoring, Plastic Pollution
- Home Owners—Virginia Conservation Assistance Program (VCAP).

### Virginia Association of Soil & Water Conservation Districts



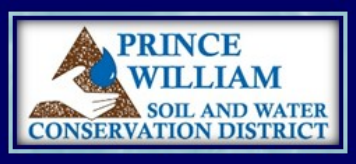
Virginia's diverse terrain is covered by 47 soil and water conservation districts. Each district provides a variety of services, uniquely dependent to their locations and their goals and objectives. "The mission of the Virginia Association of Soil and Water Conservation Districts and its Foundation is to provide and promote leadership in the conservation of natural resources through stewardship and education programs. "

### National Association of Conservation Districts

Across the United States there are 3,000 conservation districts who are helping local people to conserve land, water, forests, wildlife, and other related natural resources.. More than 17,000 volunteers serve in elected or appointed positions on conservation districts' governing boards. They work directly with more than 2.3 million cooperating land managers nationwide, and their efforts touch more than 778 million acres of private land.







# Agriculture

## Prince William County Deliverables

The District wrote 26 conservation plans for over 401 acres that reduced the following nutrients from entering our waterways:

Nitrogen	Phosphorus	Sediment
668.9 pounds	95.96 pounds	6.19 tons

These numbers represent 439 head of livestock eliminating approximately 1,253 tons of manure per year.

## DCR Cost-Share Best Management Practices (BMPs)

The District completed 7 cost-share practices for over 390.1 acres that reduced the following nutrients from entering our waterways:

Nitrogen	Phosphorus	Sediment
2,424.06 pounds	60.47 pounds	57.81 tons

We partner with the Virginia Department of Conservation and Recreation (DCR) under grant agreements to provide technical assistance in designing and installing Best Management Practices (BMPs) for natural resources conservation. Under these agreements for the Nonpoint Source Pollution Cost-Share Program we gave technical assistance to 81 citizens for the following: agricultural production, BMPs, drainage/stormwater management, urban erosion, agricultural erosion, land disturbance, partner agency assistance, pond management, trees, native plants, water quality, weeds, and wildlife management.



## Prince William Clean Water Farm Award Evergreen Bend Farm, LLC



**Farm Name:** Evergreen Bend Farm, LLC

**Location:** Nokesville, VA

**Watershed:** PL40: Cedar Run-Slate Run

**Farm summary:** 24.3 acres of pasture/hay rotation, 2.4 acres in just pasture, and 2.5 acres in hardwood. Livestock include ~13 Dexter beef cows (assortment of cows and calves) and ~18 sheep.

**Conservation:** Evergreen Bend Farm has installed the SL-6 :Stream Exclusion and FR-3: Woodland Buffer Filter Area in 2019 under the Virginia Agriculture Cost Share programs. The farm is actively under contracts for SL-10: Prescribed Grazing Land Management to help improve the quality of their pasture fields, and an SL-7: Extension of Watering Systems to help improve their rotational grazing and watering systems.

Other things to note:

- There are several tributaries to Cedar Run that scatter the property and surround the border. Though an SL -6, the livestock have been fenced out from these waterways. The farm is also under an FR-3 to provide an additional 2.5 acres in wooded buffer.
- The 26.7 acres of farm land are managed using a current certified nutrient management plan.





We continued to see a growing interest among residents in PY24 to learn more about water quality and to promote clean streams within PWSWCD. This shows the important role water plays in our communities, in relation to

## Adopt-A-Stream/Pond

Here are this year's highlights from our Adopt-a-Stream/Pond Program:

- 60 cleanup events took place in PY24 (September 2023 to June 2024)
- 30,752 pounds of trash were removed from 86.55 miles of streams
- 2762 volunteers put in over 3,762 hours of time to support the cause of clean streams and improved water quality

Current and available clean-up sites can now be viewed online at <https://arcg.is/1n0rnC1>.



Gar-Field HS Green Club Students



Aurora Flight Sciences Staff



Micron Technology Inc. Manassas USA Staff

## Water Quality Monitoring

PWSWCD continued to develop partnerships to help with water quality outreach. Data collected from our monitoring and outreach is shared with Prince William County (PWC) Environmental Services and the Virginia Department of Environmental Quality (DEQ).

Here are this year's highlights from our Water Quality Monitoring program:

- The number of active monitoring sites decreased to 112; these sites include chemical monitoring, benthic macroinvertebrate monitoring, and E.coli monitoring
- The number of Chemical Monitoring sites this year is 89, with 9 new sites.
- This summer there will be another training for Chemical Monitoring and Biological Monitoring.



## Conservation Capsules

- 125 teachers reserved 18 capsules for in-classroom presentations reaching approximately 2,635 students.
- Popular capsules this year include the four Watershed Enviroscope Models and Soils.

## Farm Field Days

- Farm Field Days in PY2024 was held on October 11 and 12, 2023 with over 1,300 4th grade students and parents attending the event. The event was run by staff and 126 volunteers over the two days it occurred. Topics for the event included: Farm animals, Trees, Pollination, Water Quality, Soil Erosion, and Regions of VA.



## Meaningful Watershed Education Experiences (MWEEs)

- We trained a total of 29 teachers on how to implement a MWEE in their classroom. In addition, we trained 3 Master Gardeners how to assist the teachers with MWEEs.
- We assisted in leading 4 different MWEEs for 3rd, 5th and 6th graders. We were able to reach over 1,200 students.
- Teachers who were trained this year and last year also used the Watershed Enviroscope Model in their classroom to teach about watersheds a total of 14 times.



## VCAP

The **Virginia Conservation Assistance Program (VCAP)** is an urban cost-share program that provides financial incentives and technical and educational assistance to property owners installing eligible Best Management Practices (BMP's) in Virginia's Chesapeake Bay Watershed. These practices can be installed in areas where problems like erosion, poor drainage, or poor vegetation occur. Qualified sites can be used for residential, commercial, or recreational purposes .

The Prince William Soil and Water Conservation District (PWSWCD) completed two projects in PY24. Conservation staff provided technical assistance and site visits to **8** people interested in the program. ?[The lack of completed VCAP projects is due to training three new Conservation Specialists and everyone completing their Level 1 Chesapeake Bay Landscape Professional certification.]





## Volunteer Picnic to Honor our Volunteers

On May 19th, Prince William had their Annual Volunteer Recognition Picnic at Ben Lomond Historic Site. Veronica Tangiri, Water Quality Manager, was able to attend and celebrate with several PWSWCD volunteers.



## Other Events

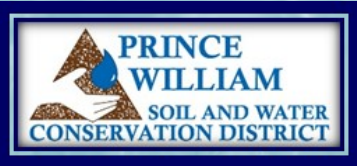
The District also assisted with other events such as:

- Farmer and Landowner Outreach Program on January 13, 2024



*Duane Mohr, District Manager, welcomes everyone to the 2024 Farmer and Landowner Outreach event.*





# Prince William Environmental Excellence Foundation (PWEEF)



“Dedicated to Helping Provide Environmental, Agricultural, and Natural Resources Conservation Education Beyond the Walls of the Classroom.”

## PWEE Foundation Board of Directors

Jim Gehlsen, Chairman, Treasurer

Will Lintner, Vice Chair

Linda Dunn, Secretary

Harry Glasgow, Director

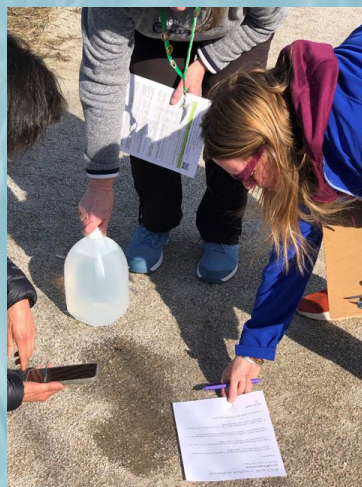
The Prince William Environmental Excellence Foundation is a 501 (C) (3) nonprofit affiliated with the Prince William Soil and Water Conservation District. The foundation raises money to support PWSWCD educational and outreach activities. In FY24 the foundation provided funding to support the Prince William SWCD youth environmental education programs.

## Meaningful Watershed Environmental Experience (MWEE)

The Prince William Soil and Water Conservation District (District) received the Virginia Watershed Educational Programs Grant provided by the Department of Conservation Resources (DCR) for the second year in a row. This year, PY2024, we received \$16,204.71. The grant was used for the District’s MWEE Teacher Training and Student Action Support project. The goal of this grant was to educate and connect teachers with the resources in our community to help them implement a MWEE. This training gave teachers a much better understanding of how our partner organizations can help them host a successful and ongoing MWEE event at their own schools. Two training events were held at two different locations:

- December 6, 2023  
Prince William Forest, Triangle, VA
- March 12, 2024  
Occoquan Bay National Wildlife Refuge, Woodbridge, VA

A total of 32 adults attended these trainings. These adults included Prince William County school teachers and Prince William Master Gardeners. Grades represented were from K-12.





# **FY24 Virginia Cooperative Extension Outreach and Education Summary**





VCE FY24 Second Quarter Training and Outreach

Date	Class	Attendees	# Clients Responding to Surveys	# Respondents Report <b>Intent</b> to Adopt 40% of the Recommended Environmentally - Sound Practices	# Respondents Reporting that participating in this program changed the way they think about agriculture/ environment/ natural resources	# Respondents Reporting that As a result of this class they feel more confident handling plant and pest issues	Poor	Fair	Good	Excellent	Type of Class
10/03/23	Botany Lecture	23	23	18	17	0	2	4	11	6	training
10/05/23	Botany Lab	19	19	16	14	0		2	9	8	training
10/7/2023	Sat in the Garden - Identifying and Removing Invasives	10	9	8	5	4			1	8	outreach
10/10/2023	Turf	38	23	18	22	0			10	13	training
10/11/2023	Lawn Alternatives - Lake Ridge Trowel Garden Club	9	9	7	8	8				9	education
10/12/2023	BEST Lawns	40	19	15	17	0		1	7	11	training
10/18/2023	Wed Zoom - Invasive Mgmt in Regency										outreach
10/19/2023	Weeds	26	15	13	15	15			4	11	training
10/28/2023	BL Practical	30	18	16	12	15			9	10	training
10/21/2023	Tree ID and Intro to Teaching Garden	25	19	17	16	0				19	training
10/22/2023	Native Gardening - Manassas Church of the Brethren	6	2	0	2	2				2	education
10/24/2023	Composting, Manassas Park Library	5	3	3	3	3				3	education
11/2/2023	IPM	42	17	14	14	16			4	11	training
11/9/2023	Plant Pathology	31	14	14	13	14			4	9	training
11/14/2023	Plant Lab (Disease)/Help Desk	25	11	10	9	11			3	8	training
12/5/2023	Houseplants	25	20	19	15	17			5	15	training
12/6/2023	SLF Leopold's Preserve	12	3	3	2	3				3	education
12/7/2023	Invasives	25	21	18	18	20			10	11	training
12/12/2023	Entomology	30	13	12	10	13			7	6	training
12/14/2023	Seed Saving and Propagation	29	13	10	10	13			1	12	training
		450	271	231	222	154	2	7	85	175	
							2	14	255	700	
				85.24%	81.92%	56.83%				269	
										971	
										3.60966543	
										90.2%	





VCE FY24 Fourth Quarter Training and Outreach

Date	Class	Attendees	# Clients Responding to Surveys	# Respondents Report Intent to Adopt 40% of the Recommended Environmentally - Sound Practices	# Respondents Reporting that participating in this program changed the way they think about agriculture/ environment/ natural resources	# Respondents Reporting that As a result of this class they feel more confident handling plant and pest issues	Poor	Fair	Good	Excellent	Type of Class
4/6/2024	Audubon @ Home SIG	12	7	7	6	7				7	education
4/13/2024	Fred Lynn Middle Community Engagement Event	14									outreach
4/11/2024	Nokesville School STEAM Night	100									outreach
4/17/2024	Mt. Zion Baptist Church Gardening for the Elderly	102									outreach
4/17/2024	Native Seeds	72	4	4	4	2				3	training
5/8/2024	Container Gardening St. Margaret of Cortona Transitional & Maternity Housing	12									education
5/18/2024	Manassas Pride Festival	122									outreach
5/29/2024	Invasives for Beginners	8	0	0	0	0				0	education
6/1/2024	Maintaining and Sharpening Your Garden Tools	12	8	7	7	6				8	education
6/4/2024	Westridge HOA Natives/Invasives HOA Board	11									training
6/5/2024	Tree Care	1									education
6/8/2024	Gardening & Composting	3	0	0	0	0				0	education
6/15/2024	Vegetable class Potomac Library	0	0								education
6/19/2024	Juneteenth	34									outreach
6/20/2024	Audubon At Home (NARFE)	17									outreach
6/22/2024	Pollinator/Maker Fair at Bull Run Library	97									outreach
6/30/2024	2024 Vegetable Class (ON LINE)	31	1	1	1	1				1	training
4/20/2024	Central Library Spring Fest	35									outreach
4/24/2024	Container Gardening Springwood Boy Scouts	10									outreach
5/6/2024	Tree Walk Piney Br.ES	27									outreach
		720	20	19	18	16	0	0	0	19	
						499	0	0	0	76	
				95.00%	90.00%	80.00%				100.00%	

## **Appendix L**

### **Summary of County Training Program**

## FY24 County Training Program Summary

### Training Course:

Course Title	Number of Participants
Environmental Management Systems	71
Spill Prevention, Control and Countermeasure Plan	81
Illicit Discharge Prevention	179
U.S. DOT HazMat 3-Year Cert Course	14
Hazard Communication	82
Thrive Newsletter Submittal for Illicit Discharge Prevention (attached)	101

### Inspections:

- **(4) Annual SWPP Audit/Inspections.**
  - 3- Dept. of Parks and Recreation.
  - 1- Fleet Management
- **(47) Annual Tank and SPCC Inspections**
  - 21- Department of Fire & Rescue
  - 13- Facilities and Fleet Management
  - 10- Department of Parks and Recreation
  - 3- Department of Public Works

### Garden Installation:

- Funded and provided plants for 16 fire stations
- Prepped new native garden space at main county complex

### Recognition:

- 214 Sustainability Badges recognizing employees for their environmental efforts. Some examples:
  - Thank you to the PWC western maintenance hub and volunteers throughout B&G for making the western hub the first to achieve 100% LED lighting in its facilities. This thank you is nearly a decade in the making. The western hub embraced the cause early and aggressively. As a result, the western team has saved PWC approximately \$200,000 in reduced electric costs over the past six years. Western hub reduced its greenhouse gas impact by 763 metric tons of Carbon Dioxide equivalent over six years, which is similar to nearly 2 million miles driven by a gasoline-powered passenger vehicle, or the equivalent of 150 homes' electricity use in a year. Major projects included the LED conversion of the Western District Police Station (2017),

Bull Run Library (2018), Molinari Shelter (2019), all PSTC facilities (2019-2020), and the Haymarket-Gainesville Library (2023).

- Your commitment to have our team transition towards more digital record keeping has helped not only from a cost perspective, but also from a sustainability standpoint. Well done!
- You deserve the environmentally sustainability badge for getting the composting bins installed at HG as well as overseeing the continuous maintenance for keeping them going! Your newest addition to our environment was the "Recycle beyond the Bag" program that will result in a Trex bench made from 100% recycled plastic bags.
- For all the RC Staff efforts to reuse the thousands of boxes that pass thru the Records Center every year. Not to mention their quiet heroism when you are desperate to find one piece of paper among millions by the next day for an audit; but that should be recognized with another award on another day. Thank you, Records Center, for all you do.
- Thank you so much to everyone for participating in the Clean Up & Eat Up event at the County Complex this morning. We appreciate you taking time out of your day to walk around the County Complex and help pick up litter. What a great way to kick off celebrating Earth Month at the County!
- Our patrons occasionally cause our low flush toilets to become overwhelmed with toilet paper. Instead of putting up signs to tell people to use less paper and avoid clogged toilets, you creatively reframed the problem in environmental terms.
- Signage asking for help conserving trees and allowing our low flush toilets to be part of the solution is an effective way to get patrons working towards a common goal.

**Wellness:**

- Promotion of “National Trails Day” for the month of June 2024 with a walking challenge
  - Over 180 participants and photos sent (some attached)
- 4 courses, each with four sessions of “Gardening for Beginners” taught as a wellness event to promote outdoor green spaces at home, with over 80 participants (photos attached). Discussed native plantings, no pesticide use for gardening.
- Virginia Turfgrass Council provided 500 native pollinator plant seed packets for PWC employees that were given out for Earth Day and Employee Appreciation Day (photos attached).

## **Appendix M**

### **Dry Weather Screening – Inspection Summary**



Landuse	Outfall Id	Last Inspection Date	Flow Present	Illicit Discharge	High Risk	Maintenance Required	Within PWC Service Area	VPDES Permitted
Residential	4444	6/13/2024	No	Unlikely	N	False	Y	N
Residential	20279	5/28/2024	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	9128	10/27/2023	No	Unlikely	N	False	N	N
Open Space	32087	10/10/2023	No	Unlikely	N	False	N	N
Other Industrial	28325	9/29/2023	No	Unlikely	N	False	N	N
Residential	113	4/4/2024	Yes	Unlikely	N	False	N	N
Residential	42559	8/18/2023	No	Unlikely	N	False	N	N
Residential	22508	8/1/2023	No	Unlikely	N	False	Y	N
Open Space	64149	8/14/2023	No	Unlikely	Y	True	N	N
Residential	16362	7/12/2023	No	Unlikely	N	False	Y	N
Residential	40925	4/25/2024	No	Unlikely	N	False	Y	N
Residential	40051	2/5/2024	No	Unlikely	N	False	N	N
Residential	27423	10/31/2023	No	Unlikely	N	False	Y	N
Regional Mall	13335	9/11/2023	No	Unlikely	N	False	N	N
Residential	39309	8/10/2023	No	Unlikely	N	True	N	N
Residential	6850	11/9/2023	No	Unlikely	N	False	N	N
Other	32551	11/6/2023	No	Unlikely	N	True	Y	N
Residential	5593	8/18/2023	No	Unlikely	N	False	N	N
Residential	37688	10/13/2023	No	Unlikely	N	False	N	N
Other	41681	10/10/2023	No	Unlikely	N	False	Y	N
Residential	33408	4/5/2024	Yes	Unlikely	N	False	N	N
Residential	35439	12/13/2023	No	Unlikely	N	False	N	N
Other	21799	5/17/2024	No	Unlikely	N	True	N	N
Residential	16178	7/28/2023	No	Unlikely	N	False	Y	N
Residential	27356	10/3/2023	No	Unlikely	N	False	Y	N
Other	56011	12/1/2023	No	Unlikely	N	True	N	N
Residential	15296	9/20/2023	Yes	Unlikely	Y	False	N	N
Residential	61362	9/22/2023	No	Unlikely	Y	True	Y	N
Institutional (schools/churches)	20271	11/6/2023	No	Unlikely	N	False	N	N
Residential	13362	7/25/2023	No	Unlikely	N	False	Y	N
Shopping Center	62841	9/22/2023	No	Unlikely	Y	False	Y	N
Residential	23095	6/4/2024	Stagnant	Unlikely	N	False	N	N
Hotel w/ Restaurant	49029	5/2/2024	No	Unlikely	N	False	N	N
Residential	39699	8/10/2023	No	Unlikely	N	True	Y	N
Residential	13364	7/25/2023	No	Unlikely	N	False	N	N
Residential	7123	11/8/2023	No	Unlikely	N	False	Y	N
Residential	55064	5/2/2024	No	Unlikely	N	True	N	N
Planned Industrial Park	60841	3/27/2024	No	Unlikely	Y	True	N	N
Residential	28794	12/11/2023	No	Unlikely	N	False	Y	N
Other	38445	6/11/2024	No	Unlikely	N	True	N	N
Residential	28528	4/9/2024	Stagnant	Unlikely	N	False	Y	N
Residential	8275	10/12/2023	No	Unlikely	N	False	N	N
Other	12455	4/10/2024	Stagnant	Unlikely	N	False	N	N
Other	62127	8/23/2023	Yes	Unlikely	N	False	N	N
Other	67182	4/26/2024	No	Unlikely	N	False	Y	N
Residential	32601	6/4/2024	No	Unlikely	N	False	Y	N
Residential	26734	9/11/2023	No	Unlikely	N	False	Y	N
Residential	22489	8/22/2023	Yes	Unlikely	Y	False	N	N
Other	4458	6/13/2024	No	Unlikely	N	True	Y	N
Other	5954	10/4/2023	No	Unlikely	N	False	Y	N
Residential	3228	12/1/2023	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	54992	8/18/2023	No	Unlikely	N	False	Y	N
Residential	41717	10/10/2023	No	Unlikely	N	False	Y	N
Residential	27862	7/12/2023	No	Unlikely	N	False	Y	N
Residential	21548	7/27/2023	Yes	Unlikely	N	True	N	N
Residential	24576	12/1/2023	No	Unlikely	N	False	N	N
Other	27654	8/22/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	19425	4/11/2024	No	Unlikely	N	False	N	N
Other	63416	8/23/2023	Yes	Unlikely	N	False	N	N
Shopping Center	8127	10/26/2023	Yes	Suspect	N	True	N	N
Residential	39703	8/10/2023	No	Unlikely	N	False	Y	N
Residential	46301	8/1/2023	No	Unlikely	N	False	N	N
Other Industrial	23506	9/28/2023	Yes	Unlikely	Y	True	N	N
Other	27199	3/18/2024	No	Unlikely	N	False	N	N
Residential	13350	11/6/2023	No	Unlikely	N	False	Y	N
Residential	6120	10/3/2023	No	Unlikely	N	True	Y	N
Residential	29030	6/4/2024	No	Unlikely	N	False	Y	N
Residential	13360	7/25/2023	No	Unlikely	N	False	Y	N
Other	38695	12/1/2023	No	Unlikely	N	True	N	N
Residential	20452	11/9/2023	No	Unlikely	N	False	Y	N
Residential	42361	3/13/2024	No	Unlikely	N	False	N	N
Open Space	19621	9/29/2023	No	Unlikely	N	False	N	N
Residential	20438	11/9/2023	No	Unlikely	N	False	Y	N
Residential	7148	11/14/2023	No	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	54999	8/18/2023	No	Unlikely	Y	True	Y	N
Residential	105	4/5/2024	No	Unlikely	N	False	N	N
Shopping Center	56536	9/19/2023	Stagnant	Unlikely	Y	False	N	N
Residential	40047	10/31/2023	No	Unlikely	N	False	Y	N
Residential	13326	9/11/2023	No	Unlikely	N	False	Y	N
Residential	32740	9/20/2023	Stagnant	Unlikely	N	False	Y	N
Residential	3608	11/21/2023	No	Unlikely	N	False	N	N
Shopping Center	60542	10/12/2023	Stagnant	Unlikely	N	True	N	N
Residential	18736	8/22/2023	No	Unlikely	N	False	N	N
Regional Mall	27707	3/15/2024	No	Unlikely	N	False	N	N
Residential	28125	6/4/2024	No	Unlikely	N	False	Y	N

Residential	39722	2/6/2024	Stagnant	Unlikely	N	False	N	N
Residential	57291	4/5/2024	Yes	Unlikely	N	False	N	N
Other	24873	10/18/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	35138	8/18/2023	No	Unlikely	Y	True	N	N
Other	49534	9/11/2023	No	Unlikely	N	True	N	N
Other	10414	8/22/2023	No	Unlikely	N	False	N	N
Residential	18040	4/9/2024	No	Unlikely	N	True	Y	N
Residential	55041	3/21/2024	No	Unlikely	N	False	Y	N
Residential	6761	10/3/2023	Stagnant	Unlikely	N	False	N	N
Residential	36566	12/8/2023	No	Unlikely	N	False	Y	N
Residential	16759	5/21/2024	Yes	Unlikely	N	False	Y	N
Residential	55044	3/25/2024	No	Unlikely	N	False	N	N
Residential	8273	10/11/2023	No	Unlikely	N	False	N	N
Residential	40513	8/23/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	13213	9/29/2023	No	Unlikely	N	True	N	N
Residential	61489	3/21/2024	Yes	Unlikely	N	False	Y	N
Residential	16524	4/9/2024	No	Unlikely	N	True	N	N
Residential	8821	3/26/2024	No	Unlikely	N	True	N	N
Residential	47735	3/12/2024	No	Unlikely	N	True	N	N
Gas Station	61907	9/19/2023	No	Unlikely	Y	False	N	N
Residential	27428	10/31/2023	No	Unlikely	N	False	Y	N
Residential	43302	12/8/2023	No	Unlikely	N	False	Y	N
Residential	44048	12/13/2023	Stagnant	Unlikely	N	False	Y	N
Residential	46803	12/8/2023	Yes	Unlikely	N	False	N	N
Open Space	3210	11/21/2023	No	Unlikely	N	False	N	N
Residential	29434	6/4/2024	No	Unlikely	N	True	Y	N
Shopping Center	11619	11/9/2023	Yes	Unlikely	Y	False	N	N
Residential	6632	7/25/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	64504	5/22/2024	No	Unlikely	N	False	N	N
Planned Industrial Park	13811	3/26/2024	Stagnant	Obvious	Y	True	N	N
Residential	40229	10/17/2023	No	Unlikely	N	False	N	N
Residential	16829	10/31/2023	No	Unlikely	N	False	Y	N
Open Space	24505	9/20/2023	No	Unlikely	N	False	Y	N
Other	65292	3/21/2024	No	Unlikely	N	False	N	N
Residential	39375	8/9/2023	Yes	Unlikely	N	False	N	N
Residential	22113	6/4/2024	Stagnant	Unlikely	N	False	Y	N
Residential	13068	9/14/2023	No	Unlikely	N	False	N	N
Other	24869	10/18/2023	No	Unlikely	N	False	N	N
Residential	36971	12/28/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	56035	8/14/2023	No	Unlikely	N	False	N	N
Residential	28742	10/3/2023	No	Unlikely	N	False	Y	N
Residential	51812	3/27/2024	No	Unlikely	N	False	Y	N
Residential	20289	5/28/2024	No	Unlikely	N	False	Y	N
Residential	11234	10/4/2023	No	Unlikely	N	False	Y	N
Residential	27917	11/17/2023	No	Unlikely	N	True	Y	N
Residential	31009	8/23/2023	No	Unlikely	N	False	Y	N
Residential	16513	4/9/2024	No	Unlikely	N	False	Y	N
Open Space	55248	10/27/2023	No	Unlikely	N	False	N	N
Other	28523	4/9/2024	No	Unlikely	N	False	N	N
Residential	27486	10/31/2023	No	Unlikely	N	True	N	N
Residential	46286	8/1/2023	Stagnant	Unlikely	N	False	N	N
Other	21750	9/8/2023	No	Unlikely	N	True	N	N
Shopping Center	30720	5/21/2024	Yes	Unlikely	Y	False	N	N
Other	13352	11/6/2023	No	Unlikely	N	False	Y	N
Residential	20924	11/20/2023	Yes	Unlikely	N	False	N	N
Other	68418	10/3/2023	No	Unlikely	N	False	N	N
Residential	21903	8/23/2023	No	Unlikely	N	False	N	N
Residential	64080	9/20/2023	Yes	Unlikely	Y	True	Y	N
Residential	16368	7/12/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	62110	11/13/2023	No	Unlikely	Y	True	N	N
Planned Industrial Park	62108	11/13/2023	No	Unlikely	Y	True	N	N
Residential	35029	12/28/2023	No	Unlikely	N	False	N	N
Open Space	29892	10/30/2023	No	Unlikely	N	False	N	N
Residential	50508	6/4/2024	No	Unlikely	N	False	N	N
Open Space	13322	9/29/2023	No	Unlikely	N	True	N	N
Residential	51774	12/28/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	21444	8/22/2023	No	Unlikely	Y	False	N	N
Institutional (schools/churches)	6110-003	9/29/2023	Stagnant	Unlikely	N	False	N	N
Hotel w/ Restaurant	49037	5/2/2024	No	Unlikely	N	False	N	N
Residential	14568	11/14/2023	No	Unlikely	N	False	Y	N
Residential	20277	5/28/2024	No	Unlikely	N	False	Y	N
Residential	16360	7/12/2023	No	Unlikely	N	False	Y	N
Shopping Center	52650	8/18/2023	No	Unlikely	N	False	N	N
Residential	35118	12/28/2023	No	Unlikely	N	False	Y	N
Residential	16791	7/12/2023	No	Unlikely	N	False	N	N
Residential	51029	6/12/2024	Yes	Unlikely	N	False	N	N
Residential	43908	12/13/2023	Stagnant	Unlikely	N	False	N	N
Other	26312	7/28/2023	No	Unlikely	N	False	N	N
Residential	35857	8/23/2023	Stagnant	Unlikely	N	False	Y	N
Open Space	68653	5/2/2024	Yes	Unlikely	N	False	N	N
Other	27665	8/22/2023	No	Unlikely	N	False	N	N
Residential	18736	8/22/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	34882	11/14/2023	No	Unlikely	Y	False	N	N
Other	19993	5/20/2024	No	Unlikely	N	True	Y	N
Residential	66445	10/3/2023	No	Unlikely	N	True	N	N
Planned Industrial Park	34879	11/13/2023	No	Unlikely	Y	True	N	N

Residential	32575	11/2/2023	Yes	Unlikely	N	False	Y	N
Residential	39418	2/6/2024	No	Unlikely	N	False	Y	N
Residential	30	4/5/2024	Yes	Unlikely	N	False	N	N
Residential	16656	4/9/2024	No	Unlikely	N	False	Y	N
Residential	6857	11/9/2023	No	Unlikely	N	False	N	N
Residential	7157	11/17/2023	No	Unlikely	N	True	Y	N
Residential	3628	11/20/2023	No	Unlikely	N	False	N	N
Residential	27911	11/17/2023	No	Unlikely	N	False	Y	N
Residential	32614	6/4/2024	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	12761	6/13/2024	No	Unlikely	N	False	N	N
Residential	39708	8/10/2023	No	Unlikely	N	False	N	N
Residential	28532	4/8/2024	Yes	Unlikely	N	False	Y	N
Other	21186	3/20/2024	No	Unlikely	N	False	N	N
Residential	24840	7/31/2023	Yes	Unlikely	N	False	N	N
Other Industrial	23512	9/28/2023	Yes	Unlikely	Y	True	N	N
Residential	50014	10/18/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	62109	11/13/2023	No	Unlikely	Y	True	N	N
Other	56114	4/4/2024	Yes	Unlikely	N	False	Y	N
Residential	28813	12/8/2023	No	Unlikely	N	False	Y	N
Residential	38978	10/13/2023	No	Unlikely	N	False	N	N
Residential	49988	10/18/2023	No	Unlikely	N	False	Y	N
Open Space	12504	5/3/2024	No	Unlikely	N	True	N	N
Residential	16414	11/17/2023	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	42817	11/9/2023	No	Unlikely	Y	False	N	N
Residential	46965	4/4/2024	Yes	Unlikely	N	False	Y	N
Vehicle Sale/Repair/Miscellaneous Automotive	20164	3/20/2024	Yes	Obvious	Y	True	N	N
Residential	4456	6/13/2024	No	Unlikely	N	True	Y	N
Open Space	36226	9/8/2023	No	Unlikely	N	False	N	N
Residential	18777	10/11/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	56009	11/30/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	46981	4/4/2024	No	Unlikely	N	False	Y	N
Residential	16488	5/21/2024	Yes	Unlikely	N	False	N	N
Residential	53616	5/2/2024	No	Unlikely	N	False	N	N
Residential	27905	11/17/2023	No	Unlikely	N	False	Y	N
Other	47959	3/25/2024	No	Unlikely	N	False	N	N
Residential	16510	4/9/2024	No	Unlikely	N	False	Y	N
Other	68653	4/30/2024	Yes	Unlikely	N	False	N	N
Residential	43968	12/13/2023	Stagnant	Unlikely	N	False	Y	N
Residential	3620	11/20/2023	No	Unlikely	N	False	N	N
Residential	16810	11/17/2023	Stagnant	Unlikely	N	False	N	N
Other	40053	2/5/2024	No	Unlikely	N	False	Y	N
Residential	28673	10/3/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	55246	10/27/2023	No	Unlikely	N	False	N	N
Residential	20963	4/30/2024	No	Unlikely	N	False	N	N
Residential	38460	6/11/2024	No	Unlikely	N	False	Y	N
Residential	49986	10/18/2023	No	Unlikely	N	False	Y	N
Residential	49981	10/17/2023	No	Unlikely	N	False	N	N
Residential	428	10/11/2023	No	Unlikely	N	False	N	N
Other	39520	6/11/2024	Stagnant	Unlikely	N	False	N	N
Residential	43283	12/11/2023	No	Unlikely	N	False	N	N
Residential	51086	4/26/2024	No	Unlikely	N	False	Y	N
Residential	16659	4/8/2024	Stagnant	Unlikely	N	False	Y	N
Residential	16425	11/17/2023	No	Unlikely	N	False	Y	N
Residential	43884	2/6/2024	No	Unlikely	N	False	Y	N
Residential	63410	8/23/2023	No	Unlikely	N	False	N	N
Residential	9909	3/26/2024	No	Unlikely	N	False	N	N
Residential	67178	4/26/2024	No	Unlikely	N	False	Y	N
Residential	28378	8/23/2023	No	Unlikely	N	False	Y	N
Open Space	64151	8/15/2023	No	Unlikely	Y	True	N	N
Residential	39669	9/20/2023	No	Unlikely	N	False	Y	N
Residential	16750	10/12/2023	No	Unlikely	N	True	N	N
Residential	42368	3/13/2024	No	Unlikely	N	False	Y	N
Residential	61447	9/21/2023	Yes	Unlikely	Y	False	Y	N
Institutional (schools/churches)	9154	10/27/2023	No	Unlikely	N	False	N	N
Residential	21122	9/11/2023	No	Unlikely	N	False	Y	N
Residential	3452	5/22/2024	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	19599	3/25/2024	No	Unlikely	N	False	N	N
Residential	35451	12/13/2023	Stagnant	Unlikely	N	False	N	N
Hotel w/ Restaurant	39915	11/9/2023	No	Unlikely	Y	False	N	N
Residential	35444	12/13/2023	No	Unlikely	N	False	N	N
Residential	22516	8/1/2023	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47292	10/27/2023	No	Unlikely	Y	True	N	N
Residential	18813	10/11/2023	No	Unlikely	N	False	Y	N
Other	20942	11/17/2023	No	Unlikely	N	False	N	N
Residential	16691	5/21/2024	Yes	Unlikely	N	False	Y	N
Residential	6735	7/31/2023	No	Unlikely	N	False	N	N
Residential	16346	10/12/2023	No	Unlikely	N	False	N	N
Other	45357	5/21/2024	Yes	Unlikely	N	False	N	N
Open Space	32322	12/1/2023	Yes	Unlikely	N	True	N	N
Other	6149	5/21/2024	Yes	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	60202	8/18/2023	Yes	Unlikely	Y	False	N	N
Residential	66672	7/28/2023	No	Unlikely	N	False	N	N
Residential	26009	10/31/2023	No	Unlikely	N	False	Y	N
Residential	64234	10/10/2023	No	Unlikely	N	False	Y	N
Residential	52925	5/2/2024	Stagnant	Unlikely	N	False	N	N
Residential	7163	11/17/2023	No	Unlikely	N	True	N	N

Residential	33992	12/28/2023	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47274	10/27/2023	No	Unlikely	Y	True	N	N
Residential	40930	4/25/2024	No	Unlikely	N	False	Y	N
Shopping Center	58926	9/29/2023	No	Unlikely	N	True	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47279	10/27/2023	No	Unlikely	Y	False	N	N
Residential	24777	11/8/2023	No	Unlikely	N	False	N	N
Shopping Center	10508	5/20/2024	No	Unlikely	Y	False	Y	N
Residential	26000	10/31/2023	No	Unlikely	N	False	N	N
Residential	54957	9/22/2023	No	Unlikely	N	True	Y	N
Residential	32713	9/20/2023	Stagnant	Unlikely	N	False	Y	N
Residential	38480	6/11/2024	No	Unlikely	N	False	Y	N
Other	24413	12/28/2023	Yes	Unlikely	N	False	N	N
Residential	3662	11/21/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	68750	9/19/2023	Stagnant	Unlikely	N	False	N	N
Open Space	32595	6/4/2024	No	Unlikely	N	True	Y	N
Residential	59286	6/13/2024	No	Unlikely	N	False	Y	N
Residential	6640	8/1/2023	No	Unlikely	N	False	N	N
Residential	46974	4/4/2024	Yes	Unlikely	N	False	Y	N
Residential	21523	7/28/2023	No	Unlikely	N	False	Y	N
Residential	54039	4/26/2024	No	Unlikely	N	False	Y	N
Residential	39705	8/10/2023	No	Unlikely	N	False	Y	N
Shopping Center	52647	8/18/2023	No	Unlikely	Y	False	N	N
Residential	46662	5/28/2024	No	Unlikely	N	False	Y	N
Residential	39714	8/10/2023	No	Unlikely	N	False	Y	N
Other	28202	3/20/2024	No	Unlikely	N	False	N	N
Institutional (schools/churches)	9143	10/26/2023	No	Unlikely	N	False	N	N
Residential	47743	3/12/2024	No	Unlikely	N	False	N	N
Shopping Center	42823	11/9/2023	No	Unlikely	Y	False	N	N
Residential	40945	4/25/2024	No	Unlikely	N	False	Y	N
Other	58656	6/13/2024	No	Unlikely	N	False	Y	N
Residential	21125	9/11/2023	No	Unlikely	N	False	Y	N
Residential	50002	10/18/2023	No	Unlikely	N	False	Y	N
Shopping Center	8083	10/26/2023	No	Unlikely	Y	False	N	N
Residential	16507	4/8/2024	Yes	Unlikely	N	False	Y	N
Residential	6116	10/3/2023	No	Unlikely	N	True	Y	N
Planned Industrial Park	28930	5/3/2024	Yes	Unlikely	Y	True	N	N
Residential	18853	5/28/2024	Stagnant	Unlikely	N	False	Y	N
Residential	18748	8/23/2023	No	Unlikely	N	True	N	N
Other	63364	5/20/2024	Stagnant	Unlikely	N	False	Y	N
Residential	23042	6/4/2024	No	Unlikely	N	False	Y	N
Other	14653	3/18/2024	No	Unlikely	N	True	N	N
Residential	31514	10/10/2023	No	Unlikely	N	False	N	N
Residential	51822	4/26/2024	No	Unlikely	N	False	Y	N
Residential	45397	8/23/2023	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	58957	6/13/2024	No	Unlikely	N	False	N	N
Residential	9974	3/26/2024	No	Unlikely	N	False	Y	N
Regional Mall	1645	3/15/2024	No	Unlikely	N	False	N	N
Residential	37672	10/13/2023	No	Unlikely	N	False	N	N
Gas Station	21517	11/9/2023	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	26310	7/28/2023	No	Unlikely	N	False	N	N
Residential	28386	9/14/2023	No	Unlikely	N	False	N	N
Residential	42357	3/13/2024	No	Unlikely	N	False	N	N
Other	30197	11/8/2023	Yes	Unlikely	N	False	N	N
Residential	61768	6/12/2024	No	Unlikely	N	False	N	N
Residential	42348	3/12/2024	Stagnant	Unlikely	N	False	N	N
Residential	46350	5/2/2024	No	Unlikely	N	False	N	N
Residential	15345	3/15/2024	Yes	Unlikely	N	False	N	N
Residential	26940	12/1/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	26354	4/11/2024	No	Unlikely	N	False	N	N
Residential	38618	5/28/2024	No	Unlikely	N	False	Y	N
Residential	35049	12/21/2023	No	Unlikely	N	False	N	N
Residential	43984	12/13/2023	Yes	Unlikely	N	False	Y	N
Shopping Center	36187	9/8/2023	No	Unlikely	Y	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	60414	7/28/2023	No	Unlikely	N	False	N	N
Other	31522	10/10/2023	Yes	Unlikely	N	False	N	N
Shopping Center	32959	8/23/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	30908	12/13/2023	Yes	Obvious	N	False	N	N
Open Space	3753	11/9/2023	No	Unlikely	N	True	Y	N
Residential	8215	10/4/2023	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	40771	10/26/2023	Yes	Unlikely	Y	False	N	N
Residential	56806	4/26/2024	No	Unlikely	N	False	Y	N
Open Space	3207	11/21/2023	No	Unlikely	N	False	N	N
Residential	39362	8/10/2023	Stagnant	Unlikely	N	False	Y	N
Residential	18757	8/23/2023	No	Unlikely	N	False	Y	N
Residential	39683	10/13/2023	No	Unlikely	N	False	Y	N
Residential	2218	5/22/2024	No	Unlikely	N	False	Y	N
Open Space	24732	11/8/2023	No	Unlikely	N	False	Y	N
Residential	6105	10/4/2023	No	Unlikely	N	False	Y	N
Residential	21898	8/22/2023	No	Unlikely	N	False	N	N
Residential	39719	8/10/2023	No	Unlikely	N	False	N	N
Institutional (schools/churches)	68777	11/21/2023	No	Unlikely	N	False	N	N
Residential	59263	6/12/2024	Yes	Unlikely	N	False	Y	N
Other	27530	11/20/2023	Yes	Unlikely	N	False	N	N
Residential	28	4/5/2024	No	Unlikely	N	False	N	N
Residential	43288	12/8/2023	No	Unlikely	N	False	Y	N
Open Space	21747	9/8/2023	No	Unlikely	N	False	N	N

Residential	36972	12/21/2023	Yes	Unlikely	N	False	N	N
Residential	32695	9/20/2023	No	Unlikely	N	False	N	N
Residential	6741	10/3/2023	No	Unlikely	N	False	N	N
Residential	44039	12/13/2023	Yes	Unlikely	N	False	Y	N
Residential	16403	11/17/2023	No	Unlikely	N	False	Y	N
Residential	16796	7/12/2023	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	28210	3/20/2024	Stagnant	Unlikely	N	False	Y	N
Open Space	20975	9/11/2023	No	Unlikely	N	False	Y	N
Residential	40085	10/31/2023	No	Unlikely	N	False	Y	N
Residential	3698	8/1/2023	No	Unlikely	N	True	N	N
Residential	43897	2/6/2024	No	Unlikely	N	False	Y	N
Residential	3225	11/30/2023	No	Unlikely	N	False	Y	N
Residential	13086	9/14/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	12788	8/18/2023	No	Unlikely	N	True	N	N
Residential	32715	9/19/2023	No	Unlikely	N	False	Y	N
Residential	55073	5/2/2024	No	Unlikely	N	False	N	N
Residential	61382	9/22/2023	No	Unlikely	N	True	Y	N
Residential	8283	10/11/2023	Yes	Obvious	Y	False	N	N
Open Space	13366	7/25/2023	No	Unlikely	N	False	N	N
Residential	6756	10/3/2023	No	Unlikely	N	False	N	N
Residential	6845	11/9/2023	No	Unlikely	N	False	N	N
Residential	52893	4/30/2024	Stagnant	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	47271	10/27/2023	No	Unlikely	N	False	Y	N
Other	39443	2/5/2024	Stagnant	Unlikely	N	False	Y	N
Residential	51266	3/26/2024	No	Unlikely	N	False	Y	N
Residential	31810	5/28/2024	No	Unlikely	N	False	Y	N
Residential	28601	9/14/2023	Stagnant	Unlikely	N	False	N	N
Residential	8817	3/26/2024	Stagnant	Unlikely	N	False	N	N
Residential	58665	6/13/2024	No	Unlikely	N	False	Y	N
Residential	38954	10/13/2023	No	Unlikely	N	False	N	N
Residential	9898	3/26/2024	Yes	Unlikely	N	True	Y	N
Residential	36593	10/18/2023	No	Unlikely	N	False	N	N
Residential	12911	7/25/2023	No	Unlikely	N	True	N	N
Institutional (schools/churches)	9149	10/27/2023	No	Unlikely	N	True	N	N
Residential	6635	7/25/2023	No	Unlikely	N	False	N	N
Residential	68422	10/4/2023	No	Unlikely	N	False	Y	N
Wholesale Warehousing	13580	11/9/2023	No	Unlikely	N	False	N	N
Residential	4533	6/13/2024	No	Unlikely	N	False	Y	N
Residential	39748	8/10/2023	No	Unlikely	N	False	N	N
Residential	20970	9/11/2023	No	Unlikely	N	False	Y	N
Residential	25111	9/19/2023	No	Unlikely	N	True	Y	N
Residential	1858	9/11/2023	No	Unlikely	N	False	Y	N
Residential	5952	10/4/2023	No	Unlikely	N	False	Y	N
Residential	24511	9/20/2023	No	Unlikely	N	False	N	N
Residential	63406	8/23/2023	No	Unlikely	N	False	N	N
Residential	28787	12/11/2023	No	Unlikely	N	False	Y	N
Shopping Center	62984	9/22/2023	No	Unlikely	Y	False	N	N
Regional Mall	25676	3/15/2024	Yes	Unlikely	Y	False	N	N
Other Industrial	28331	9/29/2023	Yes	Unlikely	N	False	N	N
Residential	8304	10/4/2023	No	Unlikely	N	True	N	N
Residential	31604	5/28/2024	Yes	Unlikely	N	False	Y	N
Residential	51817	3/27/2024	No	Unlikely	N	False	Y	N
Other	56786	10/3/2023	No	Unlikely	N	True	N	N
Residential	24391	12/21/2023	Yes	Unlikely	N	False	N	N
Residential	34757	11/17/2023	No	Unlikely	N	False	Y	N
Open Space	3760	11/9/2023	No	Unlikely	N	True	Y	N
Open Space	38447	6/11/2024	No	Unlikely	N	False	N	N
Residential	33406	4/5/2024	No	Unlikely	N	False	N	N
Residential	14565	11/17/2023	No	Unlikely	N	False	Y	N
Residential	51097	4/26/2024	No	Unlikely	N	False	Y	N
Other	30725	5/24/2024	No	Unlikely	N	True	N	N
Residential	24896	10/13/2023	Yes	Unlikely	N	False	N	N
Other	25769	10/30/2023	No	Unlikely	N	True	Y	N
Other	55250	10/27/2023	No	Unlikely	N	False	N	N
Residential	6831	11/8/2023	No	Unlikely	N	True	Y	N
Residential	18809	10/10/2023	Yes	Unlikely	N	False	Y	N
Residential	51801	3/27/2024	No	Unlikely	N	False	Y	N
Residential	18819	10/11/2023	No	Unlikely	N	False	Y	N
Shopping Center	39518	6/11/2024	No	Unlikely	N	False	N	N
Residential	31841	4/25/2024	No	Unlikely	N	False	Y	N
Residential	47587	4/30/2024	No	Unlikely	N	False	N	N
Open Space	12506	5/3/2024	Stagnant	Unlikely	N	False	N	N
Residential	16417	11/17/2023	No	Unlikely	N	False	N	N
Other	63366	5/17/2024	No	Unlikely	N	False	Y	N
Residential	39737	2/6/2024	Stagnant	Unlikely	N	True	N	N
Wholesale Warehousing	31636	10/12/2023	Stagnant	Unlikely	N	True	N	N
Residential	49990	10/18/2023	No	Unlikely	N	True	Y	N
Open Space	32580	11/6/2023	No	Unlikely	N	False	Y	N
Residential	34772	11/17/2023	No	Unlikely	N	False	Y	N
Residential	18730	5/28/2024	No	Unlikely	N	False	Y	N
Residential	40509	8/23/2023	No	Unlikely	N	False	Y	N
Residential	40059	2/5/2024	No	Unlikely	N	True	N	N
Residential	66316	6/11/2024	No	Unlikely	N	False	N	N
Residential	11228	10/4/2023	No	Unlikely	N	False	Y	N
Other	29908	10/30/2023	No	Unlikely	N	False	N	N
Gas Station	29795	8/15/2023	No	Unlikely	Y	False	N	N

Residential	25416	6/11/2024	Stagnant	Unlikely	N	False	N	N
Residential	13370	7/25/2023	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	42821	11/9/2023	No	Unlikely	Y	False	N	N
Residential	14929	8/18/2023	Yes	Unlikely	N	True	N	N
Other	57296	4/4/2024	Yes	Unlikely	N	False	N	N
Other Industrial	28321	9/29/2023	Yes	Unlikely	Y	True	N	N
Residential	38965	10/13/2023	No	Unlikely	N	False	Y	N
Residential	9244	11/8/2023	Yes	Unlikely	N	False	N	N
Institutional (schools/churches)	19601	3/25/2024	No	Unlikely	N	False	N	N
Open Space	27226	6/13/2024	No	Unlikely	N	False	N	N
Residential	19497	7/25/2023	Yes	Unlikely	N	False	N	N
Residential	12344	10/3/2023	No	Unlikely	N	False	Y	N
Open Space	6841	11/9/2023	No	Unlikely	N	False	Y	N
Other	28144	6/4/2024	No	Unlikely	N	False	Y	N
Open Space	25488	10/13/2023	No	Unlikely	N	False	Y	N
Residential	3700	8/1/2023	No	Unlikely	N	True	Y	N
Residential	56808	4/26/2024	No	Unlikely	N	False	Y	N
Residential	4835	7/25/2023	No	Unlikely	N	False	N	N
Other	68430	10/4/2023	No	Unlikely	N	False	N	N
Residential	27900	11/17/2023	No	Unlikely	N	True	Y	N
Residential	22119	6/4/2024	Stagnant	Unlikely	N	False	Y	N
Residential	7145	11/14/2023	No	Unlikely	N	False	Y	N
Other	47000	4/4/2024	Yes	Unlikely	N	False	Y	N
Other	39501	6/11/2024	No	Unlikely	N	False	N	N
Residential	28746	10/3/2023	No	Unlikely	N	False	Y	N
Residential	7555	7/25/2023	Yes	Unlikely	N	False	N	N
Residential	42341	3/13/2024	No	Unlikely	N	False	N	N
Other	24130	6/4/2024	No	Unlikely	N	False	Y	N
Residential	31499	10/10/2023	Yes	Unlikely	N	False	N	N
Residential	17866	11/6/2023	No	Unlikely	N	False	Y	N
Residential	2221	5/22/2024	No	Unlikely	N	False	Y	N
Residential	26003	10/31/2023	No	Unlikely	N	False	Y	N
Other	52723	9/19/2023	Stagnant	Unlikely	N	False	N	N
Residential	28535	4/8/2024	Yes	Unlikely	N	False	Y	N
Residential	16503	5/21/2024	Yes	Unlikely	N	False	N	N
Residential	46988	4/4/2024	No	Unlikely	N	False	Y	N
Residential	8769	3/26/2024	No	Unlikely	N	False	N	N
Residential	47740	3/12/2024	Yes	Unlikely	N	False	Y	N
Institutional (schools/churches)	27542	7/27/2023	Stagnant	Unlikely	N	False	N	N
Residential	19501	7/25/2023	No	Unlikely	N	False	N	N
Other	68427	10/4/2023	No	Unlikely	N	False	N	N
Residential	3213	11/21/2023	No	Unlikely	N	False	Y	N
Residential	49984	10/18/2023	No	Unlikely	N	False	N	N
Shopping Center	62906	9/22/2023	Stagnant	Unlikely	Y	False	Y	N
Residential	16412	11/17/2023	No	Unlikely	N	False	Y	N
Residential	19495	7/25/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	25242	4/10/2024	No	Unlikely	N	True	N	N
Hotel w/ Restaurant	5755-005	11/16/2023	No	Unlikely	Y	False	N	N
Other	28525	4/9/2024	Yes	Unlikely	N	False	N	N
Residential	6827	11/9/2023	No	Unlikely	N	False	Y	N
Other	24118	6/4/2024	No	Unlikely	N	False	Y	N
Other	31517	10/10/2023	No	Unlikely	N	False	N	N
Residential	430	10/11/2023	No	Unlikely	N	False	Y	N
Wholesale Warehousing	47231	3/25/2024	No	Unlikely	N	False	N	N
Residential	20293	5/28/2024	No	Unlikely	N	False	Y	N
Planned Industrial Park	22866	4/11/2024	No	Unlikely	N	False	N	N
Other	10412	8/22/2023	No	Unlikely	N	False	N	N
Residential	46800	12/8/2023	Yes	Unlikely	N	False	N	N
Other	20281	5/28/2024	No	Unlikely	N	False	Y	N
Hotel w/ Restaurant	54413	11/9/2023	No	Unlikely	N	False	N	N
Other	22868	4/11/2024	No	Unlikely	N	False	N	N
Open Space	19537	5/3/2024	No	Unlikely	N	True	N	N
Residential	52838	6/13/2024	Yes	Unlikely	N	False	Y	N
Gas Station	13613	8/18/2023	No	Unlikely	Y	False	N	N
Hotel w/ Restaurant	20327	10/27/2023	No	Unlikely	N	True	N	N
Residential	9978	3/26/2024	No	Unlikely	N	False	Y	N
Residential	43874	2/6/2024	No	Unlikely	N	False	N	N
Other	52844	6/13/2024	No	Unlikely	N	False	Y	N
Residential	39403	8/9/2023	No	Unlikely	N	False	Y	N
Residential	34580	3/27/2024	No	Unlikely	N	False	N	N
Residential	432	10/11/2023	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	36222	9/8/2023	Yes	Unlikely	N	False	N	N
Other	36230	9/8/2023	Yes	Unlikely	N	False	N	N
Residential	19499	7/25/2023	No	Unlikely	N	True	N	N
Residential	50500	6/4/2024	No	Unlikely	N	False	N	N
Open Space	68732	9/19/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	39466	5/3/2024	No	Unlikely	N	True	N	N
Planned Industrial Park	39498	5/3/2024	No	Unlikely	Y	True	N	N
Residential	5309	7/25/2023	No	Unlikely	N	False	N	N
Open Space	27139	11/6/2023	No	Unlikely	N	True	N	N
Open Space	13320	9/29/2023	No	Unlikely	N	False	N	N
Residential	39830	10/12/2023	No	Unlikely	Y	False	N	N
Residential	40954	4/25/2024	No	Unlikely	N	False	Y	N
Gas Station	50768	8/23/2023	Stagnant	Unlikely	N	False	N	N
Residential	38652	5/28/2024	No	Unlikely	N	False	Y	N
Residential	46343	5/2/2024	No	Unlikely	N	True	Y	N



Shopping Center	39925	11/9/2023	No	Unlikely	Y	False	N	N
Planned Industrial Park	28912	11/14/2023	No	Unlikely	N	False	N	N
Other	46007	6/11/2024	No	Unlikely	N	True	N	N
Residential	44041	12/13/2023	No	Unlikely	N	False	Y	N
Other	31520	10/10/2023	Yes	Unlikely	N	False	N	N
Other	45340	5/21/2024	Yes	Unlikely	N	False	N	N
Shopping Center	39507	6/11/2024	No	Unlikely	N	False	N	N
Residential	46306	8/1/2023	No	Unlikely	N	False	N	N
Residential	19690	11/30/2023	Stagnant	Unlikely	N	False	Y	N
Residential	42335	3/13/2024	No	Unlikely	N	False	N	N
Residential	4450	6/13/2024	No	Unlikely	N	True	N	N
Open Space	32314	12/1/2023	No	Unlikely	N	True	N	N
Residential	6157	5/21/2024	No	Unlikely	N	False	Y	N
Other	2775	10/27/2023	No	Unlikely	N	False	N	N
Residential	13089	9/14/2023	No	Unlikely	N	False	N	N
Residential	19029	5/2/2024	No	Unlikely	N	False	N	N
Residential	19025	4/30/2024	No	Unlikely	N	False	N	N
Residential	27812	9/14/2023	No	Unlikely	N	True	N	N
Residential	25972	10/31/2023	No	Unlikely	N	False	Y	N
Residential	56097	4/4/2024	No	Unlikely	N	False	Y	N
Residential	12341	10/3/2023	No	Unlikely	N	False	Y	N
Residential	8293	10/4/2023	No	Unlikely	N	False	N	N
Residential	26937	12/1/2023	No	Unlikely	N	False	N	N
Residential	16492	5/21/2024	Yes	Unlikely	N	False	Y	N
Residential	16484	5/21/2024	Yes	Unlikely	N	False	N	N
Other	24884	10/13/2023	No	Unlikely	N	False	Y	N
Residential	47601	4/30/2024	Stagnant	Unlikely	N	False	N	N
Other	14571	8/22/2023	No	Unlikely	N	False	N	N
Other	68093	9/29/2023	Yes	Unlikely	N	False	N	N
Residential	24373	12/21/2023	No	Unlikely	N	False	N	N
Residential	18838	5/28/2024	Stagnant	Unlikely	N	False	Y	N
Residential	39438	2/5/2024	Stagnant	Unlikely	N	False	N	N
Open Space	47233	10/27/2023	No	Unlikely	N	False	N	N
Residential	39413	2/6/2024	No	Unlikely	N	False	Y	N
Residential	9918	3/25/2024	Yes	Unlikely	N	False	N	N
Residential	24517	9/20/2023	No	Unlikely	N	False	N	N
Wholesale Warehousing	27613	8/22/2023	No	Unlikely	Y	False	N	N
Other	32085	10/10/2023	No	Unlikely	N	False	N	N
Residential	33988	12/28/2023	No	Unlikely	N	False	N	N
Other	52351	9/22/2023	No	Unlikely	N	True	Y	N
Residential	8298	10/4/2023	No	Unlikely	N	False	Y	N
Residential	13064	9/14/2023	No	Unlikely	N	False	N	N
Residential	8774	3/26/2024	No	Obvious	Y	True	Y	N
Hotel w/ Restaurant	10521	5/20/2024	No	Unlikely	Y	True	Y	N
Residential	52802	6/13/2024	No	Unlikely	N	True	Y	N
Other	6152	5/21/2024	No	Unlikely	N	False	N	N
Residential	16305	10/4/2023	Stagnant	Unlikely	N	False	N	N
Other	11829	11/9/2023	No	Unlikely	N	False	N	N
Regional Mall	6264	3/15/2024	No	Unlikely	N	False	N	N
Residential	39743	2/6/2024	No	Unlikely	N	False	N	N
Open Space	14660	3/15/2024	Yes	Unlikely	N	False	N	N
Residential	26837	5/28/2024	No	Unlikely	N	False	Y	N
Other	68651	5/2/2024	Yes	Unlikely	N	False	N	N
Residential	32625	6/4/2024	Stagnant	Unlikely	N	False	Y	N
Residential	34852	8/23/2023	Yes	Unlikely	N	False	Y	N
Residential	18887	8/23/2023	No	Unlikely	N	True	N	N
Residential	38958	10/13/2023	No	Unlikely	N	False	N	N
Other	27659	8/22/2023	No	Unlikely	N	True	N	N
Gas Station	20159	3/20/2024	No	Unlikely	Y	False	N	N
Residential	11779	8/23/2023	No	Unlikely	N	False	N	N
Residential	42330	3/13/2024	No	Unlikely	N	False	N	N
Other	58071	9/14/2023	No	Unlikely	N	True	N	N
Residential	16393	7/12/2023	No	Unlikely	N	False	Y	N
Residential	6644	7/31/2023	No	Unlikely	N	False	N	N
Residential	27503	11/20/2023	No	Unlikely	N	False	N	N
Residential	43899	2/6/2024	No	Unlikely	N	False	N	N
Residential	51271	3/26/2024	No	Unlikely	N	False	Y	N
Open Space	10436	8/22/2023	No	Unlikely	N	False	N	N
Residential	11230	10/4/2023	No	Unlikely	N	False	Y	N
Residential	16521	4/8/2024	Yes	Unlikely	N	False	N	N
Residential	9898	3/26/2024	Yes	Unlikely	N	True	Y	N
Residential	26925	12/1/2023	No	Unlikely	N	True	N	N
Open Space	26736	9/11/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	27640	8/22/2023	No	Unlikely	Y	False	N	N
Residential	18785	10/10/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	62115	11/14/2023	No	Unlikely	N	False	N	N
Residential	19597	3/25/2024	No	Unlikely	N	False	N	N
Residential	51052	3/26/2024	No	Unlikely	N	False	Y	N
Residential	35153	8/18/2023	No	Unlikely	N	True	N	N
Residential	14562	11/17/2023	No	Unlikely	N	False	Y	N
Residential	61489	3/21/2024	Yes	Unlikely	N	False	Y	N
Residential	16408	11/17/2023	No	Unlikely	N	True	Y	N
Residential	24730	11/9/2023	No	Unlikely	N	True	N	N
Residential	24410	12/28/2023	No	Unlikely	N	False	N	N
Residential	42186	3/26/2024	No	Unlikely	N	False	Y	N
Planned Industrial Park	13348	4/10/2024	Stagnant	Unlikely	Y	False	N	N

Wholesale Warehousing	38682	12/1/2023	No	Unlikely	N	False	N	N
Residential	43281	12/8/2023	No	Unlikely	N	False	Y	N
Residential	16184	8/22/2023	No	Unlikely	N	False	N	N
Residential	6838	11/9/2023	No	Unlikely	N	False	Y	N
Residential	24409	12/21/2023	Stagnant	Unlikely	N	False	N	N
Other	57293	4/5/2024	No	Unlikely	N	False	N	N
Other	28516	5/21/2024	Yes	Unlikely	N	False	N	N
Residential	5383	8/1/2023	No	Unlikely	N	False	N	N
Residential	16308	10/4/2023	No	Unlikely	N	False	N	N
Residential	28551	7/12/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	40260	8/14/2023	Stagnant	Obvious	Y	True	N	N
Residential	56775	9/29/2023	No	Unlikely	N	False	N	N
Residential	21526	7/28/2023	No	Unlikely	N	False	Y	N
Residential	26840	5/28/2024	No	Unlikely	N	False	Y	N
Institutional (schools/churches)	58970	9/29/2023	No	Unlikely	N	False	N	N
Residential	23052	6/4/2024	No	Unlikely	N	False	Y	N
Residential	40522	8/23/2023	No	Unlikely	N	False	N	N
Residential	36568	12/8/2023	No	Unlikely	N	False	Y	N
Planned Industrial Park	13813	3/27/2024	No	Unlikely	Y	False	N	N
Residential	23130	6/4/2024	No	Unlikely	N	False	Y	N
Residential	4367	6/13/2024	No	Unlikely	N	True	Y	N
Other	28815	12/11/2023	Yes	Unlikely	N	False	Y	N
Residential	20977	9/11/2023	No	Unlikely	N	False	Y	N
Other	12469	4/10/2024	Stagnant	Unlikely	N	False	N	N
Residential	39426	2/6/2024	No	Unlikely	N	False	Y	N
Planned Industrial Park	11330	8/15/2023	Stagnant	Unlikely	Y	True	N	N
Planned Industrial Park	13034	11/14/2023	No	Unlikely	Y	False	N	N
Shopping Center	21180	3/19/2024	Stagnant	Unlikely	Y	False	N	N
Residential	36588	10/18/2023	No	Unlikely	N	False	N	N
Residential	47745	3/13/2024	No	Unlikely	N	False	Y	N
Other	27661	8/22/2023	Yes	Unlikely	N	False	N	N
Residential	5414	8/1/2023	No	Unlikely	N	False	Y	N
Other	28538	4/9/2024	Yes	Unlikely	N	False	N	N
Residential	51075	4/26/2024	No	Unlikely	N	False	Y	N
Shopping Center	56453	9/19/2023	Stagnant	Unlikely	N	False	N	N
Residential	59774	3/27/2024	No	Unlikely	N	False	Y	N
Residential	15340	3/15/2024	Yes	Unlikely	N	False	N	N
Regional Mall	64095	11/2/2023	Stagnant	Unlikely	N	False	N	N
Residential	9929	3/26/2024	No	Unlikely	N	False	Y	N
Residential	39725	2/6/2024	No	Unlikely	N	False	Y	N
Residential	6747	9/29/2023	No	Unlikely	N	True	N	N
Shopping Center	42815	11/9/2023	No	Unlikely	Y	False	N	N
Other	30200	11/8/2023	Stagnant	Unlikely	N	False	N	N
Residential	38455	6/11/2024	No	Unlikely	N	False	Y	N
Residential	25396	8/18/2023	No	Unlikely	N	False	N	N
Residential	60412	10/3/2023	No	Unlikely	N	False	N	N
Other	27663	8/22/2023	No	Unlikely	N	False	N	N
Other	10434	8/22/2023	No	Unlikely	N	False	N	N
Other	58069	9/14/2023	No	Unlikely	N	False	N	N
Other	4441	6/13/2024	No	Unlikely	N	False	Y	N
Residential	32549	11/6/2023	No	Unlikely	N	True	Y	N
Residential	5409	8/1/2023	Stagnant	Unlikely	N	False	Y	N
Residential	68675	10/11/2023	No	Unlikely	N	False	Y	N
Residential	3429	5/24/2024	No	Unlikely	N	False	N	N
Residential	59764	4/25/2024	No	Unlikely	N	False	Y	N
Residential	38974	10/13/2023	No	Unlikely	N	False	Y	N
Residential	13358	7/25/2023	Yes	Unlikely	N	False	Y	N
Residential	51252	3/27/2024	No	Unlikely	N	False	Y	N
Shopping Center	32972	8/23/2023	Stagnant	Unlikely	N	False	N	N
Institutional (schools/churches)	62047	5/3/2024	No	Unlikely	N	True	N	N
Other	19623	9/29/2023	No	Unlikely	N	False	N	N
Residential	20973	9/11/2023	No	Unlikely	N	True	Y	N
Residential	39440	2/6/2024	No	Unlikely	N	False	N	N
Other	28129	6/4/2024	No	Unlikely	N	False	Y	N
Residential	17890	11/2/2023	No	Unlikely	N	False	Y	N
Other	65289	3/21/2024	No	Unlikely	N	False	N	N
Open Space	13159	11/21/2023	No	Unlikely	N	False	N	N
Residential	31045	3/13/2024	Stagnant	Unlikely	N	False	N	N
Open Space	20450	11/9/2023	No	Unlikely	N	False	N	N
Vehicle Sale/Repair/Miscellaneous Automotive	27627	8/22/2023	No	Unlikely	Y	False	N	N
Open Space	32083	10/10/2023	No	Unlikely	N	False	N	N
Residential	6843	11/9/2023	No	Unlikely	N	True	N	N
Residential	50738	8/23/2023	No	Unlikely	N	False	Y	N
Open Space	9158	10/26/2023	No	Unlikely	N	True	N	N
Wholesale Warehousing	21442	8/22/2023	No	Unlikely	Y	False	N	N
Other	58972	6/13/2024	No	Unlikely	N	False	N	N
Residential	49974	10/13/2023	Yes	Unlikely	N	False	Y	N
Other Industrial	28323	9/29/2023	No	Unlikely	N	False	N	N
Residential	47718	3/12/2024	Yes	Unlikely	N	False	N	N
Residential	33994	12/28/2023	No	Unlikely	N	False	N	N
Residential	46995	4/4/2024	Stagnant	Unlikely	N	False	Y	N
Shopping Center	39906	11/9/2023	No	Unlikely	N	True	N	N
Residential	6745	10/3/2023	No	Unlikely	N	False	N	N
Residential	24830	8/1/2023	Stagnant	Unlikely	N	False	N	N
Other	46002	6/11/2024	Yes	Unlikely	N	False	N	N
Residential	43878	2/6/2024	No	Unlikely	N	False	Y	N

Shopping Center	30690	5/24/2024	Yes	Unlikely	Y	False	N	N
Residential	65283	3/21/2024	Yes	Unlikely	N	False	N	N
Residential	43941	12/13/2023	Stagnant	Unlikely	N	False	Y	N
Other	66732	10/3/2023	No	Unlikely	N	False	N	N
Residential	24380	12/22/2023	No	Unlikely	N	False	N	N
Residential	39287	8/10/2023	Stagnant	Unlikely	N	False	Y	N
Other	27194	3/15/2024	Yes	Unlikely	N	False	N	N
Residential	28670	10/3/2023	No	Unlikely	N	False	N	N
Other	60416	7/28/2023	No	Unlikely	N	True	N	N
Residential	16803	7/12/2023	No	Unlikely	N	False	N	N
Residential	25406	6/11/2024	Yes	Unlikely	N	True	N	N
Open Space	49452	4/10/2024	Yes	Unlikely	N	False	N	N
Residential	16420	11/17/2023	No	Unlikely	N	False	N	N
Residential	50004	10/18/2023	No	Unlikely	N	False	Y	N
Residential	21892	8/23/2023	No	Unlikely	N	False	N	N
Planned Industrial Park	19411	4/11/2024	No	Unlikely	N	False	N	N

## **Appendix N**

### **Wet Weather Screening Reports**

## **Wet Weather Monitoring Report**

First Quarter 2024 (January 1 - March 31)

Event Date: March 9 - March 10

*Prepared for:*



### **Prince William County Department of Public Works**

5 County Complex Court, Suite 170

Prince William, Virginia 22192

*Prepared by:*

### **WSP USA Environment & Infrastructure, Inc.**

13530 Dulles Technology Drive, Suite 300

Herndon, VA 20171

(703) 742-5700

April 1, 2024

Project No. 151280003

## 1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q1 sampling event that occurred on from March 9 – 10, 2024 as well as the findings from the water quality analysis results of the sampling events.

## 2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

### SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

### SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on March 8<sup>th</sup>, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe.

Rain gage data were compiled from monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:



Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \text{ [ US ]}$$

Q = Flow rate  
A = Flow area  
V = Avg. velocity  
S = Water surface slope

R = Hydraulic Radius  
n = Roughness coefficient  
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's  $n$  value of 0.013 was assumed for the concrete pipes<sup>1</sup>. Two sampling programs were implemented to accommodate for different conditions between the sites.

### Manassas Sampling Program

Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the event, the sampling was set as a time-paced program to collect discrete samples every half hour, then composited into a single container.

### Dale City Sampling Program

During the event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every half hour, then composited into a single container.

---

<sup>1</sup> Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

### 3.0 RESULTS

#### SITE #941; MANASSAS, VA

Sampling occurred from 13:30 on March 9, 2024 to 00:50 on March 10, 2024. Weather Underground Station KVAMANAS225 in Manassas, VA recorded 1.7 inches of precipitation over this same period. The previous storm event was recorded on March 7, 2024, producing 0.05 inches of precipitation.

#### SITE #4684; DALE CITY, VA

Sampling occurred from 12:40 on March 9, 2024 to 00:10 on March 10, 2024. Weather Underground Station KVAWOODB86 in Woodbridge, VA recorded 0.76 inches of precipitation over this same period. The previous storm event was recorded on March 7, 2024, producing 0.01 inches of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on March 12, 2024.

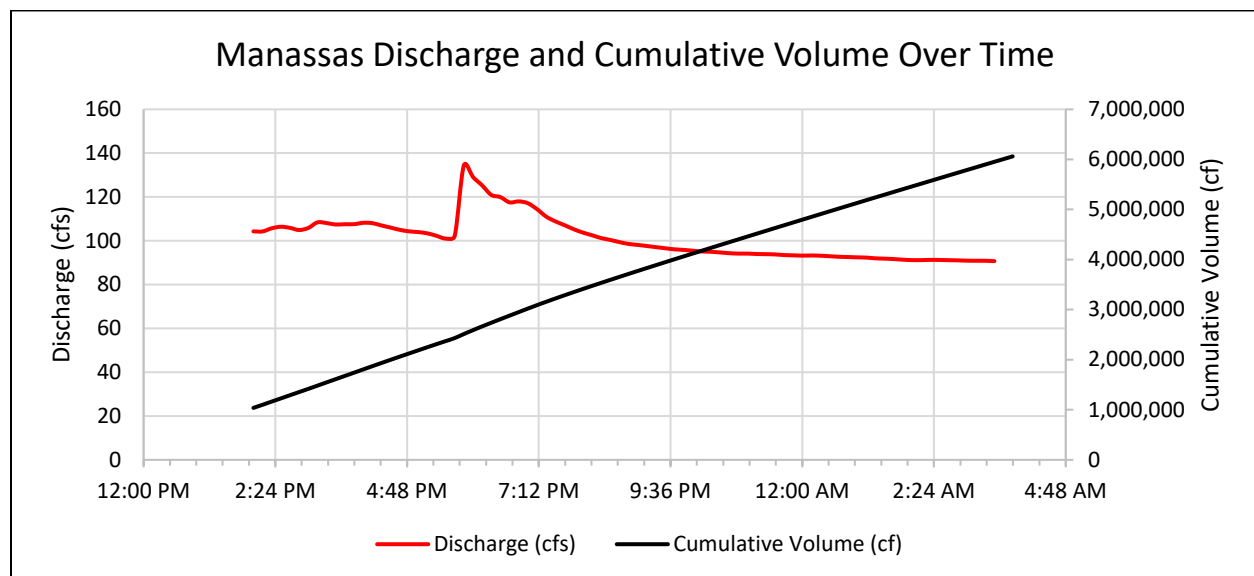
### 3.1 FLOW DATA

#### SITE #941; MANASSAS, VA

Flow rate reached 134.4 cfs. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

**Figure 1: Flow data over time for the storm event at Site #941 on March 9 to 10, 2024**



**Table 1: Summary of Flow Weighted Composite – Site #941**

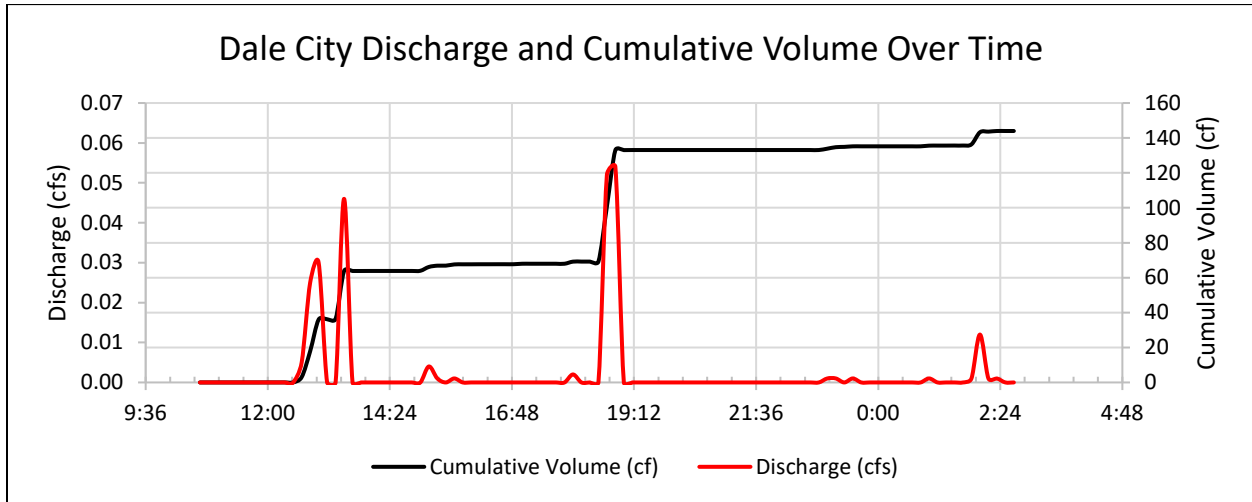
Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	3/9/2024 13:30	62,791.80	4.20%	209.82
2	3/9/2024 13:50	62,815.10	4.20%	209.90
3	3/9/2024 14:20	63,422.80	4.24%	211.93
4	3/9/2024 14:50	62,955.20	4.21%	210.37
5	3/9/2024 15:20	64,856.30	4.33%	216.72
6	3/9/2024 15:50	64,549.90	4.31%	215.70
7	3/9/2024 16:20	64,196.90	4.29%	214.52
8	3/9/2024 16:50	62,582.00	4.18%	209.12
9	3/9/2024 17:20	61,374.40	4.10%	205.08
10	3/9/2024 17:50	80,613.40	5.39%	269.37
11	3/9/2024 18:20	72,574.80	4.85%	242.51
12	3/9/2024 18:50	70,794.60	4.73%	236.56
13	3/9/2024 19:20	66,633.80	4.45%	222.66
14	3/9/2024 19:50	63,188.80	4.22%	211.15
15	3/9/2024 20:20	60,750.70	4.06%	203.00
16	3/9/2024 20:50	59,144.30	3.95%	197.63
17	3/9/2024 21:20	58,256.00	3.89%	194.66
18	3/9/2024 21:50	57,508.10	3.84%	192.17
19	3/9/2024 22:20	56,989.00	3.81%	190.43
20	3/9/2024 22:50	56,494.10	3.78%	188.78
21	3/9/2024 23:20	56,336.90	3.77%	188.25
22	3/9/2024 23:50	56,023.10	3.74%	187.20
23	3/10/2024 0:20	55,911.20	3.74%	186.83
24	3/10/2024 0:50	55,553.60	3.71%	185.63

\*5.0 L sample

**SITE #4684; DALE CITY, VA**

Flow rate reached 0.054 cfs with three predominate peaks. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

**Figure 2: Flow data over time for the storm event at Site #4684 on March 9 to 10, 2024**



**Table 2: Summary of Flow Weighted Composite – Site #4684**

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	3/9/2024 12:40	14.813	30.68%	613.55
2	3/9/2024 13:10	0.157	0.33%	6.50
3	3/9/2024 13:40	0	0.00%	-
4	3/9/2024 14:10	0	0.00%	-
5	3/9/2024 14:40	0	0.00%	-
6	3/9/2024 15:10	0.739	1.53%	30.61
7	3/9/2024 15:40	0.065	0.13%	2.69
8	3/9/2024 16:10	0	0.00%	-
9	3/9/2024 16:40	0	0.00%	-
10	3/9/2024 17:10	0	0.00%	-
11	3/9/2024 17:40	0	0.00%	-
12	3/9/2024 18:10	0.002	0.00%	0.08
13	3/9/2024 18:40	32.337	66.97%	1,339.39**
14	3/9/2024 19:10	0	0.00%	-
15	3/9/2024 19:40	0	0.00%	-
16	3/9/2024 20:10	0	0.00%	-
17	3/9/2024 20:40	0	0.00%	-
18	3/9/2024 21:10	0	0.00%	-
19	3/9/2024 21:40	0	0.00%	-
20	3/9/2024 22:10	0	0.00%	-
21	3/9/2024 22:40	0	0.00%	-
22	3/9/2024 23:10	0.173	0.36%	7.17
23	3/9/2024 23:40	0	0.00%	-
24	3/10/2024 0:10	0	0.00%	-

\*2.0 L sample

\*\*Each sample bottle contains 1000ml. Remaining 339.39 ml is from sample bottle 12.

### 3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

**Table 3: Analytical Parameters**

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

**Table 4: Results of Water Quality Analysis**

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	32.2	µg/L	5.0	13	a
	Lead	10.7	µg/L	5.0	120	a
	Nickel	12.1	µg/L	5.0	180	a
	Zinc	101	µg/L	10.0	120	a
	Total Suspended Solids	129	mg/L	4.9	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	0.64	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.22	mg/L	0.040	-	-
	Total Nitrogen	0.86	mg/L	0.040	2.2	c
	Phosphorus, Total	0.15	mg/L	0.050	2	b
	Chemical Oxygen Demand	62.2	mg/L	25	120	b
	pH	7.6	Std. Units	0.10	6.0-9.0	d
	Dale City (#4684)	Copper	14.4	µg/L	5.0	13
Lead		ND	µg/L	5.0	120	a
Nickel		ND	µg/L	5.0	180	a
Zinc		125	µg/L	10.0	120	a
Total Suspended Solids		95.5	mg/L	2.5	100	b
Nitrogen, Ammonia		0.10	mg/L	0.10	-	-
Nitrogen, Kjeldahl, Total		0.61	mg/L	0.50	-	-
Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>		0.24	mg/L	0.040	-	-
Total Nitrogen		0.84	mg/L	0.040	2.2	c
Phosphorus, Total		0.089	mg/L	0.050	2	b
Chemical Oxygen Demand		70.3	mg/L	25.0	120	b
pH		7.1	Std. Units	0.10	6.0-9.0	d

<sup>a</sup> State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.

<sup>b</sup> Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.

<sup>c</sup> The sum of Nitrogen as Ammonia, NO<sub>2</sub>, NO<sub>3</sub>, and Total Kjeldahl Nitrogen.

<sup>d</sup> Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.

\* Values highlighted in red were found to be in exceedance of their respective criterion.

ND = The analyte was not detected above specified reporting limit.

### 4.0 SUMMARY

As indicated in **Table 4**, an exceedance occurred for copper and total suspended solids at Manassas and copper and zinc at Dale City. Exceedance tracking for parameters of concern are illustrated in **Figure 3** below.

**Figure 3: Exceedance Tracking for the Wet Weather Monitoring Program**

	2016		2017				2018				2019				2020				2021				2022				2023				2024				
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1				
Manassas (#5941)	Copper	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x				x	x		x	x	x	x	x	x	x			
	Lead																																		
	Nickel																																		
	Zinc	x			x	x	x	x	x							x	x								x	x									
	Total Suspended Solids							x	x							x	x								x	x						x			
	Total Nitrogen					x	x	x				x																							
	Phosphorus, Total																																		
	Chemical Oxygen Demand		x					x	x							x											x	x							
	pH							x																											
	Dale City (#4684)	Copper	x			x	x	x	x	x	--		x	x																				x	
Lead										--																									
Nickel										--																									
Zinc					x		x	x	x	--																								x	
Total Suspended Solids																																			
Total Nitrogen		x	x	x	x		x	x	--				x																					x	
Phosphorus, Total										--																									
Chemical Oxygen Demand								x	x	--																									
pH			x							--																									

\* No sample collected at #4684 during Q2 2018.



**APPENDIX A**  
**PHOTO LOG OF SITE CONDITIONS**

**Wet Weather Monitoring Q1 Report  
Prince William County, VA  
Photographic Log**



**Site:** Dale City Station

**Photo: 1**

**Date:** 3/8/2024

**Description:** Dale City sampler set up overview.



**Site:** Dale City Station

**Photo: 2**

**Date:** 3/8/2024

**Description:** Dale City outfall, downstream. Note Iron-oxidizing bacteria growth and staining along footing and eroded outlet protection.



Photographic Log

Prince William County Wet Weather Monitoring Q1  
Project No. 151280003

April 1, 2024  
Prince William County, VA



**Site:** Manassas Station

**Photo:** 3

**Date:** 3/8/2024

**Description:** Manassas downstream of outfall. Note ponded water, trash, and dull sheen.



**Site:** Manassas Station

**Photo:** 4

**Date:** 3/8/2024

**Description:** Manassas outfall with ring installed. Note ponded water and graffiti.

**APPENDIX B**  
**WATER QUALITY LABORATORY RESULTS**



March 19, 2024

Ilana Ton  
WSP USA  
13530 Dulles Technology Drive  
Suite 300  
Herndon, VA 20171

RE: Project: Prince William Cty 3/10/24  
Pace Project No.: 92718403

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on March 12, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Eben Buchanan  
eben.buchanan@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Prince William Cty 3/10/24  
Pace Project No.: 92718403

---

### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
North Carolina Drinking Water Certification #: 37712  
North Carolina Wastewater Certification #: 40

South Carolina Laboratory ID: 99030  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Prince William Cty 3/10/24  
Pace Project No.: 92718403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92718403001	MAN	Water	03/10/24 15:00	03/12/24 12:27
92718403002	DAL	Water	03/10/24 14:30	03/12/24 12:27

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Prince William Cty 3/10/24  
 Pace Project No.: 92718403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92718403001	MAN	EPA 200.7 Rev 4.4 1994	SBW	4	PASI-A
		SM 2540D-2011	JAY	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	KDF1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	EGC	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A
		92718403002	DAL	EPA 200.7 Rev 4.4 1994	SBW
SM 2540D-2011	JAY			1	PASI-A
EPA 9040C	SMS			1	PASI-A
TKN+NO3+NO2 Calculation	KDF1			1	PASI-A
EPA 350.1 Rev 2.0 1993	ARJ			1	PASI-A
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A
EPA 353.2 Rev 2.0 1993	EGC			1	PASI-A
EPA 365.1 Rev 2.0 1993	ZJP			1	PASI-A
SM 5220D-2011	JP1			1	PASI-A

PASI-A = Pace Analytical Services - Asheville

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

Sample: MAN	Lab ID: 92718403001	Collected: 03/10/24 15:00	Received: 03/12/24 12:27	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>		Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville						
Copper	32.2	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:01	7440-50-8	
Lead	10.7	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:01	7439-92-1	
Nickel	12.1	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:01	7440-02-0	
Zinc	101	ug/L	10.0	1	03/13/24 12:50	03/14/24 12:01	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	129	mg/L	4.9	1		03/14/24 10:55		
<b>9040 pH</b>		Analytical Method: EPA 9040C Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.6	Std. Units	0.10	1		03/15/24 11:22		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	0.86	mg/L	0.040	1		03/19/24 08:46		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	1		03/16/24 13:22	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	0.64	mg/L	0.50	1	03/14/24 17:56	03/15/24 04:02	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.22	mg/L	0.040	1		03/16/24 17:45		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	0.15	mg/L	0.050	1	03/13/24 22:02	03/14/24 13:48	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	62.2	mg/L	25.0	1	03/16/24 01:56	03/16/24 06:04		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

Sample: DAL	Lab ID: 92718403002	Collected: 03/10/24 14:30	Received: 03/12/24 12:27	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>		Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville						
Copper	14.4	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:10	7440-50-8	
Lead	ND	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:10	7439-92-1	
Nickel	ND	ug/L	5.0	1	03/13/24 12:50	03/14/24 12:10	7440-02-0	
Zinc	125	ug/L	10.0	1	03/13/24 12:50	03/14/24 12:10	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	95.5	mg/L	2.5	1		03/14/24 10:56		
<b>9040 pH</b>		Analytical Method: EPA 9040C Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.1	Std. Units	0.10	1		03/15/24 11:24		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	0.84	mg/L	0.040	1		03/19/24 08:46		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	0.10	mg/L	0.10	1		03/16/24 13:24	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	0.61	mg/L	0.50	1	03/14/24 17:56	03/15/24 04:07	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.24	mg/L	0.040	1		03/16/24 17:47		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	0.089	mg/L	0.050	1	03/13/24 22:02	03/14/24 13:50	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	70.3	mg/L	25.0	1	03/19/24 02:13	03/19/24 05:48		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	838649	Analysis Method:	EPA 200.7 Rev 4.4 1994
QC Batch Method:	EPA 200.7 Rev 4.4 1994	Analysis Description:	200.7 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4331791 Matrix: Water

Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	03/14/24 11:41	
Lead	ug/L	ND	5.0	03/14/24 11:41	
Nickel	ug/L	ND	5.0	03/14/24 11:41	
Zinc	ug/L	ND	10.0	03/14/24 11:41	

LABORATORY CONTROL SAMPLE: 4331792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	509	102	85-115	
Lead	ug/L	500	498	100	85-115	
Nickel	ug/L	500	502	100	85-115	
Zinc	ug/L	500	503	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4332090 4332091

Parameter	Units	92718403001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	10.7	500	500	483	525	94	103	70-130	8	20	
Nickel	ug/L	12.1	500	500	487	529	95	103	70-130	8	20	
Zinc	ug/L	101	500	500	576	622	95	104	70-130	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4332092 4332093

Parameter	Units	92718403002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	523	512	104	102	70-130	2	20	
Nickel	ug/L	ND	500	500	531	520	106	103	70-130	2	20	
Zinc	ug/L	125	500	500	654	640	106	103	70-130	2	20	

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	838914	Analysis Method:	SM 2540D-2011
QC Batch Method:	SM 2540D-2011	Analysis Description:	2540D Total Suspended Solids
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4333429 Matrix: Water  
 Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	03/14/24 10:53	

LABORATORY CONTROL SAMPLE: 4333430

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	262	105	90-110	

SAMPLE DUPLICATE: 4333668

Parameter	Units	92718403002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	95.5	99.5	4	10	

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch: 839059

Analysis Method: EPA 9040C

QC Batch Method: EPA 9040C

Analysis Description: 9040 pH

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

SAMPLE DUPLICATE: 4334155

Parameter	Units	92717332001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	10	H3

SAMPLE DUPLICATE: 4334156

Parameter	Units	92717900001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	10	H3

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	839042	Analysis Method:	EPA 350.1 Rev 2.0 1993
QC Batch Method:	EPA 350.1 Rev 2.0 1993	Analysis Description:	350.1 Ammonia
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4334057 Matrix: Water

Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	03/16/24 13:02	

LABORATORY CONTROL SAMPLE: 4334058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4334059 4334060

Parameter	Units	92718270001		4334060		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	23.9	5	5	29.1	29.1	104	104	90-110	0	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4334061 4334062

Parameter	Units	92718270002		4334062		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Ammonia	mg/L	22.6	5	5	27.6	27.8	100	105	90-110	1	10

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	838991	Analysis Method:	EPA 351.2 Rev 2.0 1993
QC Batch Method:	EPA 351.2 Rev 2.0 1993	Analysis Description:	351.2 TKN
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4333781 Matrix: Water

Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	03/15/24 03:40	

LABORATORY CONTROL SAMPLE: 4333782

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4333783 4333784

Parameter	Units	92718403001		4333783		4333784		% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, Kjeldahl, Total	mg/L	0.64	10	10	10.6	10.6	100	99	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4333785 4333786

Parameter	Units	92718403002		4333785		4333786		% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, Kjeldahl, Total	mg/L	0.61	10	10	10.7	11.0	101	104	90-110	3	10	

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**QUALITY CONTROL DATA**

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	839568	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, preserved
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4337013 Matrix: Water

Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	03/16/24 17:20	

LABORATORY CONTROL SAMPLE: 4337014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4337015 4337016

Parameter	Units	4337015		4337016		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	92717867002 6.6	2.5	8.6	2.5	80	8.5	78	90-110	1	10	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4337017 4337018

Parameter	Units	4337017		4337018		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	92717867003 0.87	2.5	3.3	2.5	98	3.4	99	90-110	1	10		

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch:	838674	Analysis Method:	EPA 365.1 Rev 2.0 1993
QC Batch Method:	EPA 365.1 Rev 2.0 1993	Analysis Description:	365.1 Phosphorus, Total
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001, 92718403002

METHOD BLANK: 4331971 Matrix: Water

Associated Lab Samples: 92718403001, 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	03/14/24 13:08	

LABORATORY CONTROL SAMPLE: 4331972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4331973 4331974

Parameter	Units	4331973		4331974		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	2.5	2.5	4.7	4.7	91	87	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4331975 4331976

Parameter	Units	4331975		4331976		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.61	2.5	2.0	2.9	57	91	90-110	35	10	M1,R1

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**QUALITY CONTROL DATA**

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch: 839216

Analysis Method: SM 5220D-2011

QC Batch Method: SM 5220D-2011

Analysis Description: 5220D COD

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92718403001

METHOD BLANK: 4335050

Matrix: Water

Associated Lab Samples: 92718403001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	03/16/24 05:58	

LABORATORY CONTROL SAMPLE: 4335051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	750	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4335052 4335053

Parameter	Units	92716672001		4335052		4335053		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Chemical Oxygen Demand	mg/L	ND	100	100	118	116	107	105	90-110	2	3	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4335054 4335055

Parameter	Units	92718349003		4335054		4335055		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Chemical Oxygen Demand	mg/L	31.9	100	100	151	151	119	119	90-110	0	3 M1	

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### QUALITY CONTROL DATA

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

QC Batch: 839520

Analysis Method: SM 5220D-2011

QC Batch Method: SM 5220D-2011

Analysis Description: 5220D COD

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92718403002

METHOD BLANK: 4336868

Matrix: Water

Associated Lab Samples: 92718403002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	03/19/24 05:41	

LABORATORY CONTROL SAMPLE: 4336869

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	766	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4336870 4336871

Parameter	Units	92716903001		MS		MSD		% Rec		Limits		Max	
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec	RPD	RPD	Qual	
Chemical Oxygen Demand	mg/L	58.6	100	100	100	173	175	114	117	90-110	1	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4336872 4336873

Parameter	Units	92716903002		MS		MSD		% Rec		Limits		Max	
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec	RPD	RPD	Qual	
Chemical Oxygen Demand	mg/L	101	100	100	100	217	215	117	114	90-110	1	3	M1

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## QUALIFIERS

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Prince William Cty 3/10/24

Pace Project No.: 92718403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92718403001	MAN	EPA 200.7 Rev 4.4 1994	838649	EPA 200.7 Rev 4.4 1994	838777
92718403002	DAL	EPA 200.7 Rev 4.4 1994	838649	EPA 200.7 Rev 4.4 1994	838777
92718403001	MAN	SM 2540D-2011	838914		
92718403002	DAL	SM 2540D-2011	838914		
92718403001	MAN	EPA 9040C	839059		
92718403002	DAL	EPA 9040C	839059		
92718403001	MAN	TKN+NO3+NO2 Calculation	839964		
92718403002	DAL	TKN+NO3+NO2 Calculation	839964		
92718403001	MAN	EPA 350.1 Rev 2.0 1993	839042		
92718403002	DAL	EPA 350.1 Rev 2.0 1993	839042		
92718403001	MAN	EPA 351.2 Rev 2.0 1993	838991	EPA 351.2 Rev 2.0 1993	839206
92718403002	DAL	EPA 351.2 Rev 2.0 1993	838991	EPA 351.2 Rev 2.0 1993	839206
92718403001	MAN	EPA 353.2 Rev 2.0 1993	839568		
92718403002	DAL	EPA 353.2 Rev 2.0 1993	839568		
92718403001	MAN	EPA 365.1 Rev 2.0 1993	838674	EPA 365.1 Rev 2.0 1993	838919
92718403002	DAL	EPA 365.1 Rev 2.0 1993	838674	EPA 365.1 Rev 2.0 1993	838919
92718403001	MAN	SM 5220D-2011	839216	SM 5220D-2011	839515
92718403002	DAL	SM 5220D-2011	839520	SM 5220D-2011	839910

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### CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>  
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Wood/WSP		Billing Information:	
Address: 13530 Dulles Technology Dr #300, Herndon, VA 20171		Attn: lisa.weisert@wsp.com	
Report To: Ilana Ton		Email To: ilana.ton@wsp.com	
Copy To:		Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA	
Customer Project Name/Number: Prince William County/ 151280003.0002.****, ORG 7526, GL Code 5730-00		State: VA	Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: 703 488 3778	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No	
Email: ilana.ton@wsp.com	Purchase Order #:	DW PWS ID #:	
Collected By (print):	Quote #:	DW Location Code:	
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [X] Yes [ ] No	
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day	Field Filtered (if applicable): [ ] Yes [ ] No	
Analysis: _____			

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
MAN	OT-Water	Comp			3/10/2024	1500		5	P X X x x x
DAL	OT-Water	Comp			3/10/2024	1430		5	P X X x x x

LAB USE ONLY- Affix We

# WO#: 92718403

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Container Preservative Type:

U	1	2	2	U									
---	---	---	---	---	--	--	--	--	--	--	--	--	--

\*\* Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other \_\_\_\_\_

Analyses	Lab Profile/Line:	
	SM 2540D-2015 TSS	200.7 Metals
EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	LAB USE ONLY: Lab Sample # / Comments: <b>WO# 92718403</b> <b>-001</b> <b>-002</b>
SM 4500-H+B-2011 pH		

Customer Remarks / Special Conditions / Possible Hazards:  
Prince William County/  
151280003.0002.\*\*\*\*, ORG 7526, GL Code 5730-00  
Pace PM Sara Poulson  
200.7: Cu, Pb, Ni, Zn

Type of Ice Used:  Wet  Blue  Dry  None

Packing Material Used: **none**

Radchem sample(s) screened (<500 cpm): Y N  NA

SHORT HOLDS PRESENT (<72 hours): Y N  N/A

Lab Tracking #: \_\_\_\_\_

Samples received via: **AR 3-12-24**

FEDEX  UPS  Client  Courier  Pace Courier

LAB Sample Temperature Info:  
Temp Blank Received: Y  N  NA   
Therm ID#: **931082**  
Cooler 1 Temp Upon Receipt: **4.9** °C  
Cooler 1 Therm Corr. Factor: **0.0** °C  
Cooler 1 Corrected Temp: **4.9** °C  
Comments:

Relinquished by/Company: (Signature) Ilana Ton/WSP	Date/Time: 3/11/2024 1100	Received by/Company: (Signature) A. Rucker/PACE/AVL	Date/Time: 3-12-24 1227	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N  NA   
HCL MeOH TSP Other

Non Conformance(s): YES /  NO   
Page: 1 of: 1



DC#\_ Title: ENV-FRM-HUN1-0083 v03\_Sample Condition Upon Receipt

Effective Date: 12/01/2023

\*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

\*\*Bottom half of box is to list number of bottles

\*\*\* Check all unpreserved Nitrates for chlorine

Project # **WO#: 92718403**

PM: EDB Due Date: 03/19/24

CLIENT: 92-Amec VA

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP45-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1	✓			1		✓																							
2	✓			1		✓																							
3	✓																												
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Office of hold, incorrect preservative, out of temp, incorrect containers.

---

**Wet Weather Monitoring Report**  
Second Quarter 2024 (April 1 – June 30)  
Event Date: July 12, 2024

*Prepared for:*



**Prince William County Department of Public Works**  
5 County Complex Court, Suite 170  
Prince William, Virginia 22192

*Prepared by:*

**WSP USA Environment & Infrastructure, Inc.**  
13530 Dulles Technology Drive, Suite 300  
Herndon, VA 20171  
(703) 742-5700

August 27, 2024  
Project No. 151280003

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## 1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q2 make up sampling event that occurred on from July 12, 2024 as well as the findings from the water quality analysis results of the sampling event.

## 2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

### SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

### SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on July 10<sup>th</sup>, programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe.

Rain gage data were compiled from monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \text{ [ US ]}$$

Q = Flow rate  
A = Flow area  
V = Avg. velocity  
S = Water surface slope

R = Hydraulic Radius  
n = Roughness coefficient  
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's  $n$  value of 0.013 was assumed for the concrete pipes<sup>1</sup>. Two sampling programs were implemented to accommodate for different conditions between the sites.

### Manassas Sampling Program

Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the event, the sampling was set as a time-paced program to collect discrete samples every half hour, then composited into a single container.

### Dale City Sampling Program

During the event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every half hour, then composited into a single container.

---

<sup>1</sup> Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

### **3.0 RESULTS**

#### **STORM FORECAST AND SAMPLING**

The storm forecasted on July 10, 2024 ended up being larger than forecasted and did generate runoff at both sites based on the flow data captured by the samplers. The sampler did not sample for the July 10, 2024 storm since they were programmed to collect for the July 12, 2024 storm. The July 10, 2024 storm occurred within the 48-hour antecedent dry weather period prior to the July 12, 2024 storm.

#### **SITE #941; MANASSAS, VA**

Sampling occurred from 03:00 on July 12, 2024 to 14:30 on July 12, 2024. Weather Underground Station KVAMANAS225 in Manassas, VA recorded 0.66 inches of precipitation over this same period. The previous storm event was recorded on July 10, 2024, producing 0.81 inches of precipitation.

#### **SITE #4684; DALE CITY, VA**

Sampling occurred from 10:30 on July 12, 2024 to 22:00 on July 12, 2024. Weather Underground Station KVAWOODB86 in Woodbridge, VA recorded 0.43 inches of precipitation over this same period. The previous storm event was recorded on July 10, 2024, producing 0.33 inches of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC.

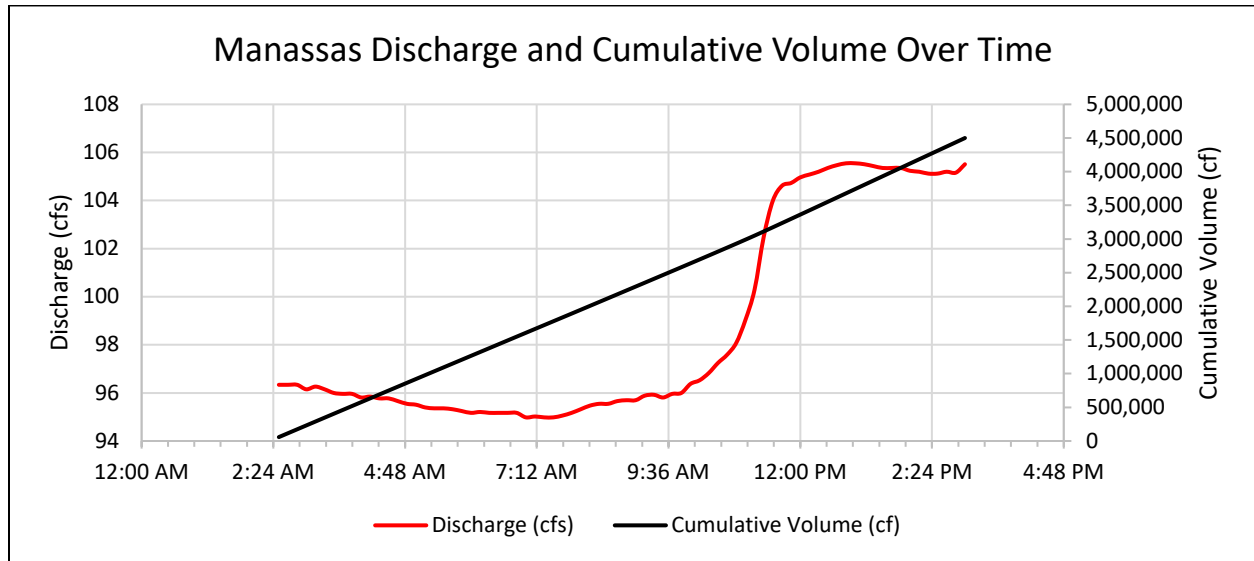
### **3.1 FLOW DATA**

#### **SITE #941; MANASSAS, VA**

Flow rate reached 105.5 cfs. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

**Figure 1: Flow data over time for the storm event at Site #941 on July 12, 2024**



**Table 1: Summary of Flow Weighted Composite – Site #941**

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	7/12/2024 3:00	57,689.10	4.06%	203.2
2	7/12/2024 3:30	57,598.60	4.06%	202.9
3	7/12/2024 4:00	57,485.50	4.05%	202.5
4	7/12/2024 4:30	57,462.90	4.05%	202.4
5	7/12/2024 5:00	57,304.80	4.04%	201.9
6	7/12/2024 5:30	57,214.50	4.03%	201.6
7	7/12/2024 6:00	57,101.70	4.02%	201.2
8	7/12/2024 6:30	57,101.70	4.02%	201.2
9	7/12/2024 7:00	56,989.00	4.02%	200.8
10	7/12/2024 7:30	56,989.00	4.02%	200.8
11	7/12/2024 8:00	57,191.90	4.03%	201.5
12	7/12/2024 8:30	57,327.40	4.04%	202.0
13	7/12/2024 9:00	57,417.70	4.05%	202.3
14	7/12/2024 9:30	57,485.50	4.05%	202.5
15	7/12/2024 10:00	57,825.00	4.07%	203.7
16	7/12/2024 10:30	58,346.80	4.11%	205.6
17	7/12/2024 11:00	59,418.60	4.19%	209.3
18	7/12/2024 11:30	62,395.70	4.40%	219.8
19	7/12/2024 12:00	62,978.50	4.44%	221.9
20	7/12/2024 12:30	63,212.20	4.45%	222.7



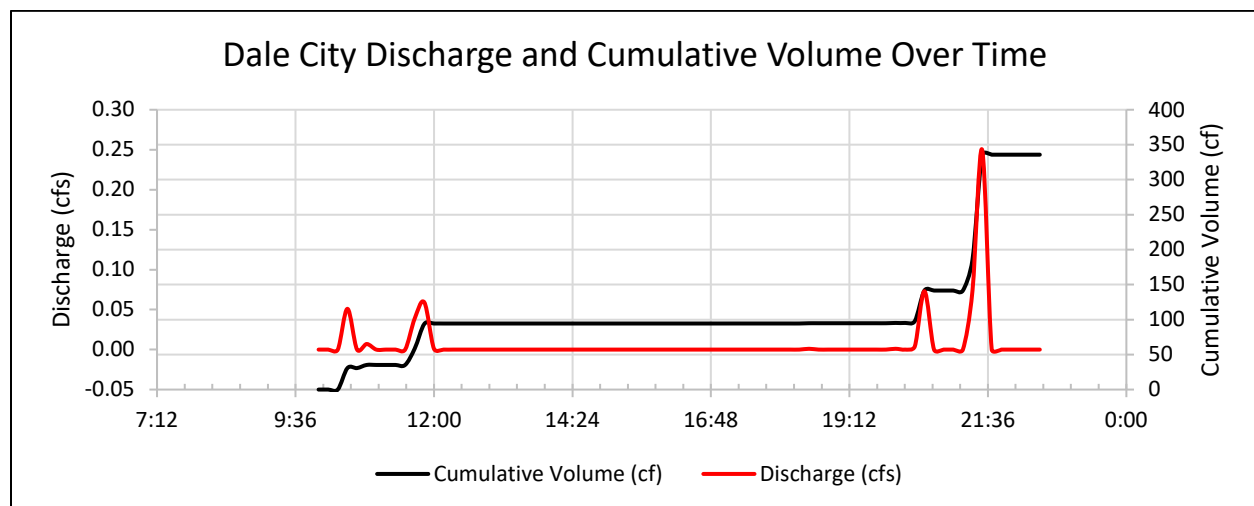
Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
21	7/12/2024 13:00	63,329.20	4.46%	223.1
22	7/12/2024 13:30	63,212.20	4.45%	222.7
23	7/12/2024 14:00	63,142.10	4.45%	222.4
24	7/12/2024 14:30	63,072.00	4.44%	222.2

\*5.0 L sample

**SITE #4684; DALE CITY, VA**

Flow rate reached 0.25 cfs with one predominate peak near the end of the sampling event. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

**Figure 2: Flow data over time for the storm event at Site #4684 on July 12, 2024**



**Table 2: Summary of Flow Weighted Composite – Site #4684**

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	7/12/2024 10:30	30.67	13.60%	271.99
2	7/12/2024 11:00	0.00	0.00%	-
3	7/12/2024 11:30	0.00	0.00%	-
4	7/12/2024 12:00	0.50	0.22%	4.46
5	7/12/2024 12:30	0.00	0.00%	-
6	7/12/2024 13:00	0.00	0.00%	-
7	7/12/2024 13:30	0.00	0.00%	-
8	7/12/2024 14:00	0.00	0.00%	-
9	7/12/2024 14:30	0.00	0.00%	-
10	7/12/2024 15:00	0.00	0.00%	-
11	7/12/2024 15:30	0.00	0.00%	-
12	7/12/2024 16:00	0.00	0.00%	-
13	7/12/2024 16:30	0.00	0.00%	-
14	7/12/2024 17:00	0.00	0.00%	0.01
15	7/12/2024 17:30	0.00	0.00%	-
16	7/12/2024 18:00	0.00	0.00%	-
17	7/12/2024 18:30	0.36	0.16%	3.23
18	7/12/2024 19:00	0.00	0.00%	-
19	7/12/2024 19:30	0.00	0.00%	-
20	7/12/2024 20:00	0.42	0.18%	3.7
21	7/12/2024 20:30	43.68	19.37%	387.42
22	7/12/2024 21:00	0.00	0.00%	-
23	7/12/2024 21:30	149.87	66.46%	1,329.19**
24	7/12/2024 22:00	0.00	0.00%	-

\*2.0 L sample

\*\*Each sample bottle contains 1000ml. Remaining 329.19 ml is from sample bottle 21.

### 3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

**Table 3: Analytical Parameters**

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

**Table 4: Results of Water Quality Analysis**

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	5.6	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	20.6	µg/L	10.0	120	a
	Total Suspended Solids	3.8	mg/L	4.9	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.83	mg/L	0.040	-	-
	Total Nitrogen	1.2	mg/L	0.040	2.2	c
	Phosphorus, Total	ND	mg/L	0.050	2	b
	Chemical Oxygen Demand	ND	mg/L	25	120	b
	pH	7.6	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	8.5	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	73.3	µg/L	10.0	120	a
	Total Suspended Solids	12.3	mg/L	2.5	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	0.81	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.42	mg/L	0.040	-	-
	Total Nitrogen	1.2	mg/L	0.040	2.2	c
	Phosphorus, Total	0.076	mg/L	0.050	2	b
	Chemical Oxygen Demand	58.3	mg/L	25.0	120	b
	pH	6.7	Std. Units	0.10	6.0-9.0	d

<sup>a</sup> State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.

<sup>b</sup> Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.

<sup>c</sup> The sum of Nitrogen as Ammonia, NO<sub>2</sub>, NO<sub>3</sub>, and Total Kjeldahl Nitrogen.

<sup>d</sup> Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.

\* Values highlighted in red were found to be in exceedance of their respective criterion.

ND = The analyte was not detected above specified reporting limit.



**APPENDIX A**  
**PHOTO LOG OF SITE CONDITIONS**

**Wet Weather Monitoring Q2 Report**  
**Prince William County, VA**  
Photographic Log



**Site:** Dale City Station

**Photo: 1**

**Date:** 7/10/2024

**Description:** Dale City sampler set up overview.



**Site:** Dale City Station

**Photo: 2**

**Date:** 7/10/2024

**Description:** Dale City outfall, downstream. Note Iron-oxidizing bacteria growth staining rip rap downstream.



Photographic Log

Prince William County Wet Weather Monitoring Q2  
Project No. 151280003

August 27, 2024  
Prince William County, VA



**Site:** Manassas Station

**Photo:** 3

**Date:** 7/10/2024

**Description:** Manassas sampler set up overview.



**Site:** Manassas Station

**Photo:** 4

**Date:** 7/13/2024

**Description:** Manassas outfall with ring installed, after storm event. Note ponded water and graffiti. Some trash in water.



**APPENDIX B**  
**WATER QUALITY LABORATORY RESULTS**



July 26, 2024

Ilana Ton  
WSP USA  
13530 Dulles Technology Drive  
Suite 300  
Herndon, VA 20171

RE: Project: PRINCE WILLIAM COUNTY  
Pace Project No.: 92742749

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on July 18, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Taylor M Cannon  
taylor.cannon@pacelabs.com  
704-977-0943  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## **CERTIFICATIONS**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

---

### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Laboratory ID: 99030

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## **REPORT OF LABORATORY ANALYSIS**

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### SAMPLE SUMMARY

Project: PRINCE WILLIAM COUNTY  
Pace Project No.: 92742749

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92742749001	MAN	Water	07/13/24 13:45	07/18/24 10:50
92742749002	DAL	Water	07/13/24 14:10	07/18/24 10:50

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92742749001	MAN	EPA 200.7 Rev 4.4 1994	CRW	4	PASI-A
		SM 2540D-2011	YEG	1	PASI-A
		EPA 9040C	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	MDW	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	CEM	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A
		92742749002	DAL	EPA 200.7 Rev 4.4 1994	CRW
SM 2540D-2011	YEG			1	PASI-A
EPA 9040C	SMS			1	PASI-A
TKN+NO3+NO2 Calculation	MDW			1	PASI-A
EPA 350.1 Rev 2.0 1993	NCF			1	PASI-A
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A
EPA 353.2 Rev 2.0 1993	CEM			1	PASI-A
EPA 365.1 Rev 2.0 1993	ZJP			1	PASI-A
SM 5220D-2011	JP1			1	PASI-A

PASI-A = Pace Analytical Services - Asheville

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

Sample: MAN	Lab ID: 92742749001	Collected: 07/13/24 13:45	Received: 07/18/24 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>		Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville						
Copper	5.6	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:11	7440-50-8	
Lead	ND	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:11	7439-92-1	
Nickel	ND	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:11	7440-02-0	
Zinc	20.6	ug/L	10.0	1	07/19/24 16:30	07/24/24 11:11	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	3.8	mg/L	1.0	1		07/19/24 16:57		
<b>9040 pH</b>		Analytical Method: EPA 9040C Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.6	Std. Units	0.10	1		07/19/24 15:19		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	1.2	mg/L	0.040	1		07/25/24 11:38		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	1		07/24/24 14:18	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	1	07/23/24 19:59	07/24/24 07:21	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.83	mg/L	0.040	1		07/25/24 04:46		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	ND	mg/L	0.050	1	07/22/24 18:29	07/24/24 11:34	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	ND	mg/L	25.0	1	07/23/24 02:49	07/24/24 04:31		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

Sample: DAL	Lab ID: 92742749002	Collected: 07/13/24 14:10	Received: 07/18/24 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>								
Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Pace Analytical Services - Asheville								
Copper	8.5	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:14	7440-50-8	
Lead	ND	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:14	7439-92-1	
Nickel	ND	ug/L	5.0	1	07/19/24 16:30	07/24/24 11:14	7440-02-0	
Zinc	73.3	ug/L	10.0	1	07/19/24 16:30	07/24/24 11:14	7440-66-6	
<b>2540D TSS, Low-Level</b>								
Analytical Method: SM 2540D-2011								
Pace Analytical Services - Asheville								
Total Suspended Solids	12.3	mg/L	2.9	1		07/19/24 16:57		D6
<b>9040 pH</b>								
Analytical Method: EPA 9040C								
Pace Analytical Services - Asheville								
pH at 25 Degrees C	6.7	Std. Units	0.10	1		07/19/24 15:22		H3
<b>Total Nitrogen Calculation</b>								
Analytical Method: TKN+NO3+NO2 Calculation								
Pace Analytical Services - Asheville								
Total Nitrogen	1.2	mg/L	0.040	1		07/25/24 11:38		
<b>350.1 Ammonia</b>								
Analytical Method: EPA 350.1 Rev 2.0 1993								
Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	1		07/24/24 14:22	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>								
Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993								
Pace Analytical Services - Asheville								
Nitrogen, Kjeldahl, Total	0.81	mg/L	0.50	1	07/23/24 19:59	07/24/24 07:22	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>								
Analytical Method: EPA 353.2 Rev 2.0 1993								
Pace Analytical Services - Asheville								
Nitrogen, NO2 plus NO3	0.42	mg/L	0.040	1		07/25/24 04:48		
<b>365.1 Phosphorus, Total</b>								
Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993								
Pace Analytical Services - Asheville								
Phosphorus	0.076	mg/L	0.050	1	07/22/24 18:29	07/24/24 11:38	7723-14-0	
<b>5220D COD</b>								
Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011								
Pace Analytical Services - Asheville								
Chemical Oxygen Demand	58.3	mg/L	25.0	1	07/23/24 02:49	07/24/24 04:31		

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch:	869614	Analysis Method:	EPA 200.7 Rev 4.4 1994
QC Batch Method:	EPA 200.7 Rev 4.4 1994	Analysis Description:	200.7 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4481900 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	07/23/24 12:51	
Lead	ug/L	ND	5.0	07/23/24 12:51	
Nickel	ug/L	ND	5.0	07/24/24 10:17	
Zinc	ug/L	ND	10.0	07/24/24 10:17	

LABORATORY CONTROL SAMPLE: 4481901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	514	103	85-115	
Lead	ug/L	500	526	105	85-115	
Nickel	ug/L	500	489	98	85-115	
Zinc	ug/L	500	493	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4481902 4481903

Parameter	Units	92742392002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Copper	ug/L	0.055 mg/L	500	500	552	567	99	102	70-130	3	20	
Lead	ug/L	0.023 mg/L	500	500	510	525	97	100	70-130	3	20	
Nickel	ug/L	ND	500	500	498	517	99	103	70-130	4	20	
Zinc	ug/L	0.22 mg/L	500	500	734	749	102	105	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4481906 4481907

Parameter	Units	92742394001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Copper	ug/L	0.42 mg/L	500	500	906	933	97	103	70-130	3	20	
Lead	ug/L	0.011 mg/L	500	500	501	526	98	103	70-130	5	20	
Nickel	ug/L	0.016 mg/L	500	500	514	537	99	104	70-130	4	20	
Zinc	ug/L	0.33 mg/L	500	500	834	853	102	105	70-130	2	20	

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch: 869418

Analysis Method: SM 2540D-2011

QC Batch Method: SM 2540D-2011

Analysis Description: 2540D Total Suspended Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4481255

Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	07/19/24 16:55	

LABORATORY CONTROL SAMPLE: 4481256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	238	95	90-110	

SAMPLE DUPLICATE: 4482640

Parameter	Units	92742749002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	12.3	14.0	13	10	D6

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY  
 Pace Project No.: 92742749

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QC Batch: 869545	Analysis Method: EPA 9040C
QC Batch Method: EPA 9040C	Analysis Description: 9040 pH
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

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SAMPLE DUPLICATE: 4481569

Parameter	Units	92740754001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.0	6.0	0	10	H3

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch:	870340	Analysis Method:	EPA 350.1 Rev 2.0 1993
QC Batch Method:	EPA 350.1 Rev 2.0 1993	Analysis Description:	350.1 Ammonia
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4485134 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	07/24/24 14:15	

LABORATORY CONTROL SAMPLE: 4485135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4485136 4485137

Parameter	Units	92742749001		4485137		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Nitrogen, Ammonia	mg/L	ND	5	5	5.3	5.3	104	104	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4485138 4485139

Parameter	Units	92742749002		4485139		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Nitrogen, Ammonia	mg/L	ND	5	5	5.2	5.2	103	102	90-110	0	10		

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch: 870361 Analysis Method: EPA 351.2 Rev 2.0 1993  
 QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4485219 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	07/24/24 06:49	

LABORATORY CONTROL SAMPLE: 4485220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4485221 4485222

Parameter	Units	92742631001		4485221		4485222		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Nitrogen, Kjeldahl, Total	mg/L	1.1	10	11.7	10	11.2	106	100	90-110	5	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4485223 4485224

Parameter	Units	92742631002		4485223		4485224		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Nitrogen, Kjeldahl, Total	mg/L	ND	10	11.6	10	11.7	112	113	90-110	1	10 M1

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch:	870811	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, preserved
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4487757 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	07/25/24 04:28	

LABORATORY CONTROL SAMPLE: 4487758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4487759 4487760

Parameter	Units	92741995001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	ND	2.5	2.5	1.5	1.4	57	55	90-110	3	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4487761 4487762

Parameter	Units	92742000001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	0.56	2.5	2.5	3.1	3.1	101	101	90-110	0	10	

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**QUALITY CONTROL DATA**

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch:	869960	Analysis Method:	EPA 365.1 Rev 2.0 1993
QC Batch Method:	EPA 365.1 Rev 2.0 1993	Analysis Description:	365.1 Phosphorus, Total
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4483634 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	07/24/24 10:54	

LABORATORY CONTROL SAMPLE: 4483635

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4483636 4483637

Parameter	Units	92741371001		4483637		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Phosphorus	mg/L	2.1	2.5	2.5	4.5	4.5	97	97	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4483638 4483639

Parameter	Units	92741371005		4483639		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Phosphorus	mg/L	ND	2.5	2.5	2.5	2.5	100	100	90-110	0	10	

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### QUALITY CONTROL DATA

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

QC Batch:	870175	Analysis Method:	SM 5220D-2011
QC Batch Method:	SM 5220D-2011	Analysis Description:	5220D COD
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92742749001, 92742749002

METHOD BLANK: 4484588 Matrix: Water

Associated Lab Samples: 92742749001, 92742749002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	07/24/24 04:25	

LABORATORY CONTROL SAMPLE: 4484589

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	744	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4484590 4484591

Parameter	Units	92741410001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	898	100	100	968	968	70	70	90-110	0	3	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4484592 4484593

Parameter	Units	92741557001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	13.9J	100	100	121	119	107	105	90-110	2	3		

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## QUALIFIERS

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRINCE WILLIAM COUNTY

Pace Project No.: 92742749

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92742749001	MAN	EPA 200.7 Rev 4.4 1994	869614	EPA 200.7 Rev 4.4 1994	869711
92742749002	DAL	EPA 200.7 Rev 4.4 1994	869614	EPA 200.7 Rev 4.4 1994	869711
92742749001	MAN	SM 2540D-2011	869418		
92742749002	DAL	SM 2540D-2011	869418		
92742749001	MAN	EPA 9040C	869545		
92742749002	DAL	EPA 9040C	869545		
92742749001	MAN	TKN+NO3+NO2 Calculation	870959		
92742749002	DAL	TKN+NO3+NO2 Calculation	870959		
92742749001	MAN	EPA 350.1 Rev 2.0 1993	870340		
92742749002	DAL	EPA 350.1 Rev 2.0 1993	870340		
92742749001	MAN	EPA 351.2 Rev 2.0 1993	870361	EPA 351.2 Rev 2.0 1993	870513
92742749002	DAL	EPA 351.2 Rev 2.0 1993	870361	EPA 351.2 Rev 2.0 1993	870513
92742749001	MAN	EPA 353.2 Rev 2.0 1993	870811		
92742749002	DAL	EPA 353.2 Rev 2.0 1993	870811		
92742749001	MAN	EPA 365.1 Rev 2.0 1993	869960	EPA 365.1 Rev 2.0 1993	870244
92742749002	DAL	EPA 365.1 Rev 2.0 1993	869960	EPA 365.1 Rev 2.0 1993	870244
92742749001	MAN	SM 5220D-2011	870175	SM 5220D-2011	870194
92742749002	DAL	SM 5220D-2011	870175	SM 5220D-2011	870194

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CHAIN-OF-CUSTODY Analytical Request Document

MO#: 92742749  
92742749

Number or

Company: Wood/WSP  
Address: 13530 Dulles Technology Dr #300, Herndon, VA 20171  
Billing Information: Atn: lisa.weisert@wsp.com  
Report To: Iliana Ton  
Email To: iliana.ton@wsp.com

Customer Project Name/Number: Prince William County/  
151280003.0002. .... , ORG 7526, GL Code 5730-00  
Phone: 703 488 3778  
Email: iliana.ton@wsp.com  
Site/Facility ID #:   
Purchase Order #:   
Quote #:   
Turnaround Date Required:   
Sample Disposal:   
[X] Dispose as appropriate  
[ ] Return  
[ ] Archive:   
[ ] Hold:   
Time Zone Collected:   
Compliance Monitoring?   
DW PWS ID #:   
DW Location Code:   
Immediately Packed on Ice:   
Field Filtered (if applicable):   
Analysis:   
Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

State: VA County/City:   
Time Zone Collected:   
Compliance Monitoring?   
DW PWS ID #:   
DW Location Code:   
Immediately Packed on Ice:   
Field Filtered (if applicable):   
Analysis:   
Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite)		Composite End		Res CI	# of Cms	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
MAN	OT-Water	Comp			7/13/2024	13:45		5	P
DAL	OT-Water	Comp			7/13/2024	14:10		5	P

U	1	2	2	U

Container Preservative Type \*\*  
\*\* Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analysis	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH
	X	X	X	X	X

Customer Remarks / Special Conditions / Possible Hazards:  
 Prince William County/  
 151280003.0002. .... , ORG 7526, GL Code 5730-00  
 Pace PM Sara Paulson  
 200 7: Cu, Pb, Ni, Zn

Type of Ice Used: Wet Blue Dry None  
 Packing Material Used:  
 Radchem sample(s) screened (<500 cpm): Y N NA

Received by/Company: (Signature)  
 Date/Time: 7/17/2024 1400

Received by/Company: (Signature)  
 Date/Time: 7/15/24 16:50

Received by/Company: (Signature)  
 Date/Time:

LAB USE ONLY:  
 Lab Sample Temperature Info:  
 Temp Blank Received: Y N NA  
 Therm ID#: 421075  
 Cooler 1 Temp Upon Receipt: 19.8  
 Cooler 1 Therm Corr. Factory: 0C  
 Cooler 1 Corrected Temp: 5.4  
 Comments:

ONLY

Lab Project Manager:

Lab Profile/Line:  
Lab Sample Receipt Checklist:  
Custody Seals Present/Intact Y N NA  
Custody Signatures Present Y N NA  
Collector Signature Present Y N NA  
Bottles Intact Y N NA  
Correct bottles Y N NA  
Sufficient Volume Y N NA  
Samples Received on Ice Y N NA  
VOA - Headspace Acceptable Y N NA  
USDA Regulated Soils Y N NA  
Samples in Holding Time Y N NA  
Residual Chlorine Present Y N NA  
Cl Strips: 40594  
Sample pH Acceptable Y N NA  
pH Strips: 234722  
Sulfide Present Y N NA  
Lead Acetate Strips: Y N NA

LAB USE ONLY:  
Lab Sample # / Comments:

MTLL LAB USE ONLY  
Table #:  
Actnum:  
Template:  
PrelogIn:  
PWI:  
PB:  
Non Conformance(s):  
YES / NO  
Page: 1  
of: 1



DC#\_ Title: ENV-FRM-HUN1-0083 v05\_Sample Condition Upon Receipt

Effective Date: 05/24/2024

Project # **WO# : 92742749**

PM: TMC

Due Date: 07/25/24

CLIENT: 92-Amec VA

\*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

\*\*Bottom half of box is to list number of bottles

\*\*\*Check all unpreserved Nitrates for chlorine

Laboratory Receiving Location: Asheville  Eden  Greenwood  Huntersville  Raleigh  Mechanicsville  Atlanta  Kernersville

Client WSP - Christilly Profile/EZ (Circle one) 8125 Notes Line # 1

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
CC		AS		AS	AS	AS																							
1		1		1	2	1																							
2		1		1	2	1																							
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

## **Wet Weather Monitoring Report**

Third Quarter 2023 (July 1 - September 30)

Event Dates: September 23 - 24, 2023

*Prepared for:*



### **Prince William County Department of Public Works**

5 County Complex Court, Suite 170

Prince William, Virginia 22192

*Prepared by:*

### **WSP USA Environment & Infrastructure Solutions, Inc.**

4795 Meadow Wood Lane, Suite 310E

Chantilly, VA 20151

(703) 488-3700

October 30, 2023

Project No. 151280003

## 1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q3 sampling event that occurred on September 23, 2023, as well as the findings from the water quality analysis results of the sampling events.

## 2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

### SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

### SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on September 22<sup>nd</sup> programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe.

Rain gage data were compiled from monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:



Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \text{ [ US ]}$$

Q = Flow rate  
A = Flow area  
V = Avg. velocity  
S = Water surface slope

R = Hydraulic Radius  
n = Roughness coefficient  
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's  $n$  value of 0.013 was assumed for the concrete pipes<sup>1</sup>. Two sampling programs were implemented to accommodate for different conditions between the sites.

### Manassas Sampling Program

Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During this event after the second sample bottle collection, the flow meter began recording zeroes for flow depths and velocities. Since the level and depth were not accurate for the remaining samples collected, the first two sample bottles were composited for sample analysis.

During the event, the sampling was set as a time-paced program to collect discrete samples every hour and a half, then composited into a single container.

### Dale City Sampling Program

During the event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every hour and a half, then composited into a single container.

---

<sup>1</sup> Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

### 3.0 RESULTS

#### SITE #941; MANASSAS, VA

Sampling occurred from 00:40 on September 23<sup>rd</sup> – 11:10 on September 24<sup>th</sup>. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) recorded 2.86 inches of precipitation over that period. The previous storm event was recorded on September 18<sup>th</sup> producing 0.05 inches of precipitation.

#### SITE #4684; DALE CITY, VA

Sampling occurred from 23:00 on September 22<sup>nd</sup> – 09:30 on September 24<sup>th</sup>. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) recorded 2.56 inches of precipitation over this same period. The previous storm event was recorded on September 18<sup>th</sup> producing 0.13 inches of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on September 26<sup>th</sup>.

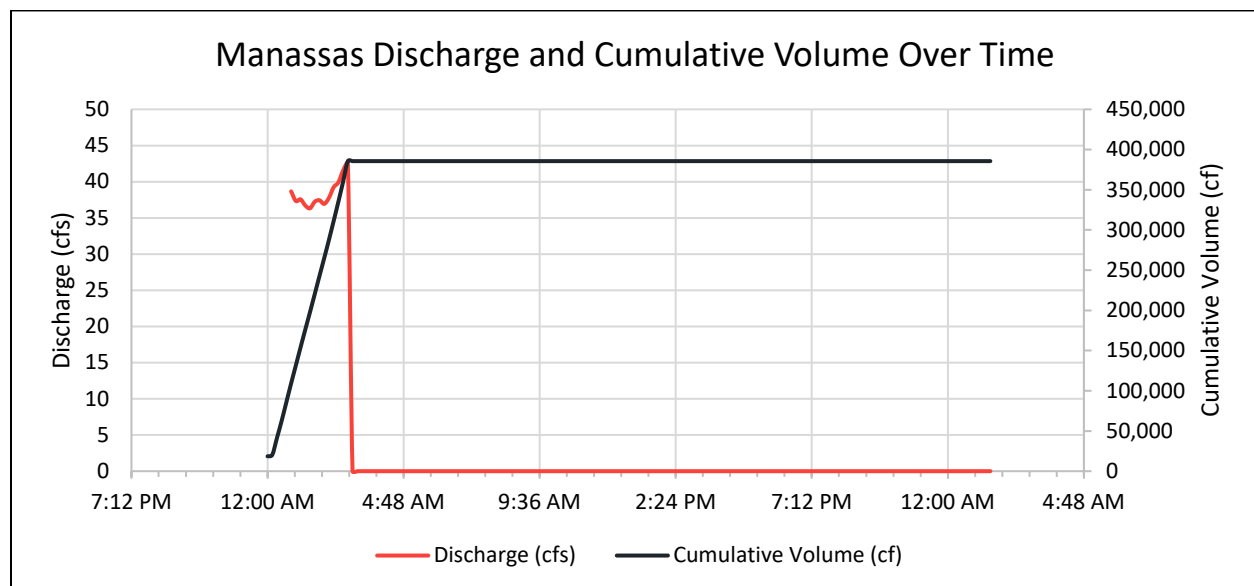
### 3.1 FLOW DATA

#### SITE #941; MANASSAS, VA

Flow rate reached 42.5 cfs, before the flow meter began reading zeroes. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. The flow-weighted composite volume only includes the sample from the first two sample bottles which are more representative of a first flush phase of the storm event.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

**Figure 1: Flow data over time for the storm event at Site #941 on September 23<sup>rd</sup> to 24<sup>th</sup>**



**Table 1: Summary of Flow Weighted Composite – Site #941**

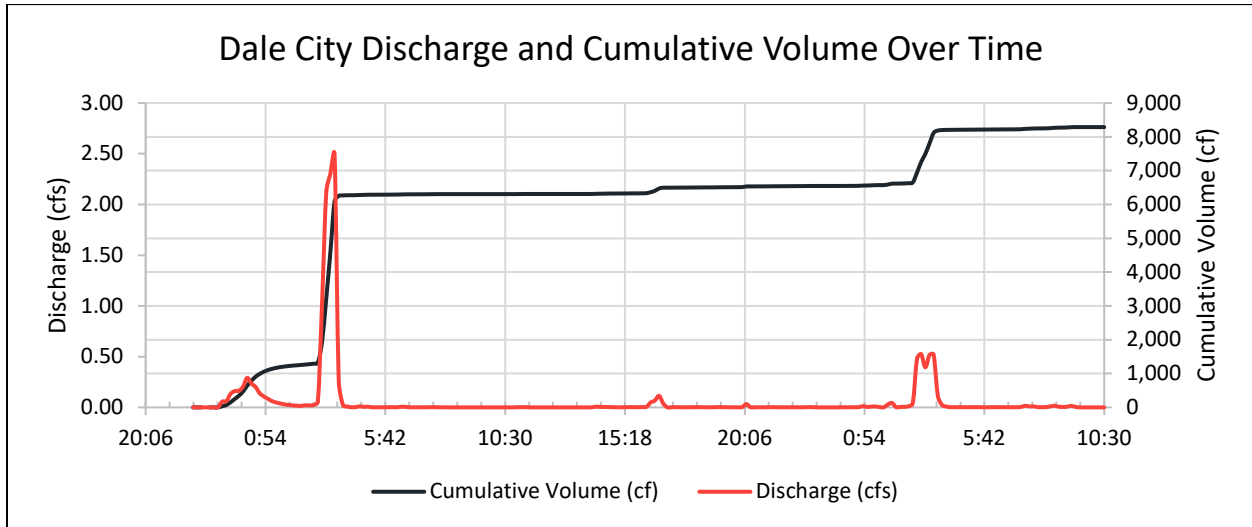
Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	9/23/2023 0:40	23262.2	50%	1000
2	9/23/2023 2:10	22662	50%	1000

\*2.0 L sample

**SITE #4684; DALE CITY, VA**

Flow rate reached 2.49 cfs with one predominate peak. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

**Figure 2: Flow data over time for the storm event at Site #4684 on September 23<sup>rd</sup> to 24<sup>th</sup>**



**Table 2: Summary of Flow Weighted Composite – Site #4684**

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	9/22/2023 23:00	0.33898	0.02%	0.36
2	9/23/2023 0:30	121.49	6.50%	129.92
3	9/23/2023 2:00	11.997	0.64%	12.83
4	9/23/2023 3:30	1380.75	73.83%	1,476.50**
5	9/23/2023 5:00	4.20138	0.22%	4.49
6	9/23/2023 6:30	3.06708	0.16%	3.28
7	9/23/2023 8:00	0.776773	0.04%	0.83
8	9/23/2023 9:30	0	0.00%	-
9	9/23/2023 11:00	0.937761	0.05%	1.00
10	9/23/2023 12:30	0	0.00%	-
11	9/23/2023 14:00	0.980561	0.05%	1.05
12	9/23/2023 15:30	1.57531	0.08%	1.68
13	9/23/2023 17:00	0.776773	0.04%	0.83
14	9/23/2023 18:30	0.739063	0.04%	0.79
15	9/23/2023 20:00	1.99274	0.11%	2.13
16	9/23/2023 21:30	0.702359	0.04%	0.75
17	9/23/2023 23:00	0	0.00%	-
18	9/24/2023 0:30	0.980561	0.05%	1.05
19	9/24/2023 2:00	25.6908	1.37%	27.47
20	9/24/2023 3:30	310.071	16.58%	331.57
21	9/24/2023 5:00	0.980561	0.05%	1.05
22	9/24/2023 6:30	1.16208	0.06%	1.24
23	9/24/2023 8:00	1.06925	0.06%	1.14
24	9/24/2023 9:30	0.0193585	0.00%	0.02

\*2.0 L sample

\*\*Each sample bottle contains 1000ml. Remaining 476.5 ml is from sample bottle 3.

### 3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

**Table 3: Analytical Parameters**

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

**Table 4: Results of Water Quality Analysis**

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	13.7	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	ND	µg/L	10.0	120	a
	Total Suspended Solids	27.6	mg/L	5.0	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.55	mg/L	0.040	-	-
	Total Nitrogen	1.7	mg/L	0.040	2.2	c
	Phosphorus, Total	0.10	mg/L	0.050	2	b
	Chemical Oxygen Demand	38.4	mg/L	25	120	b
	pH	7.8	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	ND	µg/L	5.0	13	a
	Lead	ND	µg/L	10.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	ND	µg/L	20.0	120	a
	Total Suspended Solids	3.5	mg/L	2.0	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.25	mg/L	0.040	-	-
	Total Nitrogen	0.63	mg/L	0.040	2.2	c
	Phosphorus, Total	ND	mg/L	0.050	2	b
	Chemical Oxygen Demand	ND	mg/L	25.0	120	b
	pH	6.8	Std. Units	0.10	6.0-9.0	d

<sup>a</sup> State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.

<sup>b</sup> Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.

<sup>c</sup> The sum of Nitrogen as Ammonia, NO<sub>2</sub>, NO<sub>3</sub>, and Total Kjeldahl Nitrogen.

<sup>d</sup> Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.

\* Values highlighted in red were found to be in exceedance of their respective criterion.

ND = The analyte was not detected above specified reporting limit.





**APPENDIX A**  
**PHOTO LOG OF SITE CONDITIONS**

**Wet Weather Monitoring Q3 Report**  
**Prince William County, VA**  
Photographic Log



**Site:** Dale City Station

**Photo:** 1

**Date:** 9/22/2023

**Description:** Dale City sampler set up overview.



**Site:** Dale City Station

**Photo:** 2

**Date:** 9/22/2023

**Description:** Dale City outfall, downstream. Note Iron-oxidizing bacteria growth and staining along footing and eroded outlet protection. Some oil sheen on water surface.



Photographic Log

Prince William County Wet Weather Monitoring Q3  
Project No. 151280003

October 30, 2023  
Prince William County, VA



**Site:** Manassas Station

**Photo:** 3

**Date:** 9/22/2023

**Description:** Manassas sampler set up overview.



**Site:** Manassas Station

**Photo:** 4

**Date:** 9/22/2023

**Description:** Manassas outfall with ring installed. Note ponded water and graffiti.

**APPENDIX B**  
**WATER QUALITY LABORATORY RESULTS**



October 30, 2023

Ilana Ton  
WSP USA  
4795 Meadow Wood Lane  
Suite 310E  
Chantilly, VA 20151

RE: Project: Prince William County-Revised Report  
Pace Project No.: 92690292

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Sara Poulson".

Sara Poulson  
sara.poulson@pacelabs.com  
704-977-0964  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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### CERTIFICATIONS

Project: Prince William County-Revised Report

Pace Project No.: 92690292

#### Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660

Alaska Certification 17-026

Arizona Certification #: AZ0612

Arkansas Certification #: 88-0469

California Certification #: 2932

Canada Certification #: 1461.01

Colorado Certification #: TN00003

Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487

Georgia DW Certification #: 923

Georgia Certification: NELAP

Idaho Certification #: TN00003

Illinois Certification #: 200008

Indiana Certification #: C-TN-01

Iowa Certification #: 364

Kansas Certification #: E-10277

Kentucky UST Certification #: 16

Kentucky Certification #: 90010

Louisiana Certification #: AI30792

Louisiana DW Certification #: LA180010

Maine Certification #: TN0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395

Mississippi Certification #: TN00003

Missouri Certification #: 340

Montana Certification #: CERT0086

Nebraska Certification #: NE-OS-15-05

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Virginia Certification #: VT2006

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

#### Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Laboratory ID: 99030

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Prince William County-Revised Report  
Pace Project No.: 92690292

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92690292001	MAN	Water	09/26/23 16:30	09/27/23 11:22
92690292002	DAL	Water	09/26/23 17:00	09/27/23 11:22

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Prince William County-Revised Report  
 Pace Project No.: 92690292

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92690292001	MAN	EPA 200.7	DJS	4	PAN
		SM 2540D-2011	JMH1	1	PASI-A
		SM 4500-H+B-2011	SMS	1	PASI-A
		TKN+NO3+NO2 Calculation	MDW	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	NCF	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A
		92690292002	DAL	EPA 200.7	DJS
SM 2540D-2011	JMH1			1	PASI-A
SM 4500-H+B-2011	SMS			1	PASI-A
TKN+NO3+NO2 Calculation	KDF1			1	PASI-A
EPA 350.1 Rev 2.0 1993	NCF			1	PASI-A
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A
EPA 353.2 Rev 2.0 1993	NCF			1	PASI-A
EPA 365.1 Rev 2.0 1993	ZJP			1	PASI-A
SM 5220D-2011	JP1			1	PASI-A

PAN = Pace National - Mt. Juliet  
 PASI-A = Pace Analytical Services - Asheville

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: Prince William County-Revised Report

Pace Project No.: 92690292

Sample: MAN	Lab ID: 92690292001	Collected: 09/26/23 16:30	Received: 09/27/23 11:22	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>Metals (ICP) 200.7</b>		Analytical Method: EPA 200.7 Preparation Method: 200.7 Pace National - Mt. Juliet						
Copper	13.7	ug/L	10.0	1	10/01/23 07:44	10/01/23 17:59	7440-50-8	
Lead	ND	ug/L	5.00	1	10/01/23 07:44	10/01/23 17:59	7439-92-1	
Nickel	ND	ug/L	10.0	1	10/01/23 07:44	10/01/23 17:59	7440-02-0	
Zinc	ND	ug/L	50.0	1	10/01/23 07:44	10/01/23 17:59	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	27.6	mg/L	1.4	1		09/28/23 12:23		
<b>4500H+ pH, Electrometric</b>		Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.8	Std. Units	0.10	1		10/04/23 12:06		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	1.7	mg/L	0.040	1		10/20/23 21:22		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	1		09/30/23 08:24	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	1	09/29/23 18:04	09/30/23 04:23	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.55	mg/L	0.040	1		10/04/23 03:00		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	0.10	mg/L	0.050	1	09/29/23 15:37	10/02/23 12:43	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	38.4	mg/L	25.0	1	09/29/23 02:48	09/29/23 06:20		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Prince William County-Revised Report

Pace Project No.: 92690292

Sample: DAL	Lab ID: 92690292002	Collected: 09/26/23 17:00	Received: 09/27/23 11:22	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>Metals (ICP) 200.7</b>		Analytical Method: EPA 200.7 Preparation Method: 200.7 Pace National - Mt. Juliet						
Copper	ND	ug/L	10.0	1	10/01/23 07:44	10/01/23 18:02	7440-50-8	
Lead	ND	ug/L	5.00	1	10/01/23 07:44	10/01/23 18:02	7439-92-1	
Nickel	ND	ug/L	10.0	1	10/01/23 07:44	10/01/23 18:02	7440-02-0	
Zinc	ND	ug/L	50.0	1	10/01/23 07:44	10/01/23 18:02	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	3.5	mg/L	1.0	1		09/29/23 11:57		
<b>4500H+ pH, Electrometric</b>		Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Asheville						
pH at 25 Degrees C	6.8	Std. Units	0.10	1		10/04/23 12:49		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	0.63	mg/L	0.040	1		10/04/23 08:57		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	1		09/30/23 08:33	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	ND	mg/L	0.50	1	09/29/23 18:04	09/30/23 04:43	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.25	mg/L	0.040	1		10/04/23 03:03		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	ND	mg/L	0.050	1	09/29/23 15:37	10/02/23 12:44	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	ND	mg/L	25.0	1	09/29/23 02:48	09/29/23 06:20		

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 2142480 Analysis Method: EPA 200.7  
 QC Batch Method: 200.7 Analysis Description: Metals (ICP) 200.7  
 Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 92690292001, 92690292002

METHOD BLANK: R3980276-1 Matrix: Water

Associated Lab Samples: 92690292001, 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	10.0	10/01/23 17:04	
Lead	ug/L	ND	5.00	10/01/23 17:04	
Nickel	ug/L	ND	10.0	10/01/23 17:04	
Zinc	ug/L	ND	50.0	10/01/23 17:04	

LABORATORY CONTROL SAMPLE: R3980276-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	1000	1030	103	85.0-115	
Lead	ug/L	1000	1030	103	85.0-115	
Nickel	ug/L	1000	1030	103	85.0-115	
Zinc	ug/L	1000	1020	102	85.0-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3980276-4 R3980276-5

Parameter	Units	L1658356-01 Result	MS Spike Conc.	MSD Spike Conc.	R3980276-4		R3980276-5		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Copper	ug/L	ND	1000	1000	1020	1040	102	104	70.0-130	1.78	20	
Lead	ug/L	ND	1000	1000	1010	1030	101	103	70.0-130	1.19	20	
Nickel	ug/L	ND	1000	1000	1010	1030	101	103	70.0-130	1.70	20	
Zinc	ug/L	ND	1000	1000	979	995	97.9	99.5	70.0-130	1.54	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3980276-6 R3980276-7

Parameter	Units	L1660645-01 Result	MS Spike Conc.	MSD Spike Conc.	R3980276-6		R3980276-7		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Copper	ug/L	2.98	1000	1000	1120	1020	111	102	70.0-130	8.61	20	
Lead	ug/L	51.6	1000	1000	1140	1050	109	99.9	70.0-130	8.16	20	
Nickel	ug/L	4.10	1000	1000	1110	1020	111	101	70.0-130	8.95	20	
Zinc	ug/L	25.9	1000	1000	1070	1010	105	98.2	70.0-130	6.38	20	

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 802731	Analysis Method: SM 2540D-2011
QC Batch Method: SM 2540D-2011	Analysis Description: 2540D Total Suspended Solids
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001

METHOD BLANK: 4157769 Matrix: Water

Associated Lab Samples: 92690292001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	09/28/23 12:22	

LABORATORY CONTROL SAMPLE & LCSD: 4157770 4158081

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	250	256	258	102	103	90-110	1	10	

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 803054	Analysis Method: SM 2540D-2011
QC Batch Method: SM 2540D-2011	Analysis Description: 2540D Total Suspended Solids
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292002

METHOD BLANK: 4159379 Matrix: Water

Associated Lab Samples: 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	09/29/23 11:56	

LABORATORY CONTROL SAMPLE & LCSD: 4159380 4159529

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	250	240	248	96	99	90-110	3	10	

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report  
 Pace Project No.: 92690292

QC Batch: 803907 Analysis Method: SM 4500-H+B-2011  
 QC Batch Method: SM 4500-H+B-2011 Analysis Description: 4500H+B pH  
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001, 92690292002

SAMPLE DUPLICATE: 4163637

Parameter	Units	92690292001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.9	0	10	H3

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### QUALITY CONTROL DATA

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch:	803241	Analysis Method:	EPA 350.1 Rev 2.0 1993
QC Batch Method:	EPA 350.1 Rev 2.0 1993	Analysis Description:	350.1 Ammonia
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001, 92690292002

METHOD BLANK: 4160393 Matrix: Water

Associated Lab Samples: 92690292001, 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	09/30/23 08:17	

LABORATORY CONTROL SAMPLE: 4160394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4160395 4160396

Parameter	Units	4160395		4160396		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92690290002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, Ammonia	mg/L	ND	5	5	4.8	4.8	96	96	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4160397 4160398

Parameter	Units	4160397		4160398		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92690292001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	100	100	90-110	0	10	

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 803110 Analysis Method: EPA 351.2 Rev 2.0 1993  
 QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001

METHOD BLANK: 4159744 Matrix: Water

Associated Lab Samples: 92690292001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	09/30/23 03:52	

LABORATORY CONTROL SAMPLE: 4159745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159746 4159747

Parameter	Units	92690290001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Nitrogen, Kjeldahl, Total	mg/L	1.0	10	10	10.7	10.6	97	96	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159748 4159749

Parameter	Units	92690290002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10	10.3	10.2	99	98	90-110	1	10		

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 803134 Analysis Method: EPA 351.2 Rev 2.0 1993  
 QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292002

METHOD BLANK: 4159871 Matrix: Water

Associated Lab Samples: 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	09/30/23 04:26	

LABORATORY CONTROL SAMPLE: 4159872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159873 4159874

Parameter	Units	4159873		4159874		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Kjeldahl, Total	mg/L	1.7	10	11.0	11.7	92	100	90-110	7	10	

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### QUALITY CONTROL DATA

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch:	803934	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, preserved
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001, 92690292002

METHOD BLANK: 4163695 Matrix: Water

Associated Lab Samples: 92690292001, 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	10/04/23 02:44	

LABORATORY CONTROL SAMPLE: 4163696

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4163697 4163698

Parameter	Units	4163697		4163698		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	0.44	2.5	2.3	2.4	76	78	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4163699 4163700

Parameter	Units	4163699		4163700		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	0.12	2.5	1.4	1.4	50	50	90-110	0	10	M1

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch:	803037	Analysis Method:	EPA 365.1 Rev 2.0 1993
QC Batch Method:	EPA 365.1 Rev 2.0 1993	Analysis Description:	365.1 Phosphorus, Total
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001, 92690292002

METHOD BLANK: 4159307 Matrix: Water

Associated Lab Samples: 92690292001, 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	10/02/23 12:23	

LABORATORY CONTROL SAMPLE: 4159308

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159309 4159310

Parameter	Units	92689646009		4159310		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.14	2.5	2.5	2.7	2.8	104	105	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159311 4159312

Parameter	Units	92689646010		4159312		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.059	2.5	2.5	2.7	2.7	104	105	90-110	0	10

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**QUALITY CONTROL DATA**

Project: Prince William County-Revised Report

Pace Project No.: 92690292

QC Batch: 802950

Analysis Method: SM 5220D-2011

QC Batch Method: SM 5220D-2011

Analysis Description: 5220D COD

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92690292001, 92690292002

METHOD BLANK: 4159098

Matrix: Water

Associated Lab Samples: 92690292001, 92690292002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	09/29/23 06:15	

LABORATORY CONTROL SAMPLE: 4159099

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	781	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159100 4159101

Parameter	Units	92689770003		4159100		4159101		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MS Result	MS Spike Conc.					
Chemical Oxygen Demand	mg/L	43.2	100	100	100	150	150	106	106	90-110	0	3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4159102 4159103

Parameter	Units	92690290001		4159102		4159103		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MS Result	MS Spike Conc.					
Chemical Oxygen Demand	mg/L	33.7	100	100	100	131	135	97	102	90-110	4	3 R1

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## QUALIFIERS

Project: Prince William County-Revised Report

Pace Project No.: 92690292

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Prince William County-Revised Report

Pace Project No.: 92690292

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92690292001	MAN	200.7	2142480	EPA 200.7	2142480
92690292002	DAL	200.7	2142480	EPA 200.7	2142480
92690292001	MAN	SM 2540D-2011	802731		
92690292002	DAL	SM 2540D-2011	803054		
92690292001	MAN	SM 4500-H+B-2011	803907		
92690292002	DAL	SM 4500-H+B-2011	803907		
92690292001	MAN	TKN+NO3+NO2 Calculation	807994		
92690292002	DAL	TKN+NO3+NO2 Calculation	803984		
92690292001	MAN	EPA 350.1 Rev 2.0 1993	803241		
92690292002	DAL	EPA 350.1 Rev 2.0 1993	803241		
92690292001	MAN	EPA 351.2 Rev 2.0 1993	803110	EPA 351.2 Rev 2.0 1993	803245
92690292002	DAL	EPA 351.2 Rev 2.0 1993	803134	EPA 351.2 Rev 2.0 1993	803246
92690292001	MAN	EPA 353.2 Rev 2.0 1993	803934		
92690292002	DAL	EPA 353.2 Rev 2.0 1993	803934		
92690292001	MAN	EPA 365.1 Rev 2.0 1993	803037	EPA 365.1 Rev 2.0 1993	803448
92690292002	DAL	EPA 365.1 Rev 2.0 1993	803037	EPA 365.1 Rev 2.0 1993	803448
92690292001	MAN	SM 5220D-2011	802950	SM 5220D-2011	802966
92690292002	DAL	SM 5220D-2011	802950	SM 5220D-2011	802966

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

**CHAIN-OF-CUSTODY Analytical Request Document**

Company: Wood/WSP  
Address: 4795 Meadow Wood Ln, Suite 310E, Chantilly, VA 20151  
Billing Information: Atrn: lisa.weiser@wsp.com

Report To: Ilana Ton  
Email To: lton@wsp.com

Customer Project Name/Number: Prince William County  
Site Collection Info/Address: Prince William County / Manassas, VA and Woodbridge, VA  
State: VA County/City: Manassas

Phone: 703 488 3778  
Email: ilana.ton@wsp.com  
Site/Facility ID #: \_\_\_\_\_  
Purchase Order #: \_\_\_\_\_  
Quote #: \_\_\_\_\_  
Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Collected By (signature): \_\_\_\_\_  
Turnaround Date Required: \_\_\_\_\_  
Compliance Monitoring? [ ] Yes [ ] No  
DW PWS ID #: \_\_\_\_\_  
DW Location Code: \_\_\_\_\_  
Immediately Packed on Ice: [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold  
Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day  
Field Filtered (if applicable): [ ] Yes [ ] No  
Analysis: \_\_\_\_\_

\* Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (S), Oil (O), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite)		Composite End		Res Q	# of Cms
			Date	Time	Date	Time		
MAN	OT-Water Comp		9/26/23	6:30				
DAL	OT-Water Comp		9/26/23	17:00				

Container Type: Plastic (P) or Glass (G)	SM 2540D-2015 TSS	200.7 Metals	EPA 351.2 TKN/ EPA 353.2 NO2 + NO3	EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD	SM 4500-H+B-2011 pH
X	X	X	X	X	X

Customer Remarks / Special Conditions / Possible Hazards:  
Price William County/  
1512380002.0002.\*\*\*. ORG 7526, GL Code 5730-00  
Pace PM Sara Paulson  
200.7: Cu, Pb, Ni, Zn

Type of Ice Used: (Wet) Blue Dry None  
Padding Material Used: None  
Radchem sample(s) screened (<500 cpm): Y N (NA)

MO#: 92690292

92690292

Number of

NLY

Container Preservative Type \*\*  
U 1 2 2 U  
\*\* Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Lab Profile/Line:  
Lab Sample Receipt Checklist:  
Custody Seals Present/Intact X N NA  
Collector Signatures Present X N NA  
Bottles Intact X N NA  
Correct Bottles X N NA  
Sufficient Volume X N NA  
Samples Received on Ice X N NA  
VOA - Headspace Acceptable X N NA  
USDA Regulated Soils X N NA  
Samples in Holding Time X N NA  
Residual Chlorine Present X N NA  
Cl Strips: 5150A X N NA  
Sample pH acceptable X N NA  
pH Strips: 5150A X N NA  
Sulfide Present X N NA  
Lead Acetate Strips: X N NA

LAB USE ONLY:  
Lab Sample #: 92690292  
Lab Comments: 001

LAB Sample Temperature Info:  
Temp Blank Received: Y N NA  
Therm ID#s: 215081 N  
Cooler 1 Temp Upon Receipt: 29.0C  
Cooler 1 Therm Corr. Factor: 0.0C  
Cooler 1 Corrected Temp: 29.0C  
Comments:

Relinquished by/Company: (Signature) ILANA TON / WSP  
Date/Time: 9/26/23 / 1830  
Received by/Company: (Signature) M  
Date/Time: 9/27/23 / 1122

Relinquished by/Company: (Signature)  
Date/Time:  
Received by/Company: (Signature)  
Date/Time:



DC#\_Title: ENV-FRM-HUN1-0083 v02\_Sample Condition Upon Receipt

Effective Date: 11/14/2022 8:18:30 AM

**WO# : 92690292**

Project #

PM: SC

Due Date: 10/04/23

CLIENT: 92-Amec VA

\*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

\*\*Bottom half of box is to list number of bottles

\*\*\* Check all unpreserved Nitrates for chlorine

Item#	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)		1											
BP3U-250 mL Plastic Unpreserved (N/A)													
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)		1											
BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)		1											
BP3N-250 mL plastic HNO3 (pH < 2)		1											
BP4Z-125 mL Plastic ZN Acetate & NaOH (pH > 9)		1											
BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)		1											
WGFU-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (Cl-)													
AG1H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (Cl-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
DG94-40 mL Amber NH4Cl (N/A)(Cl-)													
DG9H-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA Na2SO3 (N/A)													
VG9U-40 mL VOA Unpreserved (N/A)													
DG9V-40 mL VOA H3PO4 (N/A)													
KP7U-50 mL Plastic Unpreserved (N/A)													
V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
SP5T-125 mL Sterile Plastic (N/A - lab)													
SP2T-250 mL Sterile Plastic (N/A - lab)													
BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
AG0U-100 mL Amber Unpreserved (N/A) (Cl-)													
VSGU-20 mL Scintillation vials (N/A)													
DG9U-40 mL Amber Unpreserved vials (N/A)													

**pH Adjustment Log for Preserved Samples**

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

## **Wet Weather Monitoring Report**

Fourth Quarter 2023 (October 1 - December 31)

Event Date: December 10, 2023

*Prepared for:*



### **Prince William County Department of Public Works**

5 County Complex Court, Suite 170

Prince William, Virginia 22192

*Prepared by:*

### **WSP USA Environment & Infrastructure Solutions, Inc.**

13530 Dulles Technology Drive, Suite 300

Herndon, VA 20171

(703) 709 6500

February 12, 2024

Project No. 151280003

## 1.0 INTRODUCTION

WSP USA Environment & Infrastructure Solutions, Inc. (WSP) conducts quarterly wet weather monitoring at two outfall sites to support Prince William County in compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) Permit (Number VA0088595), issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report discusses the results of the Q4 sampling event that occurred on December 10, 2023, as well as the findings from the water quality analysis results of the sampling events.

## 2.0 METHODS

Flow rate data were collected at the outfalls by an ISCO 6712 automated sampler coupled with an ISCO 730 bubbler flow module, installed with a Scissors Ring. Flow rate over the course of the sampling events were electronically calculated using ISCO Flowlink 5.1 software, which utilizes the Manning Equation to convert flow level and velocity to flow rate. Replacement ISCO 730 bubble flow modules have been installed at both sites beginning in Q1 of 2023.

### SITE #941; MANASSAS, VA

Site #941 is located near 11850 Livingston Road. The site receives a total of 52 acres of upstream drainage area from a land surface that is 34% impervious. County data documents that the pipe is 54 inches in diameter with a slope of 0.03437. This site is subject to backwater conditions as water levels within the downstream pond have risen over the previous two years. Maintenance is recommended to ensure the continued efficacy of the monitoring program at this site. Backwater at the site extends too far upstream into the pipe and would require confined space entry to install equipment. Accommodations are made in the sampling program, as described in further detail in the following section.

### SITE #4684; DALE CITY, VA

Site #4684 is located near the corner of Potomac Center Blvd. and Sheffield Hill Way, north of Eastbourne Drive. It drains into a regional detention pond for the Potomac Club residential development. Upstream drainage totals 51 acres, 21% of which is from impervious surfaces. The pipe is 54 inches in diameter with a slope of 0.002593. Storm events at this site are flashy in nature, which is accounted for by programming shorter sample intervals, if necessary, based upon forecast conditions.

The automated samplers were deployed when a qualifying storm event (>0.3 inches precipitation) was forecast for the two monitoring sites. WSP staff deployed the samplers at both sites on December 10<sup>th</sup> programmed the samplers' automated, discrete sampling sequence to initiate upon flow levels exceeding current water levels in each pipe.

Rain gage data were compiled from monitoring stations in the Weather Underground monitoring network. The data are accessible online and provided hourly precipitation totals over the monitoring period. Gages are prioritized based on the makeup of the data record (reporting interval) and proximity to monitoring locations.

Following the storm event, staff retrieved the samples and prepared them for shipment to Pace Analytical for water quality analysis. To compile the complete set of discrete samples into a single flow-weighted composite, Flowlink software calculated the storm event discharge using the Manning Equation:

Equation 1: Manning Equation used to calculate flow rate.

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \text{ [ US ]}$$

Q = Flow rate  
A = Flow area  
V = Avg. velocity  
S = Water surface slope

R = Hydraulic Radius  
n = Roughness coefficient  
1.49 = English units conversion factor

Channel slopes were determined using invert elevations reported in the stormwater infrastructure geospatial data provided by Prince William County. Using flow levels reported by the ISCO samplers, the area and hydraulic radius inside the sampled outfalls could be computed for a given time interval. A Manning's  $n$  value of 0.013 was assumed for the concrete pipes<sup>1</sup>. Two sampling programs were implemented to accommodate for different conditions between the sites.

### Manassas Sampling Program

Although a replacement bubbler module has been installed, the ponded site conditions continue to provide inaccurate water level readings at the Manassas site and fluctuates during static water conditions. To accommodate the unreliable equipment readings due to the site conditions, the ISCO sampler at the Manassas site was programed to collect on a time-paced program. Samples were collected at a pre-set time interval over the course of the storm.

During the event, the sampling was set as a time-paced program to collect discrete samples every hour and a half, then composited into a single container.

### Dale City Sampling Program

During the event, the sampler at Dale City was programed to collect on a time-paced program. The sampler collected discrete samples every hour and a half, then composited into a single container.

---

<sup>1</sup> Chow, V.T. (1959) Open Channel Hydraulics. McGraw-Hill, New York.

### 3.0 RESULTS

#### SITE #941; MANASSAS, VA

Sampling occurred from 10:00 to 21:30 on December 10, 2023. The Global Historical Climatology Network (GHCN) daily gauge in Manassas, VA (USC00445204) 1.7 inches of precipitation over this same period. The previous storm event was recorded on November 22, 2023, producing 1.8 inches of precipitation.

#### SITE #4684; DALE CITY, VA

Sampling occurred from 09:10 to 20:40 on December 10, 2023. The Global Historical Climatology Network (GHCN) daily gauge in Woodbridge, VA (US1VAPW0010) recorded 1.74 inches of precipitation over this same period. The previous storm event was recorded on December 6, 2023, producing 0.02 inches of precipitation.

Samples from both sites were retained under refrigeration until they were composited and shipped overnight to Pace Analytical Services in Asheville, NC on December 12, 2023.

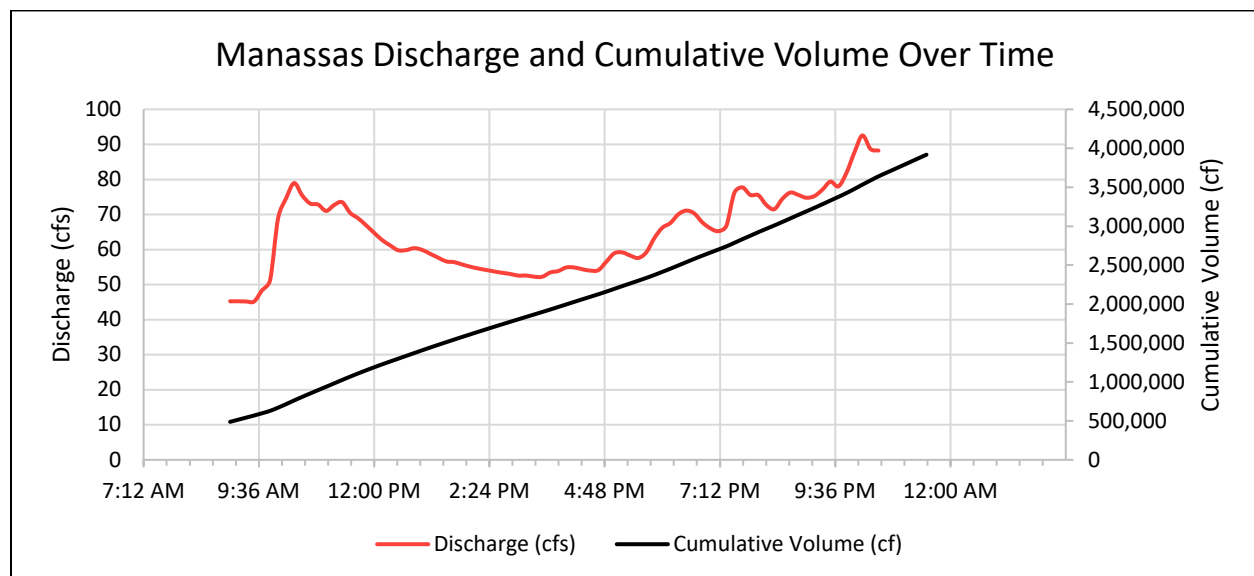
### 3.1 FLOW DATA

#### SITE #941; MANASSAS, VA

Flow rate reached 92.55 cfs. The storm event hydrograph compared with cumulative volume can be seen in Figure 1. Table 1 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

Flow rate and volume are calculated by measuring changes in water level over time. Backwater effects are impacting flow meter readings at the outfall point of discharge. Backwater conditions cause elevated readings for flow volume and flow rate.

**Figure 1: Flow data over time for the storm event at Site #941 on December 10, 2023**





**Table 1: Summary of Flow Weighted Composite – Site #941**

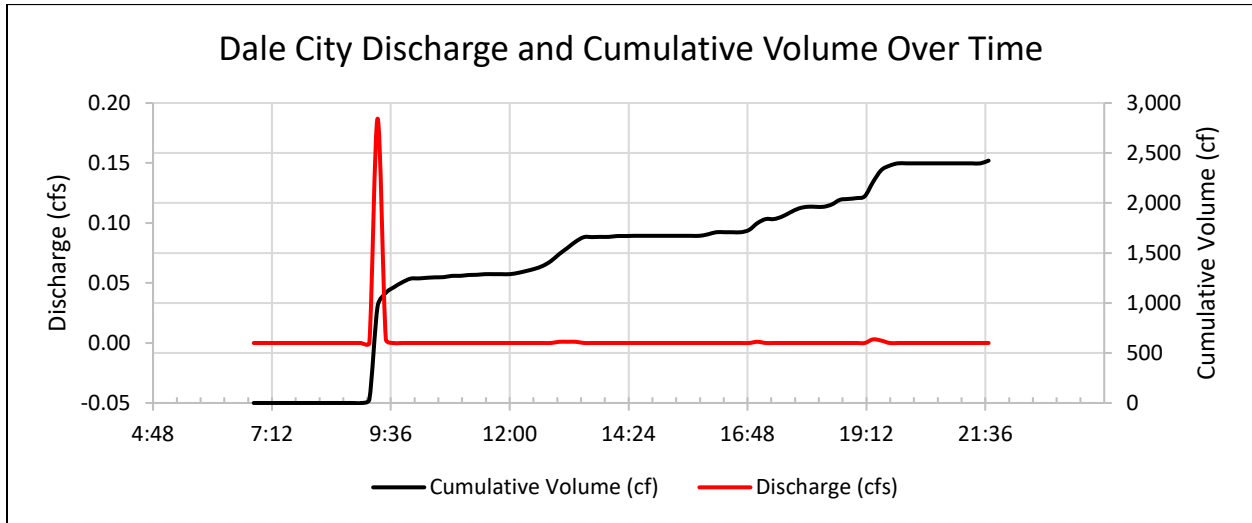
Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	12/10/2023 10:00	41,369.10	4.45%	222.44
2	12/10/2023 10:30	45,279.80	4.87%	243.47
3	12/10/2023 11:00	42,609.80	4.58%	229.11
4	12/10/2023 11:30	42,288.20	4.55%	227.38
5	12/10/2023 12:00	38,855.60	4.18%	208.93
6	12/10/2023 12:30	35,881.60	3.86%	192.94
7	12/10/2023 13:00	35,937.90	3.86%	193.24
8	12/10/2023 13:30	33,973.20	3.65%	182.67
9	12/10/2023 14:00	33,063.00	3.56%	177.78
10	12/10/2023 14:30	32,252.80	3.47%	173.42
11	12/10/2023 15:00	31,540.10	3.39%	169.59
12	12/10/2023 15:30	31,345.30	3.37%	168.54
13	12/10/2023 16:00	32,936.40	3.54%	177.10
14	12/10/2023 16:30	32,396.20	3.48%	174.19
15	12/10/2023 17:00	35,358.50	3.80%	190.12
16	12/10/2023 17:30	34,561.40	3.72%	185.84
17	12/10/2023 18:00	39,731.90	4.27%	213.64
18	12/10/2023 18:30	42,670.20	4.59%	229.44
19	12/10/2023 19:00	39,634.10	4.26%	213.11
20	12/10/2023 19:30	45,713.80	4.92%	245.80
21	12/10/2023 20:00	45,300.40	4.87%	243.58
22	12/10/2023 20:30	44,683.10	4.81%	240.26
23	12/10/2023 21:00	44,867.90	4.83%	241.26
24	12/10/2023 21:30	47,634.70	5.12%	256.13

\*5.0 L sample

**SITE #4684; DALE CITY, VA**

Flow rate reached 0.187 cfs with one predominate peak. The storm event hydrograph compared with cumulative volume can be seen in Figure 2. Table 2 lists the proportion of each sample mixed with the flow-weighted composite. The flow-weighted composite volume was adjusted to incorporate representative volumes from the collected samples.

**Figure 2: Flow data over time for the storm event at Site #4684 on December 10, 2023**



**Table 2: Summary of Flow Weighted Composite – Site #4684**

Bottle #	Time of Sample	Volume (cf)	% of Flow	Flow Weighted Volume (mL)*
1	12/10/2023 9:10	36.02	8.33%	416.67
2	12/10/2023 9:40	57.21	13.24%	661.77
3	12/10/2023 10:10	2.12	0.49%	24.51
4	12/10/2023 10:40	2.12	0.49%	24.51
5	12/10/2023 11:10	8.48	1.96%	98.04
6	12/10/2023 11:40	0.00	0.00%	-
7	12/10/2023 12:10	12.71	2.94%	147.06
8	12/10/2023 12:40	29.66	6.86%	343.13
9	12/10/2023 13:10	61.45	14.22%	710.79
10	12/10/2023 13:40	0.00	0.00%	-
11	12/10/2023 14:10	8.48	1.96%	98.04
12	12/10/2023 14:40	0.00	0.00%	-
13	12/10/2023 15:10	0.00	0.00%	-
14	12/10/2023 15:40	0.00	0.00%	-
15	12/10/2023 16:10	21.19	4.90%	245.10
16	12/10/2023 16:40	0.00	0.00%	-
17	12/10/2023 17:10	40.26	9.31%	465.69
18	12/10/2023 17:40	42.38	9.80%	490.20
19	12/10/2023 18:10	0.00	0.00%	-
20	12/10/2023 18:40	46.62	10.78%	539.21
21	12/10/2023 19:10	19.07	4.41%	220.59
22	12/10/2023 19:40	44.50	10.29%	514.70
23	12/10/2023 20:10	0.00	0.00%	-
24	12/10/2023 20:40	0.00	0.00%	-

\*5.0 L sample

### 3.2 LABORATORY ANALYTICAL RESULTS

Samples were sent to Pace Analytical Services, Inc. lab in Asheville, NC for analysis, with Analytical Parameters tested listed in **Table 3**.

**Table 3: Analytical Parameters**

Analyte	Analysis Method
Copper	EPA 200.7
Lead	EPA 200.7
Nickel	EPA 200.7
Zinc	EPA 200.7
Total Suspended Solids	SM 2540D
pH	EPA 9040
Ammonia	EPA 350.1 1993 Rev 2.0
Total Kjeldahl Nitrogen	EPA 351.2
Nitrate + Nitrite Nitrogen	EPA 353.2
Total Phosphorus	EPA 365.1
Chemical Oxygen Demand	SM 5220D

**Table 4: Results of Water Quality Analysis**

	Analyte	Analyte Value*	Analyte Unit	Reporting Limit	Exceedance Criterion	Criterion Basis
Manassas (#941)	Copper	15.1	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	40.4	µg/L	10.0	120	a
	Total Suspended Solids	12.2	mg/L	1.2	100	b
	Nitrogen, Ammonia	ND	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.35	mg/L	0.040	-	-
	Total Nitrogen	1.6	mg/L	0.040	2.2	c
	Phosphorus, Total	0.10	mg/L	0.050	2	b
	Chemical Oxygen Demand	28.7	mg/L	25	120	b
	pH	7.3	Std. Units	0.10	6.0-9.0	d
Dale City (#4684)	Copper	6.2	µg/L	5.0	13	a
	Lead	ND	µg/L	5.0	120	a
	Nickel	ND	µg/L	5.0	180	a
	Zinc	38.8	µg/L	10.0	120	a
	Total Suspended Solids	3.6	mg/L	1.0	100	b
	Nitrogen, Ammonia	0.18	mg/L	0.10	-	-
	Nitrogen, Kjeldahl, Total	2.1	mg/L	0.50	-	-
	Nitrogen, NO <sub>2</sub> plus NO <sub>3</sub>	0.23	mg/L	0.040	-	-
	Total Nitrogen	2.4	mg/L	0.040	2.2	c
	Phosphorus, Total	ND	mg/L	0.050	2	b
	Chemical Oxygen Demand	ND	mg/L	25.0	120	b
	pH	7.0	Std. Units	0.10	6.0-9.0	d

<sup>a</sup> State Water Quality Control Board Acute Standards for Surface Water Quality. Value is based on an assumed hardness of 100 mg/L.

<sup>b</sup> Based on benchmark criteria for the VPDES Industrial Stormwater General Permit.

<sup>c</sup> The sum of Nitrogen as Ammonia, NO<sub>2</sub>, NO<sub>3</sub>, and Total Kjeldahl Nitrogen.

<sup>d</sup> Based on numeric effluent limitations noted in the VPDES Permit for Discharge of Stormwater Associated with Industrial Activity.

\* Values highlighted in red were found to be in exceedance of their respective criterion.

ND = The analyte was not detected above specified reporting limit.



**APPENDIX A**  
**PHOTO LOG OF SITE CONDITIONS**

**Wet Weather Monitoring Q4 Report**  
**Prince William County, VA**  
Photographic Log



**Site:** Dale City Station

**Photo: 1**

**Date:** 12/10/2023

**Description:** Dale City sampler set up overview.



**Site:** Dale City Station

**Photo: 2**

**Date:** 12/10/2023

**Description:** Dale City outfall, downstream. Note Iron-oxidizing bacteria growth and staining along footing and eroded outlet protection.



Photographic Log

Prince William County Wet Weather Monitoring Q4  
Project No. 151280003

February 12, 2024  
Prince William County, VA



**Site:** Manassas Station

**Photo:** 3

**Date:** 12/10/2023

**Description:** Manassas downstream of outfall. Note ponded water, trash, and dull sheen.



**Site:** Manassas Station

**Photo:** 4

**Date:** 12/10/2023

**Description:** Manassas outfall with ring installed. Note ponded water and graffiti.

**APPENDIX B**  
**WATER QUALITY LABORATORY RESULTS**



February 05, 2024

Ilana Ton  
WSP USA  
13530 Dulles Technology Drive  
Suite 300  
Herndon, VA 20171

RE: Project: Prince William County  
Pace Project No.: 92703517

Dear Ilana Ton:

Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

A revised report is being submitted on 2/5/24 to include the total nitrogen calculation. This was not initially reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Angela M. Baioni*

Angela Baioni for  
Eben Buchanan  
eben.buchanan@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## CERTIFICATIONS

Project: Prince William County  
Pace Project No.: 92703517

---

### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
North Carolina Drinking Water Certification #: 37712  
North Carolina Wastewater Certification #: 40

South Carolina Laboratory ID: 99030  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Prince William County  
Pace Project No.: 92703517

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92703517001	Man	Water	12/11/23 16:30	12/13/23 10:40
92703517002	DAL	Water	12/11/23 16:30	12/13/23 10:40

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Prince William County  
 Pace Project No.: 92703517

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92703517001	Man	EPA 200.7 Rev 4.4 1994	DBB1, SBW	4	PASI-A
		SM 2540D-2011	RVS	1	PASI-A
		EPA 9040C	YEG	1	PASI-A
		TKN+NO3+NO2 Calculation	KDF1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	ARJ	1	PASI-A
		EPA 351.2 Rev 2.0 1993	MFO	1	PASI-A
		EPA 353.2 Rev 2.0 1993	EGC	1	PASI-A
		EPA 365.1 Rev 2.0 1993	ZJP	1	PASI-A
		SM 5220D-2011	JP1	1	PASI-A
		92703517002	DAL	EPA 200.7 Rev 4.4 1994	DBB1, SBW
SM 2540D-2011	RVS			1	PASI-A
EPA 9040C	YEG			1	PASI-A
TKN+NO3+NO2 Calculation	KDF1			1	PASI-A
EPA 350.1 Rev 2.0 1993	ARJ			1	PASI-A
EPA 351.2 Rev 2.0 1993	MFO			1	PASI-A
EPA 353.2 Rev 2.0 1993	EGC			1	PASI-A
EPA 365.1 Rev 2.0 1993	ZJP			1	PASI-A
SM 5220D-2011	JP1			1	PASI-A

PASI-A = Pace Analytical Services - Asheville

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: Prince William County

Pace Project No.: 92703517

Sample: Man	Lab ID: 92703517001	Collected: 12/11/23 16:30	Received: 12/13/23 10:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>		Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville						
Copper	15.1	ug/L	5.0	1	12/14/23 13:05	12/19/23 17:22	7440-50-8	
Lead	ND	ug/L	5.0	1	12/14/23 13:05	12/19/23 17:22	7439-92-1	
Nickel	ND	ug/L	5.0	1	12/14/23 13:05	12/18/23 18:14	7440-02-0	
Zinc	40.4	ug/L	10.0	1	12/14/23 13:05	12/18/23 18:14	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	12.2	mg/L	1.2	1		12/14/23 20:11		
<b>9040 pH</b>		Analytical Method: EPA 9040C Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.3	Std. Units	0.10	1		12/18/23 10:21		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	1.6	mg/L	0.040	1		02/05/24 14:35		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	1		12/20/23 12:33	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	1	12/18/23 18:22	12/19/23 05:18	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.35	mg/L	0.040	1		12/20/23 11:05		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	0.10	mg/L	0.050	1	12/19/23 12:02	12/20/23 11:03	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	28.7	mg/L	25.0	1	12/16/23 01:38	12/16/23 05:18		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Prince William County

Pace Project No.: 92703517

Sample: DAL	Lab ID: 92703517002	Collected: 12/11/23 16:30	Received: 12/13/23 10:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP</b>		Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994 Pace Analytical Services - Asheville						
Copper	6.2	ug/L	5.0	1	12/14/23 13:05	12/19/23 17:25	7440-50-8	
Lead	ND	ug/L	5.0	1	12/14/23 13:05	12/19/23 17:25	7439-92-1	
Nickel	ND	ug/L	5.0	1	12/14/23 13:05	12/18/23 18:16	7440-02-0	
Zinc	38.8	ug/L	10.0	1	12/14/23 13:05	12/18/23 18:16	7440-66-6	
<b>2540D TSS, Low-Level</b>		Analytical Method: SM 2540D-2011 Pace Analytical Services - Asheville						
Total Suspended Solids	3.6	mg/L	1.0	1		12/14/23 20:16		
<b>9040 pH</b>		Analytical Method: EPA 9040C Pace Analytical Services - Asheville						
pH at 25 Degrees C	7.0	Std. Units	0.10	1		12/18/23 10:25		H3
<b>Total Nitrogen Calculation</b>		Analytical Method: TKN+NO3+NO2 Calculation Pace Analytical Services - Asheville						
Total Nitrogen	2.4	mg/L	0.040	1		02/05/24 14:35		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Ammonia	0.18	mg/L	0.10	1		12/20/23 12:35	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, Kjeldahl, Total	2.1	mg/L	0.50	1	12/18/23 18:22	12/19/23 05:19	7727-37-9	
<b>353.2 Nitrogen, NO2/NO3 pres.</b>		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville						
Nitrogen, NO2 plus NO3	0.23	mg/L	0.040	1		12/20/23 11:06		
<b>365.1 Phosphorus, Total</b>		Analytical Method: EPA 365.1 Rev 2.0 1993 Preparation Method: EPA 365.1 Rev 2.0 1993 Pace Analytical Services - Asheville						
Phosphorus	ND	mg/L	0.050	1	12/19/23 12:02	12/20/23 11:05	7723-14-0	
<b>5220D COD</b>		Analytical Method: SM 5220D-2011 Preparation Method: SM 5220D-2011 Pace Analytical Services - Asheville						
Chemical Oxygen Demand	ND	mg/L	25.0	1	12/16/23 01:38	12/16/23 05:18		

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	819551	Analysis Method:	EPA 200.7 Rev 4.4 1994
QC Batch Method:	EPA 200.7 Rev 4.4 1994	Analysis Description:	200.7 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4242213 Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	ND	5.0	12/19/23 16:43	
Lead	ug/L	ND	5.0	12/19/23 16:43	
Nickel	ug/L	ND	5.0	12/18/23 17:40	
Zinc	ug/L	ND	10.0	12/18/23 17:40	

LABORATORY CONTROL SAMPLE: 4242214

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	487	97	85-115	
Lead	ug/L	500	479	96	85-115	
Nickel	ug/L	500	437	87	85-115	
Zinc	ug/L	500	436	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4242215 4242216

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92703513001 Result	Spike Conc.	Spike Conc.	Result						
Copper	ug/L	20.7	500	500	521	529	100	102	70-130	1	20
Lead	ug/L	ND	500	500	483	491	96	97	70-130	2	20
Nickel	ug/L	ND	500	500	446	453	88	90	70-130	2	20
Zinc	ug/L	106	500	500	546	557	88	90	70-130	2	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4242217 4242218

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92703513002 Result	Spike Conc.	Spike Conc.	Result						
Copper	ug/L	8.5	500	500	491	505	97	99	70-130	3	20
Lead	ug/L	ND	500	500	479	490	96	98	70-130	2	20
Nickel	ug/L	ND	500	500	445	456	89	91	70-130	2	20
Zinc	ug/L	27.9	500	500	471	482	89	91	70-130	2	20

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### QUALITY CONTROL DATA

Project: Prince William County

Pace Project No.: 92703517

QC Batch: 819491

Analysis Method: SM 2540D-2011

QC Batch Method: SM 2540D-2011

Analysis Description: 2540D Total Suspended Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4241902

Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	12/14/23 20:08	

LABORATORY CONTROL SAMPLE: 4241903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 4242113

Parameter	Units	92703113001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	723	750	4	10	

SAMPLE DUPLICATE: 4242114

Parameter	Units	92703117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	912	1020	12	10	D6

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### QUALITY CONTROL DATA

Project: Prince William County

Pace Project No.: 92703517

QC Batch: 820216

Analysis Method: EPA 9040C

QC Batch Method: EPA 9040C

Analysis Description: 9040 pH

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

SAMPLE DUPLICATE: 4245584

Parameter	Units	92702944001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.5	4.6	3	10	D6,H3

SAMPLE DUPLICATE: 4245585

Parameter	Units	92704228002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.9	0	10	H3

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### QUALITY CONTROL DATA

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	820442	Analysis Method:	EPA 350.1 Rev 2.0 1993
QC Batch Method:	EPA 350.1 Rev 2.0 1993	Analysis Description:	350.1 Ammonia
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4246587 Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/20/23 12:02	

LABORATORY CONTROL SAMPLE: 4246588

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4246589 4246590

Parameter	Units	92702954002		4246590		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.1	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4246591 4246592

Parameter	Units	92703286001		4246592		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.1	100	101	90-110	0	10	

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**QUALITY CONTROL DATA**

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	820265	Analysis Method:	EPA 351.2 Rev 2.0 1993
QC Batch Method:	EPA 351.2 Rev 2.0 1993	Analysis Description:	351.2 TKN
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4245790 Matrix: Water  
 Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	12/19/23 05:13	

LABORATORY CONTROL SAMPLE: 4245791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.4	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4245792 4245793

Parameter	Units	4245792		4245793		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10	11.1	11.5	108	111	90-110	3	10 M1

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**QUALITY CONTROL DATA**

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	820509	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, preserved
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4246879 Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.040	12/20/23 10:52	

LABORATORY CONTROL SAMPLE: 4246880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4246881 4246882

Parameter	Units	4246881		4246882		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Nitrogen, NO2 plus NO3	mg/L	0.26	2.5	2.5	2.6	2.5	92	91	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4246883 4246884

Parameter	Units	4246883		4246884		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Nitrogen, NO2 plus NO3	mg/L	0.37	2.5	2.5	2.6	2.6	91	91	90-110	0	10	

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**QUALITY CONTROL DATA**

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	820280	Analysis Method:	EPA 365.1 Rev 2.0 1993
QC Batch Method:	EPA 365.1 Rev 2.0 1993	Analysis Description:	365.1 Phosphorus, Total
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4245832 Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	12/20/23 10:37	

LABORATORY CONTROL SAMPLE: 4245833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4245834 4245835

Parameter	Units	4245834		4245835		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.056	2.5	2.5	2.6	2.6	100	100	90-110	0	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4245836 4245837

Parameter	Units	4245836		4245837		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Phosphorus	mg/L	0.055	2.5	2.5	2.6	2.6	101	100	90-110	0	10

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**QUALITY CONTROL DATA**

Project: Prince William County

Pace Project No.: 92703517

QC Batch:	820078	Analysis Method:	SM 5220D-2011
QC Batch Method:	SM 5220D-2011	Analysis Description:	5220D COD
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92703517001, 92703517002

METHOD BLANK: 4245150 Matrix: Water

Associated Lab Samples: 92703517001, 92703517002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	12/16/23 05:11	

LABORATORY CONTROL SAMPLE: 4245151

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	775	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4245152 4245153

Parameter	Units	4245152		4245153		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Chemical Oxygen Demand	mg/L	92702148002 ND	100	100	162	131	138	107	107	90-110	21	3	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4245154 4245155

Parameter	Units	4245154		4245155		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Chemical Oxygen Demand	mg/L	92702977001 ND	100	100	120	120	107	107	107	90-110	0	3	

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## QUALIFIERS

Project: Prince William County

Pace Project No.: 92703517

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Prince William County

Pace Project No.: 92703517

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92703517001	Man	EPA 200.7 Rev 4.4 1994	819551	EPA 200.7 Rev 4.4 1994	819667
92703517002	DAL	EPA 200.7 Rev 4.4 1994	819551	EPA 200.7 Rev 4.4 1994	819667
92703517001	Man	SM 2540D-2011	819491		
92703517002	DAL	SM 2540D-2011	819491		
92703517001	Man	EPA 9040C	820216		
92703517002	DAL	EPA 9040C	820216		
92703517001	Man	TKN+NO3+NO2 Calculation	830126		
92703517002	DAL	TKN+NO3+NO2 Calculation	830126		
92703517001	Man	EPA 350.1 Rev 2.0 1993	820442		
92703517002	DAL	EPA 350.1 Rev 2.0 1993	820442		
92703517001	Man	EPA 351.2 Rev 2.0 1993	820265	EPA 351.2 Rev 2.0 1993	820397
92703517002	DAL	EPA 351.2 Rev 2.0 1993	820265	EPA 351.2 Rev 2.0 1993	820397
92703517001	Man	EPA 353.2 Rev 2.0 1993	820509		
92703517002	DAL	EPA 353.2 Rev 2.0 1993	820509		
92703517001	Man	EPA 365.1 Rev 2.0 1993	820280	EPA 365.1 Rev 2.0 1993	820562
92703517002	DAL	EPA 365.1 Rev 2.0 1993	820280	EPA 365.1 Rev 2.0 1993	820562
92703517001	Man	SM 5220D-2011	820078	SM 5220D-2011	820093
92703517002	DAL	SM 5220D-2011	820078	SM 5220D-2011	820093

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CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Face T... Conditions found at: https://face.analytical.com/chain-of-custody-terms.pdf

Company: Wood/WSP Address: 4795 Meadow Wood Ln, Suite 310E, Chainilly, VA 20251

Report To: Ilana Ton Email To: ilana.ton@wsp.com

Customer Project Name/Number: Prince William County/ 151280003.0002.\*\*\*\* PORG 7526, GL Code 5730-00

Phone: 703 488 3778 Email: ilana.ton@wsp.com

Collected By (print): I, DK

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] 14 Day [X] 5 Day

Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (S1), Oil (O1), Wipe (WP), Air (AR), Tissue (TS), Brassary (B), Vapor (V), Other (OT)

Table with columns: Matrix, Comp / Grab, Collected (or Composite) Date, Composite End Date, Res, # of Cns

Customer Remarks / Special Conditions / possible Hazards: Type of Ice Used: Wet Blue Dry None Packing Material Used: NONE Radchem sample(s) screened (<500 cpm): Y N N/A

WO#: 92703517 Barcode CLIENT: 92-AmeC VR Due Date: 12/20/23

Analyses: (6) methanol, (7) sodium bisulfate, (8) sodium, (C) ammonium hydroxide, (D) TSP, (U) Unpres.

Table with columns: Container Type, SM 2540D-2015 TSS, 200.7 Metals, EPA 351.2 TKN/ EPA 353.2 NO2 + NO3, EPA 350.1 Ammonia/EPA 365.1 Phosphorus/ SM 5220D-2011 COD, SM 4500-H+B-2011 pH

Lab Profile/Line: Lab Sample Receipt Checklist: Custody Seals Present/Intact X Y N/A, Custody Signatures Present X Y N/A, Collector Signature Present X Y N/A, Correct Bottles X Y N/A, Sufficient Volume X Y N/A, Samples Received on Ice X Y N/A, VOA - Headspace Acceptable X Y N/A, USDA Regulated Soils X Y N/A, Samples in Holding Time X Y N/A, Residual Chlorine Present X Y N/A, Cl Strips: 328799 X Y N/A, Sample pH Acceptable X Y N/A, pH Strips: 347222 X Y N/A, Sulfide Present X Y N/A, Lead Acetate Strips: X Y N/A, LAB USE ONLY: Lab Sample # / Comments:



DC#\_Title: ENV-FRM-HUN1-0083 v02\_Sample Condition Upon Receipt

Effective Date: 11/14/2022 8:18:30 AM

WO#: 92703517

\*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

PM: SC

Due Date: 12/20/23

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: 92-Amec VA

\*\*Bottom half of box is to list number of bottles

\*\*\* Check all unpreserved Nitrates for chlorine

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic 2N Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	X			1	X	X																						
2	X			1	X	X																						
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

## **Appendix O**

### **Annual VDOT Coordination Meeting – Participant List**



## 1. Summary

Meeting title	VDOT - NOVA MS4 Phase I Annual Coordination Meeting
Attended participants	17
Start time	4/15/24, 1:27:33 PM
End time	4/15/24, 2:58:06 PM
Meeting duration	1h 30m 32s
Average attendance time	1h 20m 54s

## 2. Participants

Name	First Join	Last Leave	In-Meeting Duration	Participant ID (UPN)	Role
Normand Goulet	4/15/24, 1:28:13 PM	4/15/24, 2:56:10 PM	1h 27m 57s	NGoulet@novaregion.org	Organizer
Allie Wagner	4/15/24, 1:27:36 PM	4/15/24, 2:56:04 PM	1h 28m 27s	awagner@novaregion.org	Presenter
Grandfield, Nancy (VDOT)	4/15/24, 1:29:04 PM	4/15/24, 2:56:11 PM	1h 27m 6s	Nancy.Grandfield@vdot.virginia.gov	Presenter
Fults, Michelle (VDOT)	4/15/24, 1:29:34 PM	4/15/24, 2:56:11 PM	1h 26m 36s	Michelle.Fults@vdot.virginia.gov	Presenter
Fernandez, Ricardo	4/15/24, 1:30:21 PM	4/15/24, 2:56:11 PM	1h 25m 50s	Ricardo.Fernandez@fairfaxcounty.gov	Presenter
Canizales, Hannah (External)	4/15/24, 1:30:23 PM	4/15/24, 2:57:52 PM	1h 27m 28s	HCanizales@pwcgov.org	Presenter
Lightfoot, Jennifer "J.J." (VDOT)	4/15/24, 1:30:26 PM	4/15/24, 2:56:11 PM	1h 25m 45s	Jennifer.Lightfoot@vdot.virginia.gov	Presenter
Stafford, Matthew (VDOT)	4/15/24, 1:30:26 PM	4/15/24, 2:56:04 PM	1h 25m 38s	Matthew.Stafford@vdot.virginia.gov	Presenter
Foraste, Alex (VDOT)	4/15/24, 1:30:48 PM	4/15/24, 2:56:10 PM	1h 25m 22s	Alex.Foraste@vdot.virginia.gov	Presenter
Parfitt, Joe (VDOT)	4/15/24, 1:30:48 PM	4/15/24, 2:56:09 PM	1h 25m 20s	Joseph.Parfitt@vdot.virginia.gov	Presenter
Hurd, Martin	4/15/24, 1:30:48 PM	4/15/24, 2:56:11 PM	1h 25m 23s	martin.hurd@fairfaxcounty.gov	Presenter
Eib, Benjamin A. (External)	4/15/24, 1:31:04 PM	4/15/24, 2:56:08 PM	1h 25m 4s	BEib@pwcgov.org	Presenter
Ugnow, Andrew (Guest)	4/15/24, 1:31:08 PM	4/15/24, 2:56:14 PM	1h 25m 5s	auglow_pwcgov.org	Presenter
Mohan, Madan (External)	4/15/24, 1:31:10 PM	4/15/24, 2:58:06 PM	1h 26m 55s	mmohan@pwcgov.org	Presenter
Jason Papacosma	4/15/24, 1:31:29 PM	4/15/24, 2:56:04 PM	1h 24m 35s	Jpapacosma@arlingtonva.us	Presenter
Teran, Luis (Guest)	4/15/24, 1:34:45 PM	4/15/24, 2:56:12 PM	1h 21m 27s	luis.teran_fairfaxcounty.gov	Presenter
Nelson, Brendan (VDOT)	4/15/24, 1:35:36 PM	4/15/24, 1:36:59 PM	1m 22s	Brendan.Nelson@vdot.virginia.gov	Presenter

## 3. In-Meeting Activities

Name	Join Time	Leave Time	Duration	Email	Role
Normand Goulet	4/15/24, 1:28:13 PM	4/15/24, 2:56:10 PM	1h 27m 57s	NGoulet@novaregion.org	Organizer
Allie Wagner	4/15/24, 1:27:36 PM	4/15/24, 2:56:04 PM	1h 28m 27s	awagner@novaregion.org	Presenter
Grandfield, Nancy (VDOT)	4/15/24, 1:29:04 PM	4/15/24, 2:56:11 PM	1h 27m 6s	Nancy.Grandfield@vdot.virginia.gov	Presenter
Fults, Michelle (VDOT)	4/15/24, 1:29:34 PM	4/15/24, 2:56:11 PM	1h 26m 36s	Michelle.Fults@vdot.virginia.gov	Presenter

Fernandez, Ricardo	4/15/24, 1:30:21 PM	4/15/24, 2:56:11 PM	1h 25m 50s	Ricardo.Fernandez@fairfaxcounty.gov	Presenter
Canizales, Hannah (External)	4/15/24, 1:30:23 PM	4/15/24, 2:57:52 PM	1h 27m 28s	HCanizales@pwcgov.org	Presenter
Lightfoot, Jennifer "J.J." (VDOT)	4/15/24, 1:30:26 PM	4/15/24, 2:56:11 PM	1h 25m 45s	Jennifer.Lightfoot@vdot.virginia.gov	Presenter
Stafford, Matthew (VDOT)	4/15/24, 1:30:26 PM	4/15/24, 2:56:04 PM	1h 25m 38s	Matthew.Stafford@vdot.virginia.gov	Presenter
Foraste, Alex (VDOT)	4/15/24, 1:30:48 PM	4/15/24, 2:56:10 PM	1h 25m 22s	Alex.Foraste@vdot.virginia.gov	Presenter
Parfitt, Joe (VDOT)	4/15/24, 1:30:48 PM	4/15/24, 2:56:09 PM	1h 25m 20s	Joseph.Parfitt@vdot.virginia.gov	Presenter
Hurd, Martin	4/15/24, 1:30:48 PM	4/15/24, 2:56:11 PM	1h 25m 23s	Martin.Hurd@fairfaxcounty.gov	Presenter
Eib, Benjamin A. (External)	4/15/24, 1:31:04 PM	4/15/24, 2:56:08 PM	1h 25m 4s	BEib@pwcgov.org	Presenter
Uglow, Andrew (Guest)	4/15/24, 1:31:08 PM	4/15/24, 2:56:14 PM	1h 25m 5s	auglow@pwcgov.org	Presenter
Mohan, Madan (External)	4/15/24, 1:31:10 PM	4/15/24, 2:58:06 PM	1h 26m 55s	mmohan@pwcgov.org	Presenter
Jason Papacosma	4/15/24, 1:31:29 PM	4/15/24, 2:56:04 PM	1h 24m 35s	Jpapacosma@arlingtonva.us	Presenter
Teran, Luis (Guest)	4/15/24, 1:34:45 PM	4/15/24, 2:56:12 PM	1h 21m 27s	luis.teran@fairfaxcounty.gov	Presenter
Nelson, Brendan (VDOT)	4/15/24, 1:35:36 PM	4/15/24, 1:36:59 PM	1m 22s	Brendan.Nelson@vdot.virginia.gov	Presenter

## **Appendix P**

# **Biological Monitoring Report**

# Benthic Macroinvertebrate Population and Water Quality Monitoring Report

Fall 2023 and Spring 2024

*Prepared for:*



## **Prince William County Department of Public Works**

5 County Complex Court, Suite 170  
Prince William, Virginia 22192

*Prepared by:*

## **WSP Environment & Infrastructure Solutions, Inc.**

13530 Dulles Technology Dr Suite 300  
Herndon, VA 20171  
(703) 742-5700

September 10, 2024  
Project No. 151280003

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## APPENDICES

Appendix A - Site Data Sheets

Appendix B - Water Quality Laboratory Results

Appendix C - Benthic Macroinvertebrate Laboratory Results

### LIST OF ACRONYMS

BI	Biotic Index
°C	Degrees Celsius
CWA	Clean Water Act
DO	Dissolved Oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
EPT	Ephemeroptera/Plecoptera/Trichoptera
m	Meter
mg/L	Milligrams per Liter
µS/cm	Microsiemens per Centimeter
MPN/100mL	Most Probable Number of Coliform per 100 Milliliters
m/s	Meters per Second
MS4	Municipal Separate Storm Sewer System
NTU	Nephelometric Turbidity Units
PMA	Percent Model Affinity
RBP	USEPA Rapid Bioassessment Protocol
SU	Standard Units
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

## 1.0 Introduction

WSP Environment & Infrastructure Solutions, Inc. (WSP) has prepared this report for ongoing benthic macroinvertebrate sampling for compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Permit, Municipal Separate Storm Sewer System (MS4) Permit Number VA0088595, issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. This report presents the results of the 2023 Fall and 2024 Spring sampling events, which were conducted in accordance with the *Sampling Plan for Benthic Macroinvertebrate Population and Water Quality Monitoring* (Sampling Plan) (Amec Foster Wheeler 2015). This report provides detailed descriptions of the sampling and analysis activities conducted, as well as the water quality analytical results and benthic macroinvertebrate results. In addition, this report provides a comparison summary with the baseline results from the 2016 Spring and Fall sampling events (spring and fall baselines).

### 1.1 Background

The U.S. Environmental Protection Agency (USEPA) delegated the authority to implement Section 402 of the Clean Water Act (CWA) to the Commonwealth of Virginia on March 31, 1975. Subsequently, Section 62.1-44.15:25 of the Virginia Stormwater Management Act authorizes VDEQ to issue, deny, amend, revoke, terminate, and enforce permits for the control of stormwater discharges from MS4s. The VSMP Permit Number VA0088595 authorizes point source discharges of stormwater runoff and certain non-stormwater discharges from the MS4 operated or owned by Prince William County. Part I.C of the VSMP permit outlines the monitoring requirements guided by Section 9VAC25-870-380 C.2.c.(4) of the VSMP regulations. As stipulated in the permit, benthic macroinvertebrate and surface water monitoring is conducted at five locations in Prince William County: Cow Branch (PC 20), Dawkins Branch (PC 30), Little Bull Run (PC 90), Neabsco Creek (PC 60), and Purcell Branch (PC 10). A site locations map and site sampling location maps can be found in Figures 1 through 6.

### 1.2 Purpose

The purpose of this sampling report is to provide data that will be used to comply with the biological stream (Part I.C.1) and in-stream monitoring (Part I.C.2) requirements outlined in Prince William County's permit. The specific objectives are to gather sufficient data to evaluate, and subsequently demonstrate, the effectiveness of upstream best management practices. The results presented in this report will be compared to baseline conditions to evaluate trends in benthic health and stream ecosystem conditions at each site.



## 2.0 Methods

Sample collection occurred from October 25 to 27, 2023, and from April 23 to 25, 2024, in accordance with the Sampling Plan. Benthic macroinvertebrate and surface water samples were collected by WSP personnel from five locations in Prince William County: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch (Figures 1 through 6). The field team prepared Physical Characterization/Water Quality Field Data Sheets and Habitat Assessment Field Data Sheets for High Gradient Streams, as specified in USEPA Rapid Bioassessment Protocol (RBP) (Barbour et al. 1999; Appendix A). In-situ water quality data were collected using a YSI 556 water quality meter for dissolved oxygen (DO), pH, conductivity, and temperature. Turbidity was measured using a HACH Turbidimeter 2100Q in Nephelometric Turbidity Units (NTU).

Approximate stream width, water depth, and transparency (as measured with a Secchi disk) were measured in meters (m). Water velocity was measured with a HACH flow meter in meters per second (m/s). Upstream and downstream photographs were also taken for each site (Appendix A). Grab water samples were analyzed for ammonia, *Escherichia coli* (*E. coli*), nitrate/nitrite, orthophosphate, total Kjeldahl nitrogen (TKN), total nitrogen, total phosphorus, and total suspended solids (TSS).

Benthic macroinvertebrate sampling was conducted in accordance with the Sampling Plan. The multiple habitat sampling method was used for each of the sites. This method consists of a total of 20 jabs or kicks, taken from each major habitat type in the reach. Benthic macroinvertebrate samples were placed on ice in coolers and shipped overnight to WSP's benthic macroinvertebrate laboratory in Gainesville, Florida. The laboratory sorted, mounted, identified, enumerated, evaluated, and classified benthic macroinvertebrates according to Section 7.2 of the RBP (Barbour et al. 1999). Eight metrics were calculated including the Hilsenhoff Biotic Index (HBI) (1987); the Percent Model Affinity (PMA) from Novak and Bode (1992); and the Virginia Stream Condition Index (VSCI) using guidance from TetraTech (2003) and VDEQ (2008).

It should be noted that HBI, PMA, and VSCI represent various ways to assess stream condition; as a result, score categories will not always agree among assessments. HBI estimates the overall tolerance of the community in a sampled area, weighted by the relative abundance of each taxonomic group (e.g., family), and the group's predetermined tolerance level. PMA is an index of percentage similarity, used to measure the affinity of various metrics (e.g., species richness) from the sample reach to that of the expected model community. VSCI is an index designed specifically for streams and small rivers in Virginia. The index utilizes eight scoring metrics, comparing monitored site metrics to the metrics of a designated reference condition.

### 3.0 Results

Sample collection occurred from October 25 to 27, 2023, and from April 23 to 25, 2024, in accordance with the Sampling Plan and is summarized in the following sections.

#### 3.1 Field Condition and Parameter Results

Assessing physical habitat quality is an integral component of the final evaluation of impairment. The RBP matrix used to assess habitat quality is based on 10 visual physical characteristics of the waterbody and surrounding land, particularly the catchment of the site under investigation. The habitat parameters evaluated are related to overall aquatic life use and are a potential source of limitation to the aquatic biota; the scoring of each of these characteristics is included as page 4 of the site datasheets in Appendix A, while score totals and the resulting condition categories are summarized in Table 1 for the Fall 2023 event and Table 2 for Spring 2024 event. The RBP defines the following condition categories based on the physical habitat characterization scores, to determine the ability of the habitat to support an optimal biological community:

<b>151-200</b>	<b>Optimal</b>	The physical habitat present meets natural expectations and can support optimal benthic community.
<b>101-150</b>	<b>Suboptimal</b>	Physical habitat is less than desirable but satisfies expectations under most circumstances to support a benthic community.
<b>51-100</b>	<b>Marginal</b>	Physical habitat has moderate levels of degradation, with a severity at frequent intervals throughout the reach, which limit the capability of supporting a benthic community.
<b>0-50</b>	<b>Poor</b>	Physical habitat has been substantially altered with severe degradation to characteristics that would support a benthic community.

Water quality is also an integral component of stream evaluation and the ability of a stream to support biological communities. Surface waters should meet Virginia's Water Quality Standards, as outlined in Section 9VAC25-260. However, these standards represent limits not to be exceeded. For a general comparison, the following bullets summarize typical conditions for piedmont streams.

- A pH range of 6.5 to 8.0 standard units (SU) is optimal for most organisms, as a pH outside this range reduces the diversity in the stream because it stresses the physiological systems of most organisms and can reduce reproduction.
- Distilled water has conductivity in the range of 0.5 to 3 microsiemens per centimeter ( $\mu\text{S}/\text{cm}$ ). The conductivity of streams generally range from 0 to 1500  $\mu\text{S}/\text{cm}$ , while studies of inland fresh waters indicate that streams supporting mixed fisheries have a range between 50 and 500  $\mu\text{S}/\text{cm}$ .
- Temperature affects feeding, reproduction, and metabolism of aquatic animals. A week or two of high temperatures may make a stream unsuitable for sensitive aquatic

organisms; the maximum temperature of nontidal (piedmont) streams should not exceed 32 degrees Celsius (°C).

- DO is an important measure of stream water quality, as aquatic organisms need DO to live. DO in the water varies greatly with stream characteristics, temperature, and time, but a minimal DO level of 5 milligrams per liter (mg/L) is usually required to maintain healthy growth and activity.
- Turbidity is a measure of water clarity, and though Virginia water quality standards do not include guidelines for turbidity. Generally, water begins to appear cloudy when the turbidity is greater than 5 NTU.

### 3.1.1 Fall 2023

RBP physical habitat assessment scores ranged from 131 (Purcell Branch) to 158 (Neabsco Creek and Cow Branch). The scores indicated that two sites exhibited suboptimal habitat, and three sites exhibited optimal habitat for supporting benthic communities.

As shown in Table 1, the physical water quality characteristics of the five sites meet the typical water quality conditions described above.

**Table 1 - Fall 2023 Field Condition and Parameter Results.**

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
<b>RBP Habitat Assessment/ Characterization Score</b>	--	158	157	147	158	131
<b>RBP Habitat Condition Category</b>	--	Optimal	Optimal	Suboptimal	Optimal	Suboptimal
<b>pH</b>	SU	5.64	7.57	7.13	7.47	7.50
<b>Specific Conductance</b>	µS/cm	439	459	529	210	254
<b>Temperature</b>	°C	12.84	13.79	10.58	13.6	14.21
<b>DO</b>	mg/L	12.21	9.91	11.54	11.00	13.34
<b>Turbidity</b>	NTU	1.23	3.14	0.67	0.44	0.02
<b>Water Depth</b>	m	0.24	0.09	1.46	0.15	0.09
<b>Secchi Depth</b>	m	0.24	0.09	1.46	0.15	0.09
<b>Reach Length</b>	m	100	100	100	100	100
<b>Reach Width</b>	m	4.05	5.49	5.49	6.40	6.71
<b>Surface Velocity</b>	m/s	0.05	0.05	0.61	0.32	0.55

*Abbreviations:*

- SU = Standard Unit*
- µS/cm = Microsiemens per Centimeter*
- °C = degrees Celsius*
- mg/L = milligrams per liter*
- NTU = Nephelometric Turbidity Units*
- m = meters*
- m/s = meters per second*

*Prepared by: INT  
 Checked by: PKG*

### 3.1.2 Spring 2024

RBP physical habitat assessment scores ranged from 117 (**Little Bull Run**) to 153 (**Neabsco Creek**). The scores indicated that all sites exhibited optimal or suboptimal habitat for supporting benthic communities.

As shown in Table 2, most of the physical water quality characteristics of the five sites meet the typical water quality conditions described above. The specific conductance at **Dawkins Branch** was slightly above the range for inland fresh waters supporting mixed fisheries, but well within the broader range of typical conductivity for streams.

**Table 2 - Spring 2024 Field Condition and Parameter Results.**

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
<b>RBP Habitat Assessment/ Characterization Score</b>	--	138	137	117	153	132
<b>RBP Habitat Condition Category</b>	--	Suboptimal	Suboptimal	Suboptimal	Optimal	Suboptimal
<b>pH</b>	SU	7.12	8.25	8.01	8.35	8.73
<b>Specific Conductance</b>	µS/cm	378	<b>604</b>	375	188	202
<b>Temperature</b>	°C	14.90	18.47	12.03	16.18	13.89
<b>DO</b>	mg/L	12.55	12.20	13.96	11.65	14.84
<b>Turbidity</b>	NTU	NR	NR	NR	NR	NR
<b>Water Depth</b>	m	0.25	0.09	0.17	0.25	.21
<b>Secchi Depth</b>	m	0.25	0.09	0.17	0.25	0.21
<b>Reach Length</b>	m	100	100	100	100	100
<b>Reach Width</b>	m	3.66	7.16	6.25	5.49	3.96
<b>Surface Velocity</b>	m/s	0.30	0.21	0.20	0.19	0.23

Abbreviations:

NR = Not Reported

°C = degrees Celsius

mg/L = milligrams per liter

Prepared by: INT

Checked by: DBR

### 3.2 Water Quality Laboratory Results

The laboratory analytical reports are provided in Appendix B. As mentioned in the previous section, the following bullets represent typical conditions and provide a general indication of stream health.

- Ammonia is toxic to fish and other types of aquatic life. Ammonia’s toxicity depends on both the temperature and pH of the water, but chronic levels above 3.0 mg/L exceed water quality standards.
- *E. coli* can be used as an indicator of stream impairment from sewage and animal waste. The Virginia Water Quality Standard is 126 most probable number of coliform per 100 milliliters (MPN/100mL).
- Nitrate stimulates plant growth, and excessive plant growth can impact DO levels. Streams in areas with little human impact have less than 0.6 mg/L nitrate.

- Phosphates act as a nutrient for plant growth similar to nitrate. Streams in areas with little human impact have less than 0.1 mg/L. There is no Virginia Water Quality Standard for phosphate. Orthophosphate serves as an indicator of biologically available Phosphorus within streams.
- TKN is the sum of organic nitrogen, ammonia, and ammonium. Though there is no Virginia Water Quality Standard for TKN, it can be used as an indicator for stream impairment.
- There are no Virginia Water Quality standards for total phosphorus or nitrogen. However, total phosphorus levels higher than 0.1 mg/L may stimulate plant growth sufficiently to surpass natural growth rates. Levels in excess of 0.1 mg/L indicate a potential human source such as industrial soaps, sewage, fertilizers, disturbance of soil, animal waste, or industrial effluent.
- TSS, similar to turbidity, is a quantitative measurement of sediment and other particles found in surface water. Though there is no Virginia Water Quality Standard for TSS, it can be used as an indicator for erosion and sedimentation.

### 3.2.1 Fall 2023

As shown in Table 3, the water quality results for the five sites meet the typical water quality conditions described above, with the exception of elevated *E. coli* levels recorded at **Purcell Branch**. Elevated *E. coli* levels are typically associated with sewage and animal waste. The weather station at Fort Belvoir (KDAA) recorded approximately 0.39 inches of precipitation on October 14, and 0.11 inches of precipitation on October 17, which may account for elevated levels within the streams.

**Table 3 - Fall 2023 Water Quality Results.**

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Ammonia as N	mg/L	0.01	0.01	<0.01	<0.01	<0.01
<i>E. coli</i>	MPN/100mL	59.4	86.2	117.8	13.4	<b>160.7</b>
Nitrate+Nitrite	mg/L	0.28	0.04	0.09	0.01	0.11
Orthophosphate as P	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
TKN	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phosphorus	mg/L	0.01	0.02	0.02	0.01	0.02
TSS	mg/L	3.2	3.5	1.0	1.9	3.5

Abbreviations:

< = not detected at the associated reporting limit

mg/L = milligrams per liter

**bold** indicates a result exceeding the VA water quality standards

Prepared by: INT

Checked by: PKG

The laboratory analytical report for the Fall 2023 sampling is provided in Appendix B.

### 3.2.2 Spring 2024

As shown in Table 4, the water quality results for the five sites meet the typical water quality conditions described above, with the exception of elevated *E. coli* levels recorded at **Purcell Branch**.

**Table 4 - Spring 2024 Water Quality Results.**

Parameter	Units	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Ammonia as N	mg/L	0.04	0.04	0.04	0.02	0.02
<i>E. coli</i>	MPN/100mL	54.6	133	108	19.3	<b>411.0</b>
Nitrate+Nitrite	mg/L	0.36	0.04	0.26	0.14	0.40
Orthophosphate as P	mg/L	<0.01	0.01	<0.01	<0.01	<0.01
TKN	mg/L	<0.5	0.71	<0.5	<0.5	<0.5
Total Phosphorus	mg/L	<0.01	0.03	0.02	<0.01	<0.01
TSS	mg/L	1.1	76	1.0	5.6	2.0

**Abbreviations:**

< = not detected at the associated reporting limit

mg/L = milligrams per liter

**bold** indicates a result exceeding the VA water quality standards

Prepared by: INT

Checked by: DBR

The laboratory analytical report for the Spring 2024 sampling is provided in Appendix B.

### 3.3 Benthic Macroinvertebrate Results

Terms such as “tolerant” and “intolerant” taxa are used to describe benthic communities in this document without the negative or positive lay connotations of such language. Tolerant taxa are benthic species adapted to survive in a broad range of environmental conditions, whereas intolerant taxa are adapted to more limited range of environmental conditions. The term “impairment” has a negative connotation with its lay usage; in this document, the term is used to describe the nature and composition of a benthic community. The scientific “impairment” conditions are classified into four categories:

- No Impairment** Similar to the reference conditions; the benthic community is of excellent quality.
- Slight Impairment** Sustaining a diverse and abundant benthic community with some intolerant taxa; the benthic community is of good quality.
- Moderate Impairment** Not having a highly diverse and abundant community, but having taxa present in several major groups, generally a few intolerant taxa and one taxon being dominant; the community has been impacted.
- Severe Impairment** Few, if any, benthic invertebrate taxa are present, all tolerant taxa, low diversity, and often one taxon is very abundant; the benthic community has been severely impacted.

WSP’s laboratory sorted and identified the organisms in the benthic macroinvertebrate samples and provided reports dated February 26, 2024 for the Fall 2023 sampling event, and July 17, 2024 for the Spring 2024 sampling event (Appendix C).

### 3.3.1 Fall 2023

A total of 88 taxa were identified from the fall samples. Among the five sites, taxa richness ranged from 31 to 41, while abundance ranged from 194 to 216. EPT index ranged from 1 to 10 among the sites.

The percentage of the dominant taxon ranged from 14.08 to 40.80%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 23.3 to 51.24%.

The HBI ranged from 5.35 to 6.54 for the sites, with a corresponding HBI Category score of “Fairly Poor” and “Good”. The PMA ranged from 36.50 to 53.09 for the sites, indicating levels of impactedness ranging from “Slightly Impacted” at Little Bull Run, Neabsco Creek, and Purcell Branch, to “Moderately Impacted” at Cow Branch and Dawkins Branch.

Results from the calculation of the VSCI for the individual sample sites ranged from 48.40 (Cow Branch) to 70.21 (Purcell Branch).

**Table 5 - Fall 2023 Benthic Macroinvertebrate Results.**

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	31	34	41	41	37
Abundance	201	200	206	194	216
EPT Index	6	1	5	7	10
EPT/EPT+ Chironomidae	0.80	0.04	0.25	0.47	0.86
Percent Dominant Taxon	40.80	27.00	14.08	14.95	25.46
Percent Chironomidae	15.92	11.00	35.44	28.87	10.65
BI	6.54	6.15	5.49	5.78	5.35
BI Category	Fairly Poor	Fair	Good	Fair	Good
PMA	42.41	36.50	53.11	53.09	50.09
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	48.40	51.11	57.51	56.82	70.21
VSCI Category	Stress	Stress	Stress	Stress	Good

Abbreviations:

BI = Biotic Index

EPT = Ephemeroptera, Plecoptera, and Trichoptera

PMA = percent model affinity

VSCI = Virginia Stream Condition Index

Prepared by: INT

Checked by: PKG

### 3.3.2 Spring 2024

A total of 78 taxa were identified from the spring samples. Among the five sites, taxa richness ranged from 18 to 40, while abundance ranged from 200 to 216. EPT taxa ranged from 1 to 8 among the sites.

The percentage of the top taxa ranged from 17.06 to 72.69%. Percentage of the top two taxa combined, which is a VSCI metric, ranged from 27.36 to 77.78%.



The HBI ranged from 5.52 to 6.96 for the sites, with corresponding HBI Category scores of “Fairly Poor” and “Fair”. The PMA ranged from 26.20 to 48.74 for the sites, indicating levels of impactedness ranging from “Severely Impacted” at **Cow Branch**, to “Moderately Impacted” at **Purcell Branch**.

Results from the calculation of the VSCI for the individual sample sites ranged from 29.88 (**Cow Branch**) to 51.25 (**Purcell Branch**).

**Table 6 - Spring 2024 Benthic Macroinvertebrate Results.**

Metric	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	18	27	38	30	40
Abundance	200	216	212	216	211
EPT Index	1	1	5	6	8
EPT/EPT+ Chironomidae	0.01	0.06	0.13	0.07	0.13
Percent Dominant Taxon	33.00	72.69	17.45	19.44	17.06
Percent Chironomidae	67.50	7.41	60.85	86.57	63.03
BI	6.26	6.96	6.33	5.56	5.52
BI Category	Fair	Fairly Poor	Fair	Fair	Fair
PMA	26.50	26.20	47.92	33.43	48.74
PMA Category	Severely impacted	Severely Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
VSCI	29.88	37.14	46.93	42.49	51.25
VSCI Category	Severe Stress	Severe Stress	Stress	Severe Stress	Stress

Abbreviations:

BI = Biotic Index

EPT = Ephemeroptera, Plecoptera, and Trichoptera

PMA = percent model affinity

VSCI = Virginia Stream Condition Index

Prepared by: INT

Checked by: DBR

### 3.4 Comparison to Baseline Results

In the assessment of measured field and laboratory water quality parameters, the Fall 2023 and Spring 2024 sampling results have shown slight improvements compared to the Fall and Spring baseline sampling results from 2016, are within or slightly above the normal ranges, and are below Virginia’s Water Quality Standards, except for *E. coli* at **Purcell Branch** during Fall 2023 and Spring 2024.

The habitat and benthic community results among the events are summarized below in Table 7. Steady increases in metrics assessing the health of the benthos at each site appear to remain constant or improve though out the years except for HBI and PMA metrics. In Table 9 improvements from baseline are shown in green, no change from baseline are shown in blue, and regression from baseline are shown in red.

**Table 7 - Habitat and Benthic Community Comparison Summary**

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
<b>RBP Habitat Score</b>	Baseline (Spring)	94	126	120	134	103
	Baseline (Fall)	104	147	110	136	87
	2017 (Spring)	98	134	94	123	108
	2017 (Fall)	101	116	98	114	80
	2018 (Spring)	93	126	103	113	106
	2018 (Fall)*	106	114	126	129	105
	2019 (Spring)*	113	99	124	117	103
	2019 (Fall)	132	134	120	136	117
	2020 (Spring)	107	106	102	127	89
	2020 (Fall)	109	120	142	121	114
	2021 (Spring)	122	103	138	114	117
	2021 (Fall)	129	117	128	149	106
	2022 (Spring)	167	163	145	174	147
	2022 (Fall)	144	144	122	153	101
	2023 (Spring)	152	136	137	169	123
2023 (Fall)	158	157	147	158	131	
2024 (Spring)	138	137	117	153	132	
<b>RBP Habitat Category</b>	Baseline (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	Baseline (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
	2017 (Spring)	Marginal	Suboptimal	Marginal	Suboptimal	Suboptimal
	2017 (Fall)	Suboptimal	Suboptimal	Marginal	Suboptimal	Marginal
	2018 (Spring)	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2018 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2019 (Spring)	Suboptimal	Marginal	Suboptimal	Suboptimal	Suboptimal
	2019 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2020 (Spring)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal
	2020 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2021 (Spring)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2021 (Fall)	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal
	2022 (Spring)	Optimal	Optimal	Suboptimal	Optimal	Suboptimal
	2022 (Fall)	Suboptimal	Suboptimal	Suboptimal	Optimal	Suboptimal
	2023 (Spring)	Optimal	Suboptimal	Suboptimal	Optimal	Suboptimal
2023 (Fall)	Optimal	Optimal	Suboptimal	Optimal	Suboptimal	
2024 (Spring)	Suboptimal	Suboptimal	Suboptimal	Optimal	Suboptimal	
<b>BI Category</b>	Baseline (Spring)	Fair	Fair	Good	Good	Good
	Baseline (Fall)	Good	Fair	Fair	Fair	Fair
	2017 (Spring)	Fairly Poor	Good	Fair	Fair	Good
	2017 (Fall)	Fair	Fair	Fair	Fair	Good
	2018 (Spring)	Fair	Fairly Poor	Fair	Fairly Poor	Good
	2018 (Fall)*	Fair	Good	Good	Good	Good
	2019 (Spring)*	Fair	Good	Fair	Fair	Good
	2019 (Fall)	Fairly Poor	Fairly Poor	Fair	Fair	Fair
	2020 (Spring)	Fairly Poor	Good	Good	Fair	Good
	2020 (Fall)	Fairly Poor	Fair	Fair	Fair	Fair
	2021 (Spring)	Good	Fair	Fair	Fair	Good
	2021 (Fall)	Fair	Fairly Poor	Fair	Good	Fair
	2022 (Spring)**	Good	Fairly Poor	Fairly Poor	Good	Good
	2022 (Fall)**	Fair	Fairly Poor	Fair	Fair	Good
	2023 (Spring)	Fair	Fairly Poor	Fair	Fair	Fair
2023 (Fall)	Fairly Poor	Fair	Good	Fair	Good	
2024 (Spring)	Fair	Fairly Poor	Fair	Fair	Fair	
<b>PMA Category</b>	Baseline (Spring)	Severely Impacted	Moderately Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
	Baseline (Fall)	Slightly Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
	2017 (Spring)	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted	Moderately Impacted
	2017 (Fall)	Moderately Impacted	Slightly Impacted	Non-Impacted	Slightly Impacted	Slightly Impacted
	2018 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Moderately Impacted
	2018 (Fall)*	Moderately Impacted	Moderately Impacted	Slightly Impacted	Moderately Impacted	Slightly Impacted
	2019 (Spring)*	Moderately Impacted	Moderately Impacted	Moderately Impacted	Slightly Impacted	Non-impacted
	2019 (Fall)	Moderately Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
	2020 (Spring)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
	2020 (Fall)	Severely Impacted	Slightly Impacted	Non-impacted	Slightly Impacted	Slightly Impacted
	2021 (Spring)	Severely Impacted	Moderately Impacted	Moderately Impacted	Moderately Impacted	Moderately Impacted
	2021 (Fall)	Severely Impacted	Non-Impacted	Non-Impacted	Moderately Impacted	Moderately Impacted
	2022 (Spring)	Severely Impacted	Moderately Impacted	Non-Impacted	Slightly Impacted	Moderately Impacted
	2022 (Fall)	Severely Impacted	Severely Impacted	Slightly Impacted	Severely Impacted	Moderately Impacted
	2023 (Spring)	Moderately Impacted	Moderately Impacted	Non-impacted	Moderately Impacted	Moderately Impacted
	2023 (Fall)	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
	2024 (Spring)	Severely Impacted	Severely Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
<b>VSCI Score</b>	Baseline (Spring)	27.85	35.67	39.29	32.96	46.40
	Baseline (Fall)	36.54	49.42	56.59	39.44	57.34
	2017 (Spring)	37.17	39.85	38.66	47.03	41.71
	2017 (Fall)	41.78	49.71	61.83	58.67	63.60
	2018 (Spring)	40.61	48.25	52.47	42.94	48.40
	2018 (Fall)*	49.91	52.64	74.17	60.74	64.67
	2019 (Spring)*	37.33	45.35	49.27	44.68	47.14
	2019 (Fall)	42.95	62.99	67.99	56.10	60.76
	2020 (Spring)	34.52	41.42	42.77	47.03	47.53
	2020 (Fall)	35.57	48.77	62.62	57.12	55.25
	2021 (Spring)	34.71	45.91	45.24	38.48	41.08
	2021 (Fall)	51.26	54.70	70.52	61.30	60.12
	2022 (Spring)**	30.27	44.88	53.96	50.11	48.13
	2022 (Fall)**	57.02	49.64	68.71	54.11	64.54
	2023 (Spring)	44.23	40.19	50.65	43.19	44.81
	2023 (Fall)	48.40	51.11	57.51	56.82	70.21
	2024 (Spring)	29.88	37.14	46.93	42.49	51.25
<b>VSCI Category</b>	Baseline (Spring)	Severe Stress	Severe Stress	Severe Stress	Severe Stress	Stress
	Baseline (Fall)	Severe Stress	Stress	Stress	Severe Stress	Stress
	2017 (Spring)	Severe Stress	Severe Stress	Severe Stress	Stress	Severe Stress
	2017 (Fall)	Severe Stress	Stress	Good	Stress	Good
	2018 (Spring)	Severe Stress	Stress	Stress	Stress	Stress
	2018 (Fall)*	Stress	Stress	Excellent	Good	Good
	2019 (Spring)*	Severe Stress	Stress	Stress	Stress	Stress
	2019 (Fall)	Stress	Good	Good	Stress	Good
	2020 (Spring)	Severe Stress	Severe Stress	Stress	Stress	Stress
	2020 (Fall)	Severe Stress	Stress	Good	Stress	Stress
	2021 (Spring)	Severe Stress	Stress	Stress	Severe Stress	Stress
	2021 (Fall)	Stress	Stress	Good	Good	Good

Parameter	Event	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
	2022 (Spring)**	Severe Stress	Stress	Stress	Stress	Stress
	2022 (Fall)**	Stress	Stress	Good	Stress	Good
	2023 (Spring)	Stress	Severe Stress	Stress	Stress	Stress
	2023 (Fall)	Stress	Stress	Stress	Stress	Good
	2024 (Spring)	Severe Stress	Severe Stress	Stress	Severe Stress	Stress

\*Previously reported VSCI Scores for Fall 2018 and Spring 2019 have shifted slightly due to a calculation error.

Prepared by: INT  
 Checked by: DBR

\*\*Previously reported HBI and VSCI Scores for Spring 2022 and Fall 2022 have been revised due to a calculation error.

Note: Beginning in 2022, the HBI calculation has been revised to the new method (Method 2) that divides (Individual Abundance \* Tolerance Value) by Total Abundance of taxa within the sample that have a Tolerance Value, *i.e.*, excludes abundances of those taxa without a Tolerance Value.

Improvements from baseline are shown in green, no change from baseline are shown in blue, and regression from baseline are shown in red.

## 4.0 Summary and Conclusions

The following sections present a summary of the Fall 2023 and Spring 2024 sampling events and compare the results with the previous sampling events conducted in 2016 through 2023. This section also provides conclusions for the current report period. It should be noted that there are biological changes associated with seasonality, with taxa emerging in the spring, and transitional life stages (e.g., metamorphosis) during and between events that may account for benthic community dynamics.

### 4.1 Summary

#### 4.1.1 Fall 2023

Measured field and laboratory water quality parameters are generally within the normal ranges for shallow, cool, turbulent, piedmont Virginia streams, and generally meet Virginia's Water Quality Standards, as outlined in Section 3, except for *E. coli* at Purcell Branch. RBP physical habitat assessment scores indicated that Little Bull Run and Purcell Branch exhibited suboptimal habitat, and Cow Branch, Dawkins Branch, and Neabsco Creek exhibited optimal habitat for supporting benthic communities.

#### 4.1.2 Spring 2024

Measured field and laboratory water quality parameters are generally within the normal ranges for shallow, cool, turbulent, piedmont Virginia streams, and generally meet Virginia's Water Quality Standards, as outlined in Section 3, except for *E. coli* at Purcell Branch. RBP physical habitat assessment scores indicated that Cow Branch, Dawkins Branch, Little Bull Run and Purcell Branch exhibited suboptimal habitat, and Neabsco Creek exhibited optimal habitat for supporting benthic communities.

### 4.2 Conclusions

The measured field and laboratory water quality parameters from the Fall 2023 and Spring 2024 sampling results are generally comparable to the baseline sampling results, are within the normal ranges, and are below Virginia's Water Quality Standards except for elevated *E. coli* during Fall 2023 and Spring 2024 for Purcell Branch. Monitoring efforts will be targeted to avoid collection periods following storm events to characterize the benthos and ambient water quality conditions.

Biological metrics, habitat assessments, and evaluations of the benthic macroinvertebrate communities at each site have indicated a marginal level of improvement compared to baseline conditions, though a regression from improvement in recent years at several sites. Seasonal fluctuation in benthic macroinvertebrate assessments has still shown an upward trend for most sites.

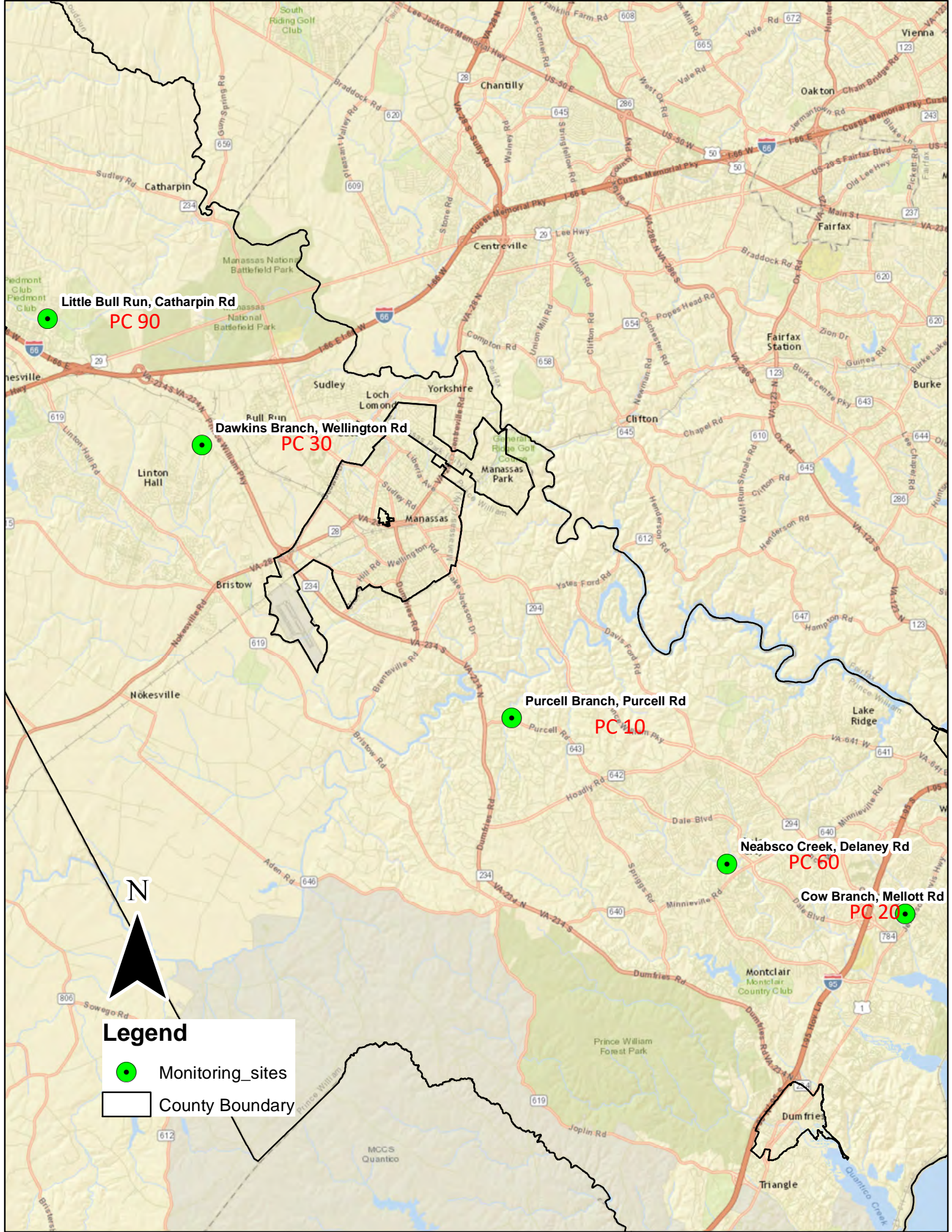
This seasonal trend allows for clear distinctions from baseline levels in Fall sampling, while Spring sampling only shows slight improvement in benthic health. Based on the Fall 2023 and Spring 2024 sampling results, stream conditions have shown slight improvement from baseline conditions, except for PMA and HBI which shows regression from baseline. The results of this report indicate that the health of these representative monitoring sites from across Prince William County are remaining stable.

## 5.0 References

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<http://law.lis.virginia.gov/admincode/title9/agency25/chapter260/section50/>. Accessed July 12, 2017.

## FIGURES





Little Bull Run, Catharpin Rd  
PC 90

Dawkins Branch, Wellington Rd  
PC 30

Purcell Branch, Purcell Rd  
PC 10

Neabsco Creek, Delaney Rd  
PC 60

Cow Branch, Mellott Rd  
PC 20

**Legend**

- Monitoring\_sites
- County Boundary



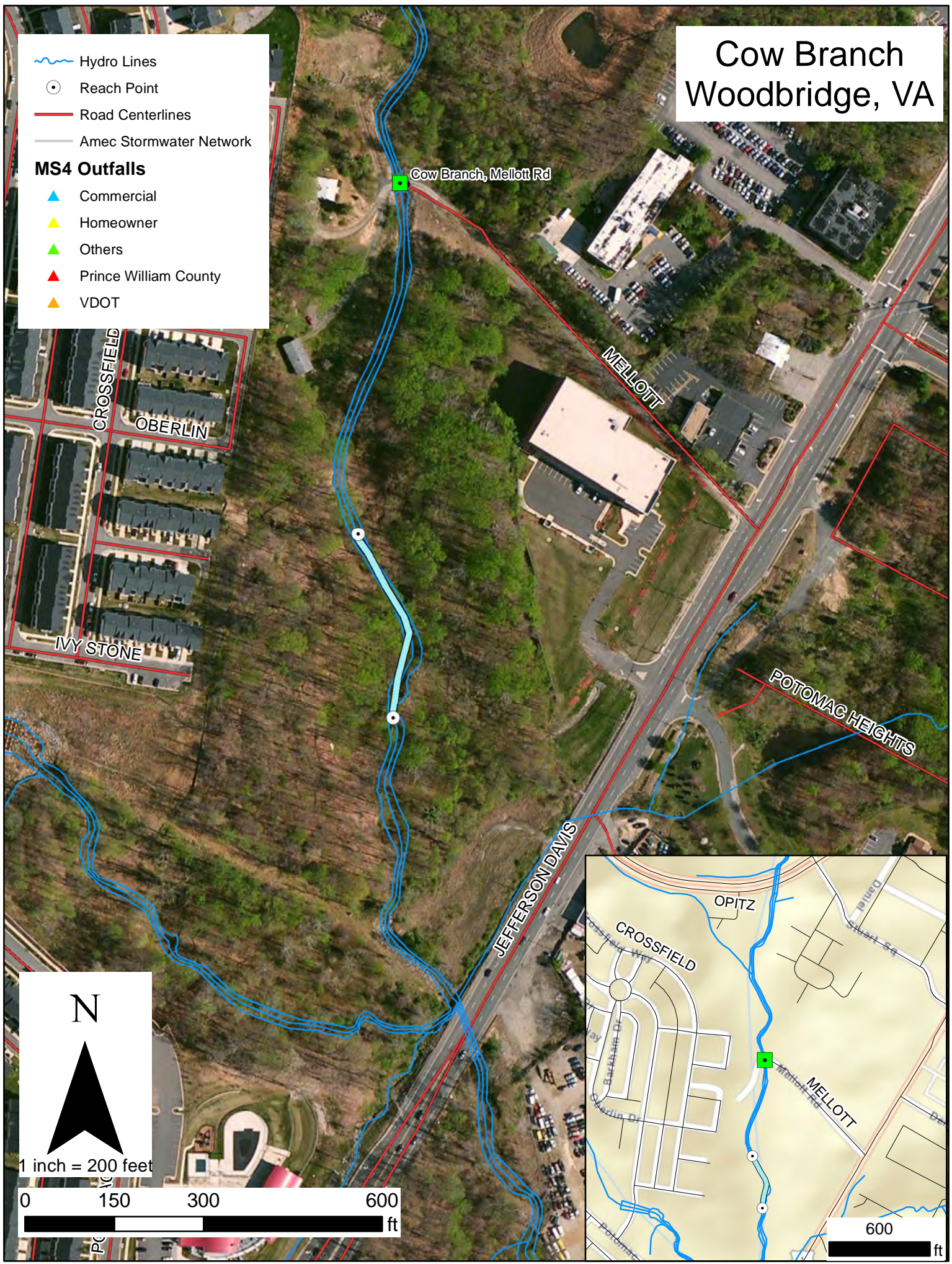


# Cow Branch Woodbridge, VA

- Hydro Lines
- Reach Point
- Road Centerlines
- Amec Stormwater Network

**MS4 Outfalls**

- Commercial
- Homeowner
- Others
- Prince William County
- VDOT



Cow Branch, Mellott Rd

CROSSFIELD

OBERLIN

IVY STONE

MELLOTT

POTOMAC HEIGHTS

JEFFERSON DAVIS

OPITZ

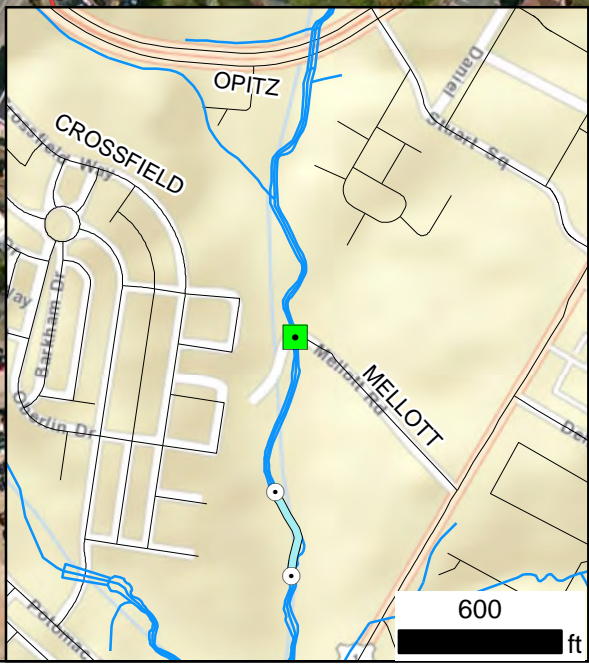
CROSSFIELD

MELLOTT

N

1 inch = 200 feet

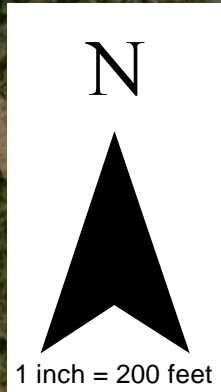
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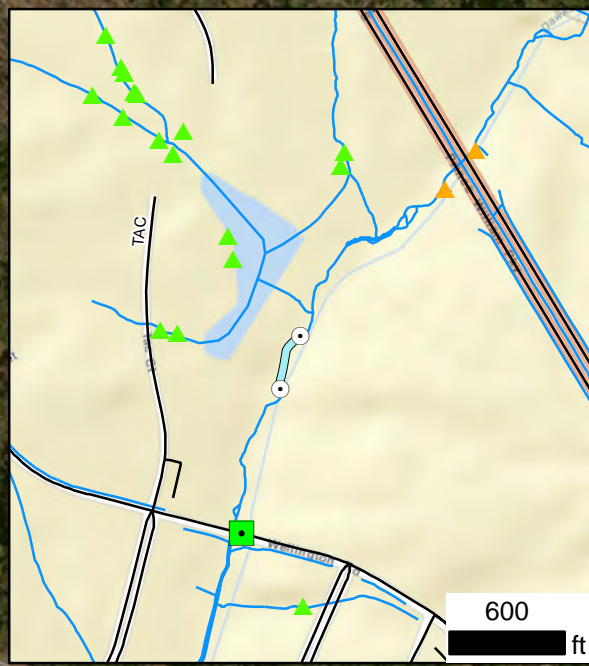
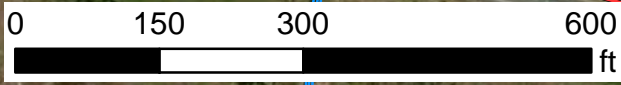
600 ft



# Dawkins Branch Manassas, VA



- Reach Point
  - ~ Hydro Lines
  - Amec Stormwater Network
  - Road Centerlines
- MS4 Outfalls**
- ▲ Commercial
  - ▲ Homeowner
  - ▲ Others
  - ▲ Prince William County
  - ▲ VDOT



WELLINGTON

TAC

TAC



# Little Bull Run Gainesville, VA



N

1 inch = 200 feet

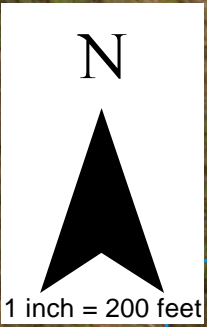
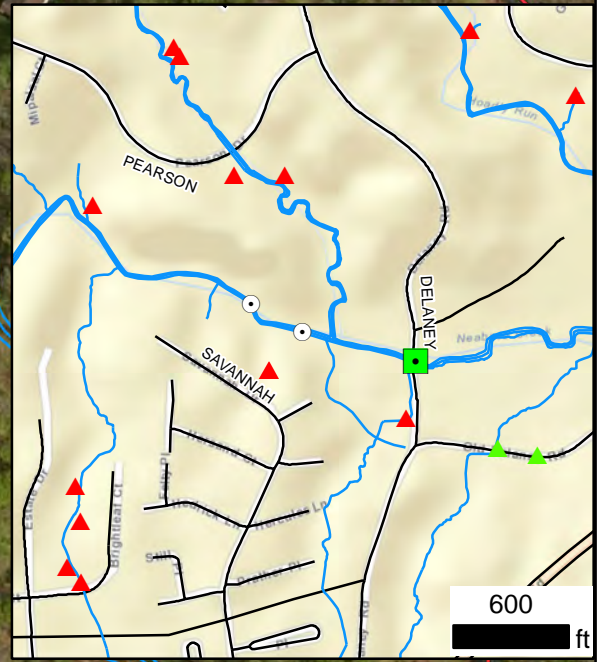
- Reach Point
- ~ Hydro Lines
- Amec Stormwater Network
- Road Centerlines
- MS4 Outfalls**
- ▲ Commercial
- ▲ Homeowner
- ▲ Others
- ▲ Prince William County
- ▲ VDOT

600  
ft

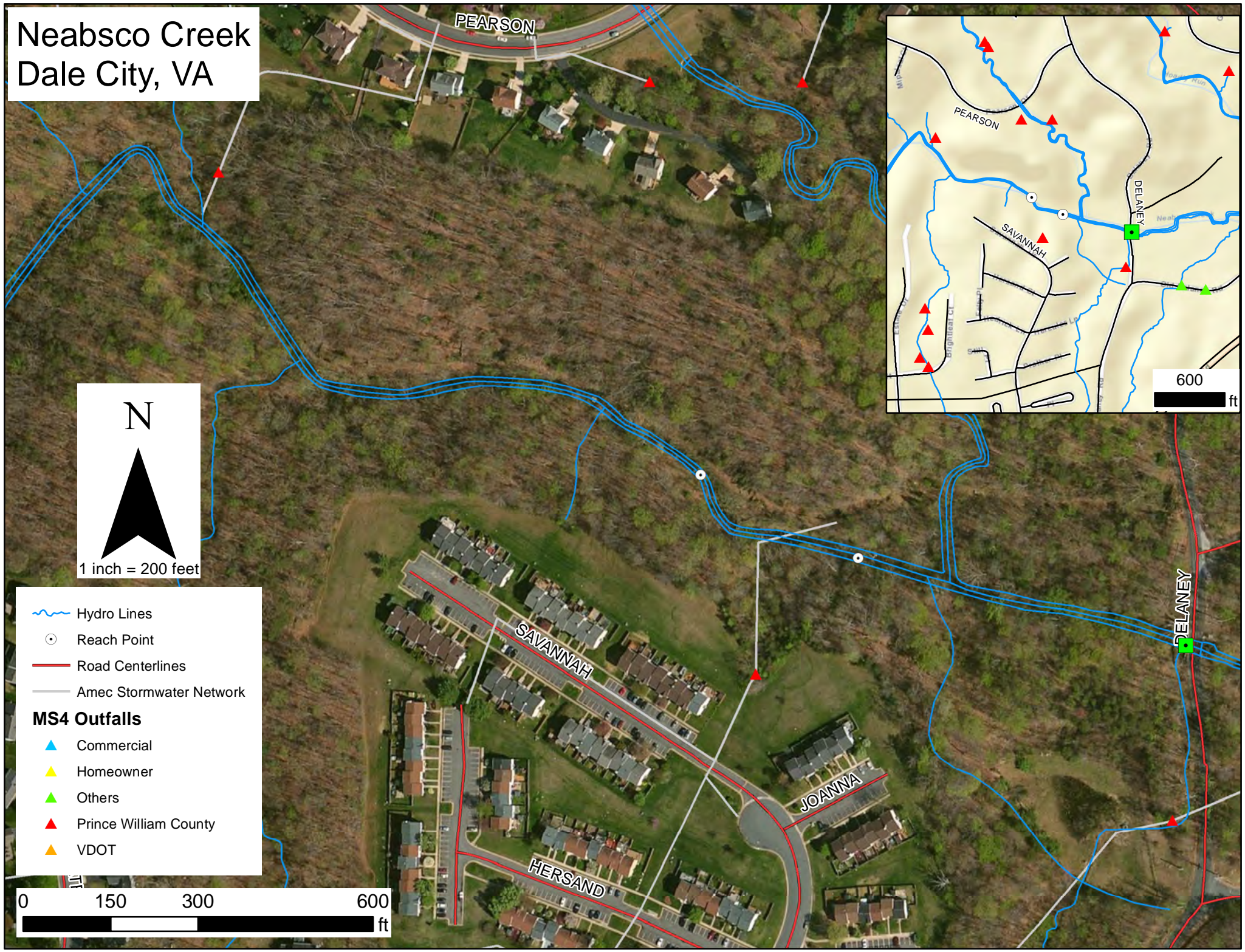
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ft



# Neabsco Creek Dale City, VA

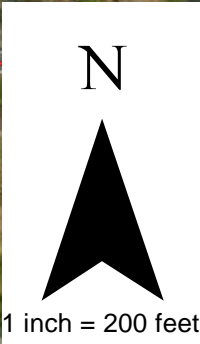


- Hydro Lines
  - Reach Point
  - Road Centerlines
  - Amec Stormwater Network
- MS4 Outfalls**
- Commercial
  - Homeowner
  - Others
  - Prince William County
  - VDOT



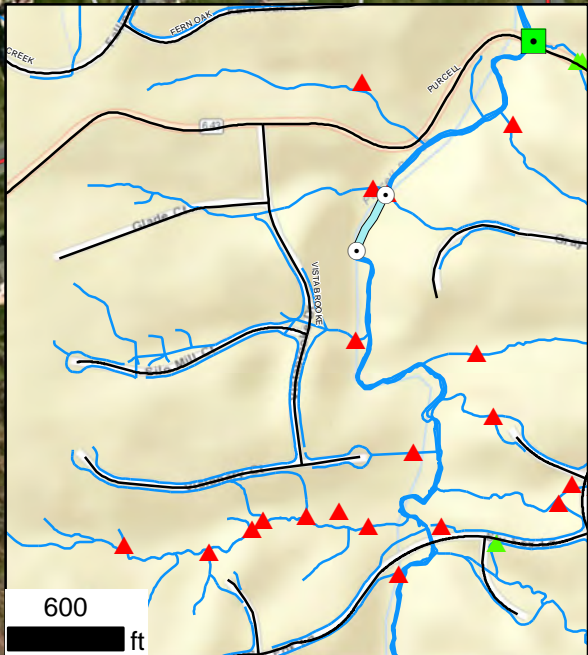


# Purcell Branch Manassas, VA



PURCELL

VISTA BROOKE



- Reach Point
  - Hydro Lines
  - Amec Stormwater Network
  - Road Centerlines
- MS4 Outfalls**
- ▲ Commercial
  - ▲ Homeowner
  - ▲ Others
  - ▲ Prince William County
  - ▲ VDOT





**APPENDIX A**  
**SITE DATA SHEETS**



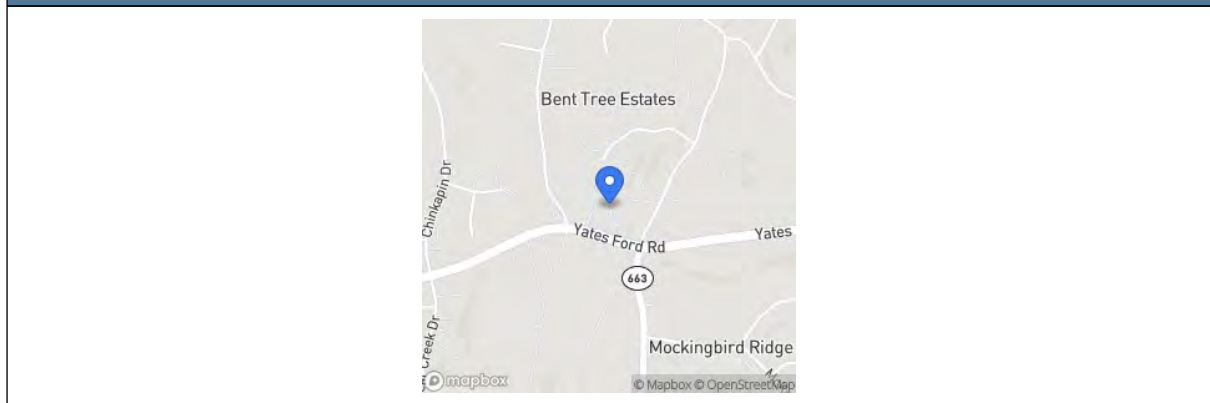
Fall 2023

**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Cow Branch
<b>Site ID</b>	PC20
<b>Site Address</b>	
<b>Date</b>	10/26/23
<b>Time</b>	10:08
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	C Davis R Smith

<b>Stream Name</b>	Cow Branch
<b>Location</b>	Woodbridge
<b>River Basin</b>	Potomac
<b>Investigators</b>	C Davis R Smith
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Clear

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Shrubs
INSTREAM FEATURES	
Est. Stream Width (ft)	13.3
Est. Stream Depth (ft)	0.8
Surface Velocity (ft/sec at thalweg)	0.15
Canopy Cover	Shaded
High Water Mark (ft)	1.7
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	33
Run (%)	33
Pool (%)	33
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	30
WATER QUALITY	
Temperature °C	12.84
Specific Conductance µS/cm	0.439
Dissolved Oxygen mg/L	12.21
pH	5.64
Turbidity NTU	1.23
WQ Instrument Used	YSI 556 MPS
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input checked="" type="checkbox"/> Sheen <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	0.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	10.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	55.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	13.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	20.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	2.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	0.0

**Parameters to be evaluated in sampling reach**

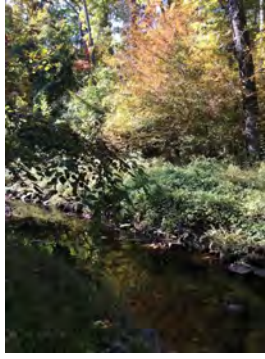
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	14
Embeddedness	17
Velocity / Depth Regime	10
Sediment Deposition	17
Channel Flow Status	16

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	13
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	9
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	10

## Field Photography

### Image 1



### Caption for Image 1

Downstream at downstream pt

### Image 2



### Caption for Image 2

Upstream at downstream pt

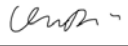
Submit

**Additional Notes**

Add any and all additional notes

5in crayfish

**Tablet Form Completed By:**

<b>Name</b>	C Davis
<b>Initials</b>	CCD
<b>Signature</b>	
<b>Date/Time</b>	10/26/2023 12:05

**Field Form Reviewer Information:**

<b>Primary Reviewer Name</b> List name of primary form reviewer (e.g., FOL, Tech Lead, Base Lead)	<b>Primary Reviewer Email</b> List email of primary form reviewer
Ilana Ton	Ilana.ton@wsp.com

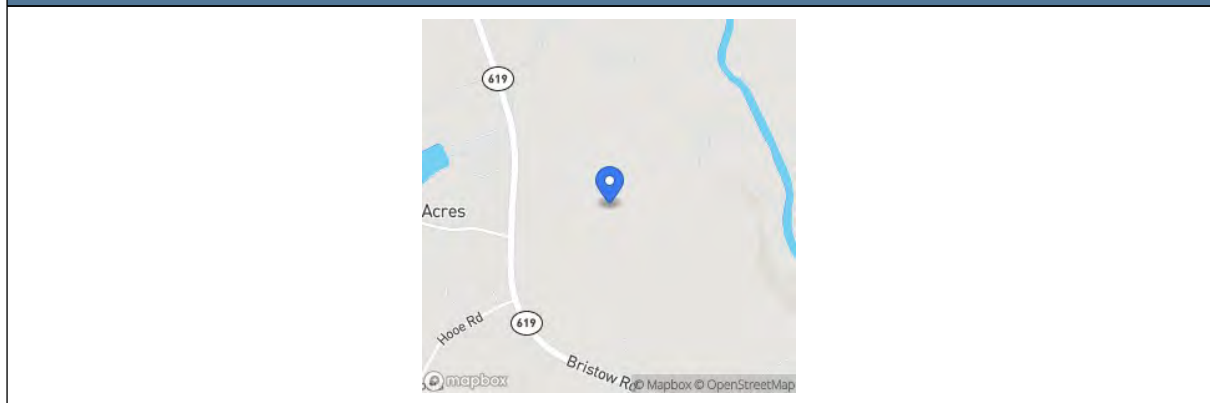


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Dawkins Branch
<b>Site ID</b>	PC30
<b>Site Address</b>	
<b>Date</b>	10/25/23
<b>Time</b>	15:38
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton C Davis

<b>Stream Name</b>	Dawkins Branch
<b>Location</b>	Manassas
<b>River Basin</b>	Potomac
<b>Investigators</b>	I Ton C Davis
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Herbaceous
INSTREAM FEATURES	
Est. Stream Width (ft)	18.0
Est. Stream Depth (ft)	0.3
Surface Velocity (ft/sec at thalweg)	0.17
Canopy Cover	
High Water Mark (ft)	1.3
Channelized	<input type="radio"/> Yes <input type="radio"/> No
Dam Present	<input type="radio"/> Yes <input type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	35
Run (%)	30
Pool (%)	35
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	100
WATER QUALITY	
Temperature °C	13.79
Specific Conductance µS/cm	0.459
Dissolved Oxygen mg/L	9.91
pH	7.57
Turbidity NTU	3.14
WQ Instrument Used	YSI
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input checked="" type="checkbox"/> Sheen <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	10.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	30.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	45.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	5.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	5.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	2.5
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	2.5

**Parameters to be evaluated in sampling reach**

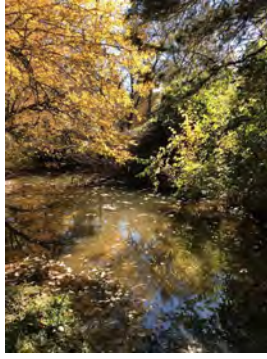
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	18
Embeddedness	16
Velocity / Depth Regime	10
Sediment Deposition	16
Channel Flow Status	18

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	7
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	10
Vegetative Protection (RIGHT BANK)	10
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	10

## Field Photography

### Image 1



### Caption for Image 1

Downstream site looking downstream

### Image 2



### Caption for Image 2

Downstream site looking upstream

### Image 3



### Caption for Image 3

Upstream site looking upstream

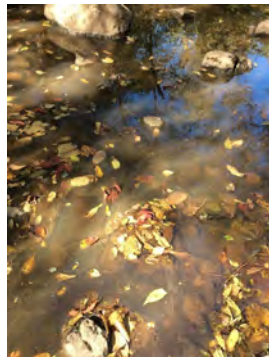
**Image 4**



**Caption for Image 4**

Upstream site looking downstream

**Image 5**



**Caption for Image 5**

Dull sheen on surface

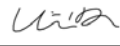
**Submit**

**Additional Notes**

Add any and all additional notes

Saw turtle.

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	10/25/2023 15:37

**Field Form Reviewer Information:**

<b>Primary Reviewer Name</b> List name of primary form reviewer (e.g., FOL, Tech Lead, Base Lead)	<b>Primary Reviewer Email</b> List email of primary form reviewer
Ilana Ton	Ilana.ton@wsp.com



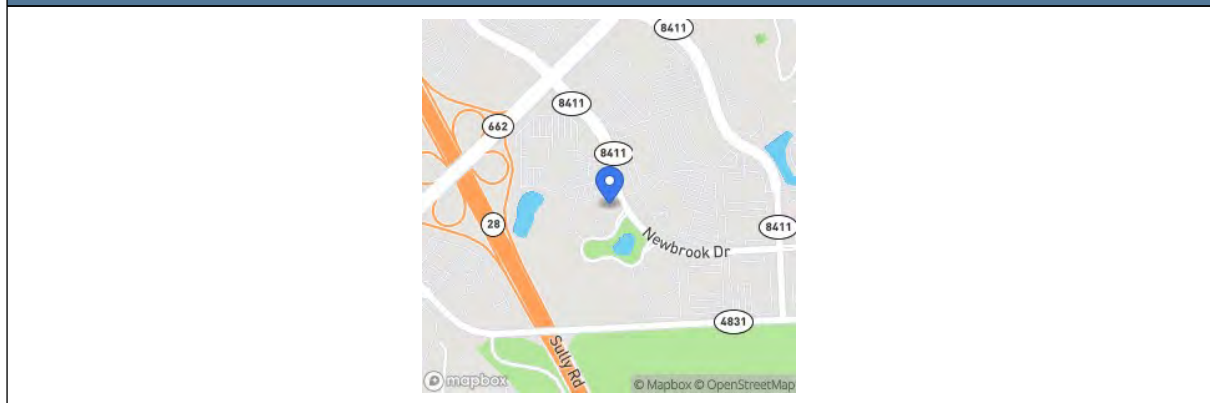


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Little Bull Run
<b>Site ID</b>	PC90
<b>Site Address</b>	
<b>Date</b>	10/25/23
<b>Time</b>	12:26
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	C Davis I Ton

<b>Stream Name</b>	Little Bull Run
<b>Location</b>	Gainesville
<b>River Basin</b>	Potomac
<b>Investigators</b>	C Davis I Ton
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	18.0
Est. Stream Depth (ft)	4.8
Surface Velocity (ft/sec at thalweg)	0.87
Canopy Cover	
High Water Mark (ft)	2.0
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	25
Run (%)	35
Pool (%)	40
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	90
WATER QUALITY	
Temperature °C	10.58
Specific Conductance µS/cm	0.529
Dissolved Oxygen mg/L	11.54
pH	7.13
Turbidity NTU	0.67
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	5.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	5.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	25.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	30.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	15.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	5.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	5.0

**Parameters to be evaluated in sampling reach**

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	12
Embeddedness	17
Velocity / Depth Regime	8
Sediment Deposition	18
Channel Flow Status	18

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	14
Frequency of Riffles (or Bends)	6
Bank Stability (LEFT BANK)	8
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	10

**Field Photography**

**Image 1**



**Caption for Image 1**

Downstream site looking upstream

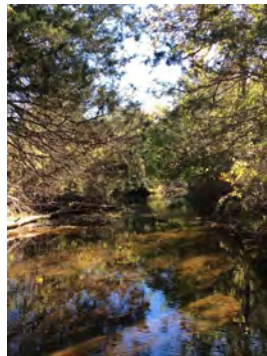
**Image 2**



**Caption for Image 2**

Downstream site looking downstream

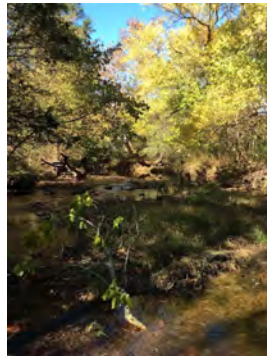
**Image 3**



**Caption for Image 3**

Upstream site looking downstream

**Image 4**



**Caption for Image 4**

Upstream site looking upstream


**Submit**

**Additional Notes**

Add any and all additional notes

Bacterial sheen. Saw lantern fly.

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	10/25/2023 12:24

**Field Form Reviewer Information:**

<b>Primary Reviewer Name</b> List name of primary form reviewer (e.g., FOL, Tech Lead, Base Lead)	<b>Primary Reviewer Email</b> List email of primary form reviewer
Ilana Ton	Ilana.ton@wsp.com



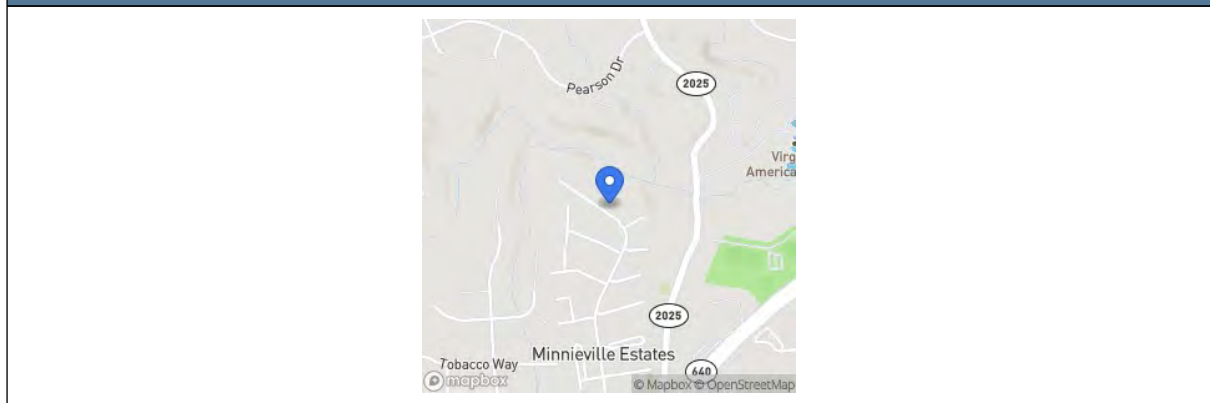


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Neabsco Creek
<b>Site ID</b>	PC60
<b>Site Address</b>	
<b>Date</b>	10/27/23
<b>Time</b>	13:09
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	A Allie I Ton

<b>Stream Name</b>	Neabsco Creek
<b>Location</b>	Dale City
<b>River Basin</b>	Potomac
<b>Investigators</b>	A Allie I Ton
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	21.0
Est. Stream Depth (ft)	0.5
Surface Velocity (ft/sec at thalweg)	1.05
Canopy Cover	Partly open
High Water Mark (ft)	0.8
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	60
Run (%)	10
Pool (%)	30
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	5
WATER QUALITY	
Temperature °C	13.6
Specific Conductance µS/cm	.210
Dissolved Oxygen mg/L	11
pH	7.47
Turbidity NTU	0.44
WQ Instrument Used	YSI
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	20.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	25.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	10.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	10.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	20.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	2.5
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	2.5

**Parameters to be evaluated in sampling reach**

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	18
Embeddedness	15
Velocity / Depth Regime	13
Sediment Deposition	15
Channel Flow Status	18

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	13
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	8
Vegetative Protection (RIGHT BANK)	8
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	9

**Field Photography**

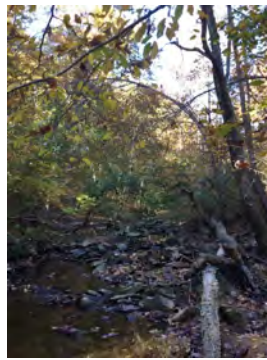
**Image 1**



**Caption for Image 1**

Downstream site looking downstream

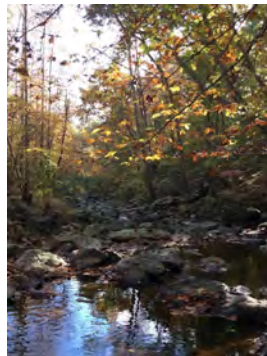
**Image 2**



**Caption for Image 2**

Downstream site looking upstream

**Image 3**



**Caption for Image 3**

Upstream site looking downstream

**Image 4**




**Caption for Image 4**

Upstream site looking upstream

Submit

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	10/27/2023 13:10

**Field Form Reviewer Information:**

<b>Primary Reviewer Name</b> List name of primary form reviewer (e.g., FOL, Tech Lead, Base Lead)	<b>Primary Reviewer Email</b> List email of primary form reviewer
Ilana Ton	Ilana.ton@wsp.com

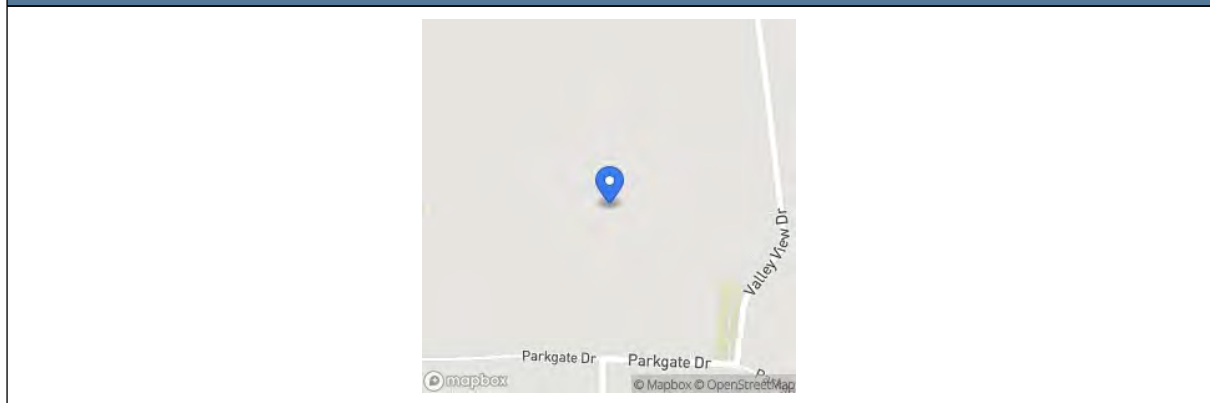


**Biological Monitoring Form**

<b>Project Name</b>	PWC biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Purcell Branch
<b>Site ID</b>	PC10
<b>Site Address</b>	
<b>Date</b>	10/26/23
<b>Time</b>	13:42
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	Rob and Christina

<b>Stream Name</b>	Purcell Branch
<b>Location</b>	Manassas
<b>River Basin</b>	Potomac
<b>Investigators</b>	Rob and Christina
<b>Reason for Survey</b>	Biomonitoring
<b>Weather Conditions</b>	Clear / Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	22.0
Est. Stream Depth (ft)	0.3
Surface Velocity (ft/sec at thalweg)	0.18
Canopy Cover	Shaded
High Water Mark (ft)	1.2
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	30
Run (%)	20
Pool (%)	50
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	20
WATER QUALITY	
Temperature °C	14.21
Specific Conductance µS/cm	0.254
Dissolved Oxygen mg/L	13.34
pH	7.5
Turbidity NTU	0.02
WQ Instrument Used	YSI 556 MPS
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	50.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	20.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	10.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	5.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	15.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	0.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	0.0

**Parameters to be evaluated in sampling reach**

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	14
Embeddedness	15
Velocity / Depth Regime	10
Sediment Deposition	15
Channel Flow Status	11


**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	7
Bank Stability (LEFT BANK)	5
Bank Stability (RIGHT BANK)	6
Vegetative Protection (LEFT BANK)	5
Vegetative Protection (RIGHT BANK)	7
Riparian Vegetative Zone Width (LEFT BANK)	10
Riparian Vegetative Zone Width (RIGHT BANK)	10



Submit

**Tablet Form Completed By:**

<b>Name</b>	Christina Davis
<b>Initials</b>	CCD
<b>Signature</b>	
<b>Date/Time</b>	10/26/2023 15:40

**Field Form Reviewer Information:**

<b>Primary Reviewer Name</b> List name of primary form reviewer (e.g., FOL, Tech Lead, Base Lead)	<b>Primary Reviewer Email</b> List email of primary form reviewer
Ilana Ton	Ilana.ton@wsp.com

Spring 2024

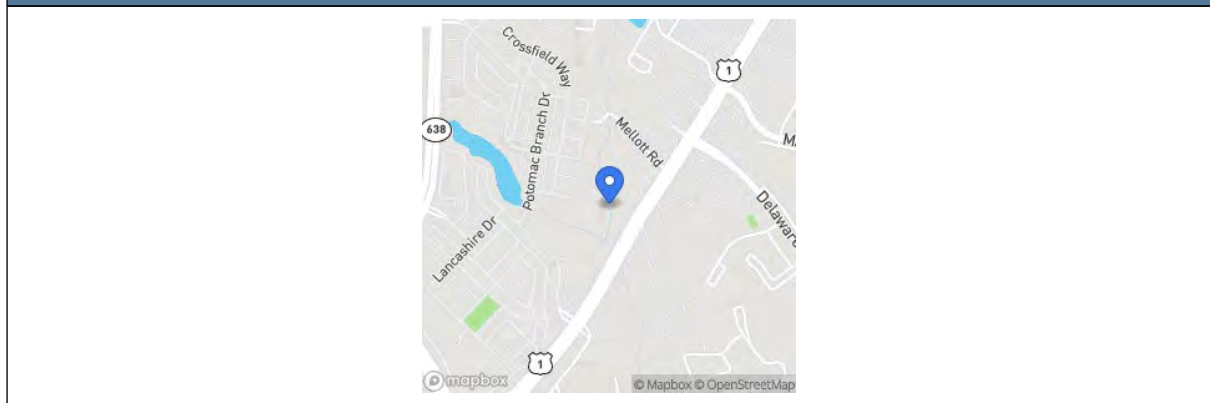


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Cow Branch
<b>Site ID</b>	PC-20
<b>Site Address</b>	
<b>Date</b>	04/24/24
<b>Time</b>	10:05
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton D Robinson

<b>Stream Name</b>	Cow Branch
<b>Location</b>	Woodbridge
<b>River Basin</b>	Potomac
<b>Investigators</b>	I Ton D Robinson
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Shrubs
INSTREAM FEATURES	
Est. Stream Width (ft)	12.0
Est. Stream Depth (ft)	0.83
Surface Velocity (ft/sec at thalweg)	0.08
Canopy Cover	Partly shaded
High Water Mark (ft)	1.0
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	50
Run (%)	40
Pool (%)	10
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	90
WATER QUALITY	
Temperature °C	14.9
Specific Conductance µS/cm	0.378
Dissolved Oxygen mg/L	12.55
pH	7.12
Turbidity NTU	NM
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	0.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	10.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	40.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	30.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	15.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	5.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	0.0

**Parameters to be evaluated in sampling reach**

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	5
Embeddedness	18
Velocity / Depth Regime	10
Sediment Deposition	17
Channel Flow Status	16

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	7
Frequency of Riffles (or Bends)	11
Bank Stability (LEFT BANK)	9
Bank Stability (RIGHT BANK)	9
Vegetative Protection (LEFT BANK)	9
Vegetative Protection (RIGHT BANK)	9
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

**Field Photography**

**Image 1**



**Caption for Image 1**

Downstream site looking downstream

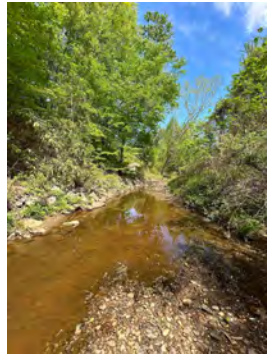
**Image 2**



**Caption for Image 2**

Downstream site looking upstream

**Image 3**



**Caption for Image 3**

Upstream site looking upstream

**Image 4**




**Caption for Image 4**

Upstream site looking downstream

Submit

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	
<b>Record Name - Form Name</b>	
GW Low-Flow	

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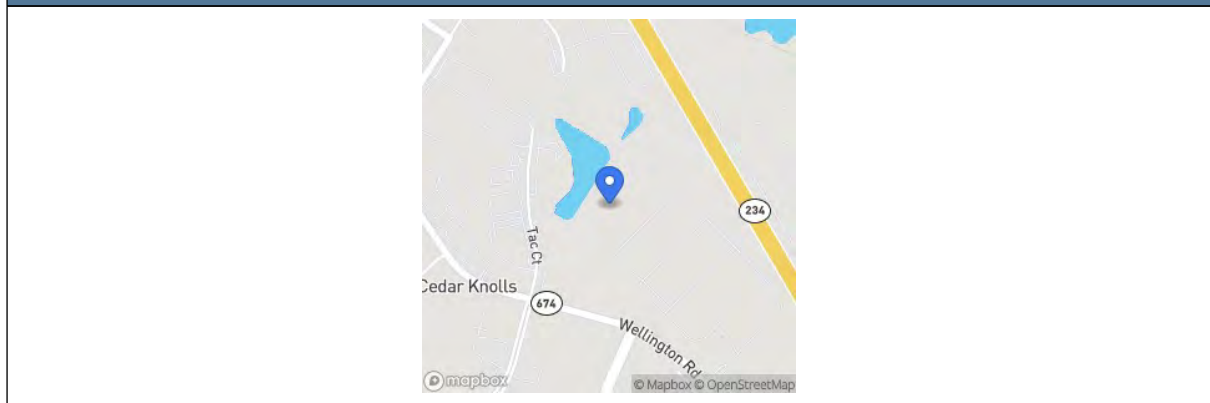


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Dawkins Branch
<b>Site ID</b>	PC-30
<b>Site Address</b>	
<b>Date</b>	04/23/24
<b>Time</b>	13:55
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton A Allie

<b>Stream Name</b>	Dawkins Branch
<b>Location</b>	Manassas
<b>River Basin</b>	Potomac
<b>Investigators</b>	I Ton A Allie
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	23.5
Est. Stream Depth (ft)	0.3
Surface Velocity (ft/sec at thalweg)	0.33
Canopy Cover	Partly shaded
High Water Mark (ft)	0.7
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	45
Run (%)	20
Pool (%)	35
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	100
WATER QUALITY	
Temperature °C	18.47
Specific Conductance µS/cm	604
Dissolved Oxygen mg/L	12.20
pH	8.25
Turbidity NTU	NM
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

Substrate Type	Diameter	% Composition in sampling reach
<b>Bedrock</b>	<b>NA</b>	0.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	15.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	35.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	30.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	10.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	5.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	5.0

**Parameters to be evaluated in sampling reach**

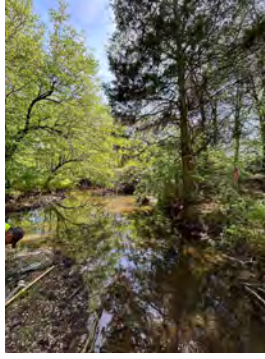
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	18
Embeddedness	14
Velocity / Depth Regime	10
Sediment Deposition	14
Channel Flow Status	10

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	9
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	7
Vegetative Protection (LEFT BANK)	7
Vegetative Protection (RIGHT BANK)	7
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

## Field Photography

### Image 1



### Caption for Image 1

Downstream site looking downstream

### Image 2



### Caption for Image 2

Downstream site looking upstream

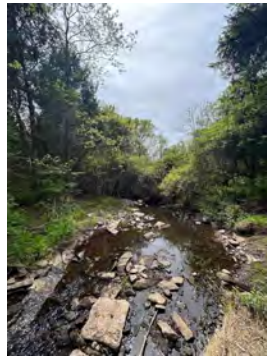
### Image 3



### Caption for Image 3

Upstream site looking upstream

**Image 4**

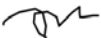


**Caption for Image 4**

Upstream sire looking downstream

Submit

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	

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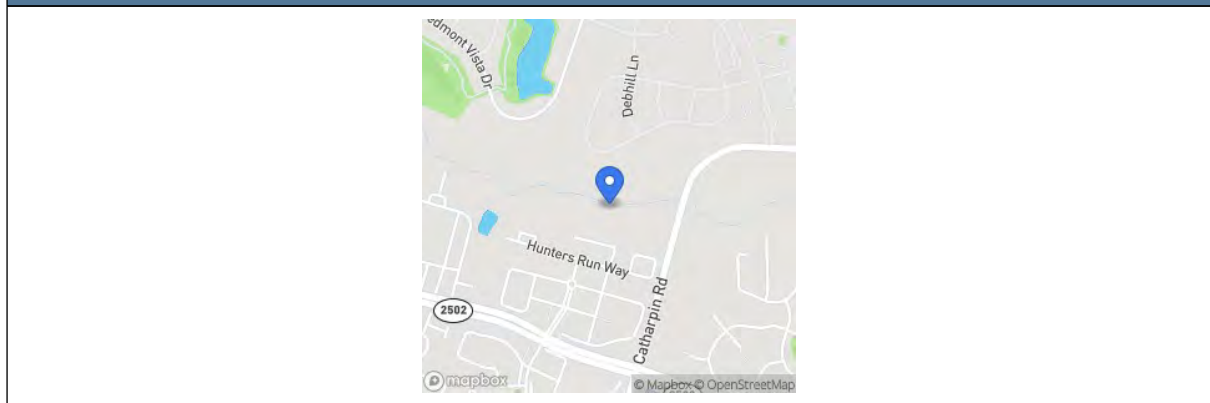


**Biological Monitoring Form**

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Little Bull Run
<b>Site ID</b>	PC-90
<b>Site Address</b>	
<b>Date</b>	04/23/24
<b>Time</b>	09:10
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton A Allie

<b>Stream Name</b>	Little Bull Run
<b>Location</b>	Gainesville
<b>River Basin</b>	Potomac
<b>Investigators</b>	
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

**GPS location**



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	20.5
Est. Stream Depth (ft)	0.55
Surface Velocity (ft/sec at thalweg)	1.36
Canopy Cover	Partly open
High Water Mark (ft)	0.66
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	20
Run (%)	75
Pool (%)	5
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	80
WATER QUALITY	
Temperature °C	12.03
Specific Conductance µS/cm	375
Dissolved Oxygen mg/L	13.96
pH	8.01
Turbidity NTU	NM
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	40.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	35.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	15.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	10.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	

**Parameters to be evaluated in sampling reach**

Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	11
Embeddedness	8
Velocity / Depth Regime	8
Sediment Deposition	10
Channel Flow Status	16

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	6
Bank Stability (LEFT BANK)	7
Bank Stability (RIGHT BANK)	5
Vegetative Protection (LEFT BANK)	7
Vegetative Protection (RIGHT BANK)	5
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

**Field Photography**

**Image 1**



**Caption for Image 1**

Downstream site looking downstream

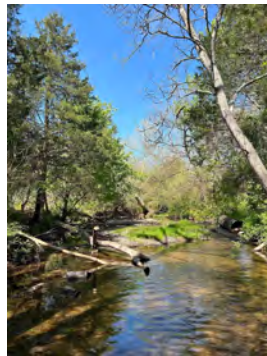
**Image 2**



**Caption for Image 2**

Downstream site looking upstream

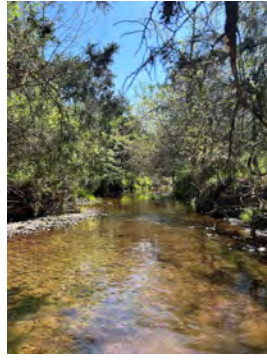
**Image 3**



**Caption for Image 3**

Upstream site looking upstream

**Image 4**

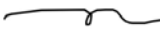


**Caption for Image 4**

Upstream site looking downstream

Submit

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	
<b>Record Name - Form Name</b>	
GW Low-Flow	

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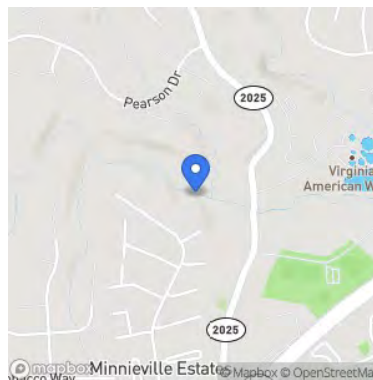


### Biological Monitoring Form

<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Neabsco Creek
<b>Site ID</b>	PC-60
<b>Site Address</b>	
<b>Date</b>	04/24/24
<b>Time</b>	13:51
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton D Robinson

<b>Stream Name</b>	Neabsco Creek
<b>Location</b>	Dale City
<b>River Basin</b>	Potomac
<b>Investigators</b>	I Ton D Robinson
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny

#### GPS location



RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	18.0
Est. Stream Depth (ft)	0.83
Surface Velocity (ft/sec at thalweg)	0.65
Canopy Cover	Partly shaded
High Water Mark (ft)	0.625
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	60
Run (%)	35
Pool (%)	5
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	90
WATER QUALITY	
Temperature °C	16.18
Specific Conductance µS/cm	188
Dissolved Oxygen mg/L	11.65
pH	8.35
Turbidity NTU	NM
WQ Instrument Used	YSI 556
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	5.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	55.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	20.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	0.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	20.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	0.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	0.0

**Parameters to be evaluated in sampling reach**

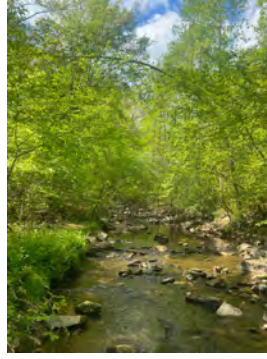
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	16
Embeddedness	19
Velocity / Depth Regime	10
Sediment Deposition	15
Channel Flow Status	16

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	13
Bank Stability (LEFT BANK)	9
Bank Stability (RIGHT BANK)	9
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	6
Riparian Vegetative Zone Width (LEFT BANK)	9
Riparian Vegetative Zone Width (RIGHT BANK)	9

**Field Photography**

**Image 1**



**Caption for Image 1**

Downstream site looking upstream

**Image 2**



**Caption for Image 2**

Downstream site looking downstream

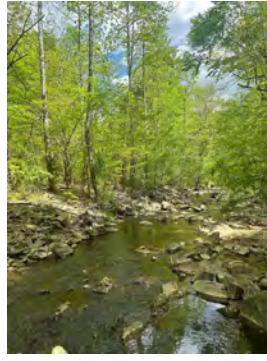
**Image 3**



**Caption for Image 3**

Upstream site looking upstream

**Image 4**




**Caption for Image 4**

Upstream site looking downstream

Submit


**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	
<b>Record Name - Form Name</b>	
GW Low-Flow	

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Biological Monitoring Form	
<b>Project Name</b>	PWC Biomonitoring
<b>Project Number</b>	151280003
<b>Site Name</b>	Purcell Branch
<b>Site ID</b>	PC-10
<b>Site Address</b>	
<b>Date</b>	04/25/24
<b>Time</b>	10:34
<b>Technician(s)</b> List name or names of all relevant technicians/samplers or other personnel	I Ton R Smith
<b>Stream Name</b>	Purcell Branch
<b>Location</b>	Manassas
<b>River Basin</b>	Potomac
<b>Investigators</b>	I Ton R Smith
<b>Reason for Survey</b>	Monitoring
<b>Weather Conditions</b>	Sunny
<b>GPS location</b>	
	

RIPARIAN VEGETATION (18 meter buffer)	
Dominant Type	Trees
INSTREAM FEATURES	
Est. Stream Width (ft)	13.0
Est. Stream Depth (ft)	0.7
Surface Velocity (ft/sec at thalweg)	0.69
Canopy Cover	Partly open
High Water Mark (ft)	0.75
Channelized	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dam Present	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proportion of Reach by Stream Morphology Types	
Riffle (%)	60
Run (%)	30
Pool (%)	10
AQUATIC VEGETATION	
Dominant Type	Attached Algae
Portion of reach with aquatic veg	90
WATER QUALITY	
Temperature °C	13.89
Specific Conductance µS/cm	202
Dissolved Oxygen mg/L	14.84
pH	8.73
Turbidity NTU	NM
WQ Instrument Used	
Water Odors	<input checked="" type="checkbox"/> Normal / None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other
Water Surface Oils	<input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other
Inorganic Substrate Components (should add up to 100%)	

<b>Substrate Type</b>	<b>Diameter</b>	<b>% Composition in sampling reach</b>
<b>Bedrock</b>	<b>NA</b>	30.0
<b>Boulder</b>	<b>&gt;256 mm</b> (10")	15.0
<b>Cobble</b>	<b>64 - 256 mm</b> (2.5" - 10")	20.0
<b>Gravel</b>	<b>2 - 64 mm</b> (0.1" - 2.5")	10.0
<b>Sand</b>	<b>0.06 - 2 mm</b> (gritty)	20.0
<b>Silt</b>	<b>0.004 - 0.06 mm</b>	5.0
<b>Clay</b>	<b>&lt; 0.004 mm</b> (slick)	0.0

**Parameters to be evaluated in sampling reach**

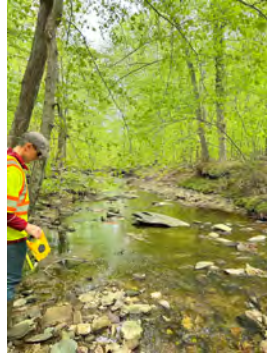
Habitat Parameter	Condition Category
Epifaunal Substrate / Available Cover	14
Embeddedness	13
Velocity / Depth Regime	10
Sediment Deposition	15
Channel Flow Status	10

**Parameters to be evaluated broader than sampling reach**

Habitat Parameter	Condition Category
Channel Alteration	16
Frequency of Riffles (or Bends)	12
Bank Stability (LEFT BANK)	6
Bank Stability (RIGHT BANK)	8
Vegetative Protection (LEFT BANK)	6
Vegetative Protection (RIGHT BANK)	6
Riparian Vegetative Zone Width (LEFT BANK)	8
Riparian Vegetative Zone Width (RIGHT BANK)	8

**Field Photography**

**Image 1**



**Caption for Image 1**

Downstream site looking down

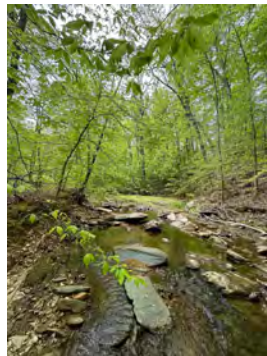
**Image 2**



**Caption for Image 2**

Downstream site looking upstream

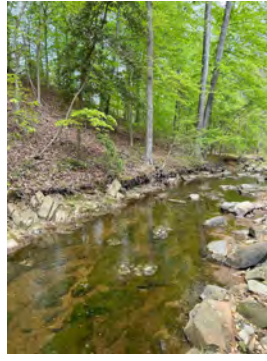
**Image 3**



**Caption for Image 3**

Upstream site looking upstream

**Image 4**




**Caption for Image 4**

Upstream site looking downstream

Submit

**Tablet Form Completed By:**

<b>Name</b>	Ilana Ton
<b>Initials</b>	IT
<b>Signature</b>	
<b>Date/Time</b>	
<b>Record Name - Form Name</b>	
GW Low-Flow	

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## **APPENDIX B**

### **WATER QUALITY LABORATORY RESULTS**

# Occoquan Watershed Monitoring Laboratory

9408 Prince William St.  
 Manassas, VA 20110  
 Tel: (703) 361-5606  
[dongmei@vt.edu](mailto:dongmei@vt.edu)

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton  
 WSP  
 13530 Dulles Technology Dr #300  
 Herndon, VA 20171

## Analysis Report

Report #20230601

	Description	Sample Date	Sample ID	Result	Unit	Reporting Limit	Method	Analysis Date
Little Bull Run	Ammonia as N	10/25/2023	23-3098 PC90	<0.01	mg/L	0.01	SM4500-NH3 G	10/31/2023
	E. coli	10/25/2023	23-3098 PC90	117.8	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/3/2023
	Nitrate+nitrite as N	10/25/2023	23-3098 PC90	0.09	mg/L	0.01	SM4500-NO3-F	10/31/2023
	Orthophosphate as P	10/25/2023	23-3098 PC90	<0.01	mg/L	0.01	SM4500-P F	10/31/2023
	Total Kjeldahl Nitrogen	10/25/2023	23-3098 PC90	<0.5	mg/L	0.50	Lachat 10-107-06-2D	11/2/2023
	Total Phosphorus	10/25/2023	23-3098 PC90	0.02	mg/L	0.01	SM4500-P F, 4500-P J	11/20/2023
	Total Suspended Solids	10/25/2023	23-3098 PC90	1.0	mg/L	1.0	SM2540D	11/2/2023
Dawkins Branch	Ammonia as N	10/25/2023	23-3099 PC30	0.01	mg/L	0.01	SM4500-NH3 G	10/31/2023
	E. coli	10/25/2023	23-3099 PC30	86.2	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/3/2023
	Nitrate+nitrite as N	10/25/2023	23-3099 PC30	0.04	mg/L	0.01	SM4500-NO3-F	10/31/2023
	Orthophosphate as P	10/25/2023	23-3099 PC30	<0.01	mg/L	0.01	SM4500-P F	10/31/2023
	Total Kjeldahl Nitrogen	10/25/2023	23-3099 PC30	<0.5	mg/L	0.50	Lachat 10-107-06-2D	11/2/2023
	Total Phosphorus	10/25/2023	23-3099 PC30	0.02	mg/L	0.01	SM4500-P F, 4500-P J	11/20/2023
	Total Suspended Solids	10/25/2023	23-3099 PC30	3.5	mg/L	1.0	SM2540D	11/2/2023
Cow Branch	Ammonia as N	10/26/2023	23-3100 PC20	0.01	mg/L	0.01	SM4500-NH3 G	10/31/2023
	E. coli	10/26/2023	23-3100 PC20	59.4	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/3/2023
	Nitrate+nitrite as N	10/26/2023	23-3100 PC20	0.28	mg/L	0.01	SM4500-NO3-F	10/31/2023
	Orthophosphate as P	10/26/2023	23-3100 PC20	<0.01	mg/L	0.01	SM4500-P F	10/31/2023
	Total Kjeldahl Nitrogen	10/26/2023	23-3100 PC20	<0.5	mg/L	0.50	Lachat 10-107-06-2D	11/2/2023
	Total Phosphorus	10/26/2023	23-3100 PC20	0.01	mg/L	0.01	SM4500-P F, 4500-P J	11/20/2023
	Total Suspended Solids	10/26/2023	23-3100 PC20	3.2	mg/L	1.0	SM2540D	11/2/2023
Purcell Branch	Ammonia as N	10/26/2023	23-3101 PC10	<0.01	mg/L	0.01	SM4500-NH3 G	10/31/2023
	E. coli	10/26/2023	23-3101 PC10	160.7	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/3/2023
	Nitrate+nitrite as N	10/26/2023	23-3101 PC10	0.11	mg/L	0.01	SM4500-NO3-F	10/31/2023
	Orthophosphate as P	10/26/2023	23-3101 PC10	<0.01	mg/L	0.01	SM4500-P F	10/31/2023
	Total Kjeldahl Nitrogen	10/26/2023	23-3101 PC10	<0.5	mg/L	0.50	Lachat 10-107-06-2D	11/2/2023
	Total Phosphorus	10/26/2023	23-3101 PC10	0.02	mg/L	0.01	SM4500-P F, 4500-P J	11/20/2023
	Total Suspended Solids	10/26/2023	23-3101 PC10	3.5	mg/L	1.0	SM2540D	11/2/2023
Neabsco Creek	Ammonia as N	10/27/2023	23-3102 PC60	<0.01	mg/L	0.01	SM4500-NH3 G	10/31/2023
	E. coli	10/27/2023	23-3102 PC60	13.4	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	11/3/2023
	Nitrate+nitrite as N	10/27/2023	23-3102 PC60	0.01	mg/L	0.01	SM4500-NO3-F	10/31/2023
	Orthophosphate as P	10/27/2023	23-3102 PC60	<0.01	mg/L	0.01	SM4500-P F	10/31/2023
	Total Kjeldahl Nitrogen	10/27/2023	23-3102 PC60	<0.5	mg/L	0.50	Lachat 10-107-06-2D	11/2/2023
	Total Phosphorus	10/27/2023	23-3102 PC60	0.01	mg/L	0.01	SM4500-P F, 4500-P J	11/20/2023
	Total Suspended Solids	10/27/2023	23-3102 PC60	1.9	mg/L	1.0	SM2540D	11/2/2023

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:  
 Dongmei Alvi (Wang)  
 Laboratory Supervisor

# Occoquan Watershed Monitoring Laboratory

9408 Prince William St.  
Manassas, VA 20110  
Tel: (703) 361-5606

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton  
WSP  
13530 Dulles Technology Dr #300  
Herndon, VA 20171

## Analysis Report

Report #20230601

Description	Blank	LCS, %R	Duplicate, RPD	Spike, %R	Matrix Spike, %R	Method	Analysis Date
Ammonia as N	-0.001	95	n.a.	95	96	SM4500-NH3 G	10/31/2023
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
E. coli	n.a.	n.a.	18.0	n.a.	n.a.	SM9221 B(LT)E(EC)C MPN	11/3/2023
Accepted Range							
Nitrate+nitrite as N	-0.001	98	n.a.	97	99	SM4500-NO3-F	10/31/2023
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Orthophosphate as P	0.003	91	n.a.	93	95	SM4500-P F	10/31/2023
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Total Kjeldahl Nitrogen	n.a.	n.a.	n.a.	n.a.	n.a.	Lachat 10-107-06-2D	11/2/2023
Accepted Range							
Total Phosphorus	-0.002	99	5.7	95	n.a.	SM4500-P F, 4500-P J	11/20/2023
Accepted Range	-0.01~0.01	100±10	±10	100±10	100±10		
Total Suspended Solids	0.00	n.a.	25*	n.a.	n.a.	SM2540D	11/3/2023
Accepted Range	-1.0~1.0		n.a.				

n.a.= not applicable

\* for TSS < 10X of reporting limit (1.0 mg/L), duplicate RPD is not applied.

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:

Dongmei Alvi (Wang)

Laboratory Supervisor

# Occoquan Watershed Monitoring Laboratory

9408 Prince William St.  
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[dongmei@vt.edu](mailto:dongmei@vt.edu)

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton  
 WSP  
 13530 Dulles Technology Dr #300  
 Herndon, VA 20171

## Analysis Report

Report #20230601

	Description	Sample Date	Sample ID	Result	Unit	Reporting Limit	Method	Analysis Date
Little Bull Run	Ammonia as N	4/23/2024	24-0900 PC90	0.04	mg/L	0.01	SM4500-NH3 G	5/30/2024
	E. coli	4/23/2024	24-0900 PC90	108	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	4/24/2024
	Nitrate+nitrite as N	4/23/2024	24-0900 PC90	0.26	mg/L	0.01	SM4500-NO3-F	5/30/2024
	Orthophosphate as P	4/23/2024	24-0900 PC90	<0.01	mg/L	0.01	SM4500-P F	5/30/2024
	Total Kjeldahl Nitrogen	4/23/2024	24-0900 PC90	<0.5	mg/L	0.50	Lachat 10-107-06-2D	4/25/2024
	Total Phosphorus	4/23/2024	24-0900 PC90	0.02	mg/L	0.01	SM4500-P F, 4500-P J	5/31/2024
	Total Suspended Solids	4/23/2024	24-0900 PC90	1.0	mg/L	1.0	SM2540D	5/2/2024
Dawkins Branch	Ammonia as N	4/23/2024	24-0901 PC30	0.04	mg/L	0.01	SM4500-NH3 G	5/30/2024
	E. coli	4/23/2024	24-0901 PC30	133	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	4/24/2024
	Nitrate+nitrite as N	4/23/2024	24-0901 PC30	0.04	mg/L	0.01	SM4500-NO3-F	5/30/2024
	Orthophosphate as P	4/23/2024	24-0901 PC30	0.01	mg/L	0.01	SM4500-P F	5/30/2024
	Total Kjeldahl Nitrogen	4/23/2024	24-0901 PC30	0.71	mg/L	0.50	Lachat 10-107-06-2D	4/25/2024
	Total Phosphorus	4/23/2024	24-0901 PC30	0.03	mg/L	0.01	SM4500-P F, 4500-P J	5/31/2024
	Total Suspended Solids	4/23/2024	24-0901 PC30	76	mg/L	1.0	SM2540D	5/2/2024
Cow Branch	Ammonia as N	4/24/2024	24-0903 PC20	0.04	mg/L	0.01	SM4500-NH3 G	5/30/2024
	E. coli	4/24/2024	24-0903 PC20	54.6	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	4/25/2024
	Nitrate+nitrite as N	4/24/2024	24-0903 PC20	0.36	mg/L	0.01	SM4500-NO3-F	5/30/2024
	Orthophosphate as P	4/24/2024	24-0903 PC20	<0.01	mg/L	0.01	SM4500-P F	5/30/2024
	Total Kjeldahl Nitrogen	4/24/2024	24-0903 PC20	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/17/2024
	Total Phosphorus	4/24/2024	24-0903 PC20	<0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/31/2024
	Total Suspended Solids	4/24/2024	24-0903 PC20	1.1	mg/L	1.0	SM2540D	5/2/2024
Purcell Branch	Ammonia as N	4/24/2024	24-0904 PC60	0.02	mg/L	0.01	SM4500-NH3 G	5/30/2024
	E. coli	4/24/2024	24-0904 PC60	19.3	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	4/25/2024
	Nitrate+nitrite as N	4/24/2024	24-0904 PC60	0.14	mg/L	0.01	SM4500-NO3-F	4/25/2024
	Orthophosphate as P	4/24/2024	24-0904 PC60	<0.01	mg/L	0.01	SM4500-P F	5/30/2024
	Total Kjeldahl Nitrogen	4/24/2024	24-0904 PC60	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/17/2024
	Total Phosphorus	4/24/2024	24-0904 PC60	<0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/31/2024
	Total Suspended Solids	4/24/2024	24-0904 PC60	5.6	mg/L	1.0	SM2540D	5/2/2024
Neabsco Creek	Ammonia as N	4/25/2024	24-0905 PC10	0.02	mg/L	0.01	SM4500-NH3 G	5/30/2024
	E. coli	4/25/2024	24-0905 PC10	411.0	MPN/100mL	1.80	SM9221 B(LT)E(EC)C MPN	4/26/2024
	Nitrate+nitrite as N	4/25/2024	24-0905 PC10	0.40	mg/L	0.01	SM4500-NO3-F	5/30/2024
	Orthophosphate as P	4/25/2024	24-0905 PC10	<0.01	mg/L	0.01	SM4500-P F	5/30/2024
	Total Kjeldahl Nitrogen	4/25/2024	24-0905 PC10	<0.5	mg/L	0.50	Lachat 10-107-06-2D	5/17/2024
	Total Phosphorus	4/25/2024	24-0905 PC10	<0.01	mg/L	0.01	SM4500-P F, 4500-P J	5/31/2024
	Total Suspended Solids	4/25/2024	24-0905 PC10	2.0	mg/L	1.0	SM2540D	5/2/2024

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:  
 Dongmei Alvi (Wang)  
 Laboratory Supervisor

# Occoquan Watershed Monitoring Laboratory

9408 Prince William St.  
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Tel: (703) 361-5606

Virginia Laboratory ID: 460026

Att: Ms. Ilana Ton  
WSP  
13530 Dulles Technology Dr #300  
Herndon, VA 20171

## Analysis Report

Report #20230601

Description	Blank	LCS, %R	Duplicate, %R	RPD Spike, %R	Matrix Spike, %R	Method	Analysis Date
Ammonia as N	0.007	107	n.a.	99	95	SM4500-NH3 G	5/30/2024
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
E. coli	n.a.	n.a.	5.9	n.a.	n.a.	SM9221 B(LT)E(EC)C MPN	4/26/2024
Accepted Range							
Nitrate+nitrite as N	0.004	100	n.a.	99	99	SM4500-NO3-F	5/30/2024
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Orthophosphate as P	0.003	96	n.a.	94	94	SM4500-P F	5/30/2024
Accepted Range	-0.01~0.01	100±10		100±10	100±10		
Total Kjeldahl Nitrogen	n.a.	n.a.	n.a.	n.a.	n.a.	Lachat 10-107-06-2D	5/17/2024
Accepted Range							
Total Phosphorus	-0.040	100	2.5	101	n.a.	SM4500-P F, 4500-P J	5/31/2024
Accepted Range	-0.01~0.01	100±10	±10	100±10	100±10		
Total Suspended Solids	0.00	98	8	n.a.	n.a.	SM2540D	5/2/2024
Accepted Range	-1.0~1.0	100±10	n.a.				

n.a.= not applicable

Note: TKN samples were contracted to NELAC certified lab at Prince William County Service Authority

Prepared by:  
Dongmei Alvi (Wang)  
Laboratory Supervisor

## **APPENDIX C**

### **BENTHIC MACROINVERTEBRATE LABORATORY RESULTS**



3701 NW 98<sup>th</sup> Street  
Gainesville, FL 32606

[wsp.com](http://wsp.com)

February 26, 2024

Ms. Lynne Mowery

WSP

14424 Albemarle Point Place, Suite 115

Chantilly, VA 20151

**Re: Prince William County Multiple Habitat Sampling Method Report**

Dear Ms. Mowery:

WSP (Gainesville office) completed benthic macroinvertebrate determinations for samples collected by WSP (Chantilly office), in October 2023. WSP (Gainesville office) received a total of five samples, one from each of the following locations: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch. The results of the taxonomic analyses are presented in this report.

## 1 Multiple Habitat Sampling Method

### Methods and Procedures

All samples collected by WSP, Chantilly office, in October 2023, were received by WSP's taxonomy laboratory at Gainesville, Florida, where they were logged in and processed. The samples were sorted (i.e. organisms removed from debris) and organisms were identified and enumerated by a qualified taxonomist according to Section 7.2 of the U.S. Environmental Protection Agency's (USEPA) "Rapid Bioassessment Protocol for Use in Wadeable Streams and Rivers" (RBP) (Barbour et al., 1999). Eight metrics were calculated including the Biotic Index, using guidance from Hilsenhoff (1987); the Percent Model Affinity (PMA), using guidance from Novak and Bode (1992); and the Virginia Stream Condition Index, using guidance from Virginia Department of Environmental Quality (2008). The scraper taxa and tolerance values were identified according to life history information from RBP (Barbour et al., 1999); "An Introduction to the Aquatic Insects of North America" (Merritt et al., 2008); "Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys" (Tennessee Department of Environment and Conservation, 2011); and "Standard Operating Procedures for the Collection and Analysis of Benthic Macroinvertebrates" (North Carolina Department of Environmental Quality, 2016). Quality assurance and quality control checks were conducted according to the EPA RBP on Laboratory Quality Control for Macroinvertebrate Taxonomic Identification (Barbour et al., 1999). Quality assurance/quality control requirements for sample picking and taxonomic identification were conducted by a WSP Senior Taxonomist.

## 2 Benthic Macroinvertebrate Results

The benthic macroinvertebrate community data were used to generate metrics outlined in the WSP Sampling Plan (2015). The Multiple Habitat Sampling assessments conducted for the five samples are summarized below in Table 1. Taxonomic identifications and abundances of the benthic macroinvertebrates and metric calculations for each sample are included in Attachment 1. References are listed in Attachment 2.



**Table 1: Summary of Results of Multiple Habitat Samples – Fall 2023**

Metric	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	31	34	41	41	37
Abundance	201	200	206	194	216
EPT Index	6	1	5	7	10
EPT/EPT + Chironomidae Ratio	0.80	0.04	0.25	0.47	0.86
Percent Dominant Taxon	40.80	27.00	14.08	14.95	25.46
Percent Chironomidae	15.92	11.00	35.44	28.87	10.65
Biotic Index	6.54	6.15	5.49	5.78	5.35
BI Category	Fairly Poor	Fair	Good	Fair	Good
Percent Modal Affinity (PMA)	42.41	36.50	53.11	53.09	50.09
PMA Category	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
VSCI	48.40	51.11	57.51	56.82	70.21

Source: WSP, 2024

Created By: JSD

Checked By: SEM

### Closing

We appreciate the opportunity to provide ecological services to you. Please do not hesitate to contact me if you have questions or need to request further information. You can reach me by phone at (352) 284-7094, or via email at [shannon.mcmorrow@wsp.com](mailto:shannon.mcmorrow@wsp.com).

Sincerely,



Jennifer S. Davenport, M.Sc.  
Senior Biologist, Taxonomist  
+1 727-967-8450  
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Shannon McMorrow, PWS  
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### Attachments:

1 – Tabulated Data for Fall 2023

2 – References

# ATTACHMENT 1

## TABULATED DATA



Multiple Habitat Sampling

Samples Collected: October 2023

Project #: 151280003.001

Metrics	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
<b>Taxa Richness</b>	31	34	41	41	37
<b>Abundance</b>	201	200	206	194	216
<b>EPT Index</b>	6	1	5	7	10
<b>EPT/EPT + Chironomidae Ratio</b>	0.80	0.04	0.25	0.47	0.86
<b>Percent Dominant Taxon</b>	40.80	27.00	14.08	14.95	25.46
<b>Percent Chironomidae</b>	15.92	11.00	35.44	28.87	10.65
<b>Biotic Index (BI)</b>	6.54	6.15	5.49	5.78	5.35
<b>Biotic Index (BI) Category</b>	Fairly Poor	Fair	Good	Fair	Good
<b>Percent Model Affinity (PMA)</b>	42.41	36.50	53.11	53.09	50.09
<b>Percent Model Affinity (PMA) Category</b>	Moderately Impacted	Moderately Impacted	Slightly Impacted	Slightly Impacted	Slightly Impacted
<b>VSCI</b>	48.40	51.11	57.51	56.82	70.21

Created By: JSD

Checked By: SEM

Source: WSP, 2024

Cow Branch  
 Multiple Habitat Sampling  
 Sample Collected: 26-Oct-2023  
 Project #: 151280003.001

Results for Cow Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Nemertea		Hoplunemertea		Monostilifera	Prostomatidae	<i>Prostoma</i> spp.	2	0	0	0	0		6.1	0.06	0	0	2	0	0	0
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	15	0	0	0	0		5	0.37	0	15	0	0	0	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa</i> spp.	3	0	0	0	0		8.84	0.13	0	0	3	0	3	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	Planorbidae spp.	1	0	0	0	0		6.3	0.03	0	0	1	0	1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Ferrissia fragilis</i>	1	0	0	0	0		6.6	0.03	0	0	1	0	1	
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	<i>Sphaeriida</i> spp.	1	0	0	0	0		6.6	0.03	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis intercalaris</i>	1	1	0	0	0		5	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	<i>Argia</i> spp.	1	0	0	0	0		8.3	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsychidae</i> spp.	12	0	0	12	0		4	0.24	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	21	0	0	21	0		6.6	0.69	0	0	0	0	21	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	82	0	0	82	0		7.9	3.22	0	0	0	0	82	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	<i>Hydroptilo</i> spp.	3	0	0	3	0		6.5	0.10	0	0	0	3	3	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	9	0	0	9	0		3.3	0.15	0	0	0	9	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	1	0	0	0	0		5.6	0.03	1	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Macronychus glabratus</i>	1	0	0	0	0		4.7	0.02	1	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.03	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3	0	0	0	3		6.2	0.09	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Ablabesmyia mallochii</i>	1	0	0	0	1		7.4	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Clinotanytus</i> spp.	1	0	0	0	1		7.8	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	1	0	0	0	1		6.6	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaadiinae spp.	5	0	0	0	5		5	0.12	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> spp.	8	0	0	0	8		5.78	0.23	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	1	0	0	0	1		5.7	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	4	0	0	0	4		4.4	0.09	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	6	0	0	0	6		8	0.24	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	1	0	0	0	1		4.7	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladus</i>	1	0	0	0	1		4.86	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	8	0	0	0	0		4.9	0.20	0	0	8	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Empididae	<i>Hemerodromia</i> spp.	1	0	0	0	0		7.57	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Tipula (Yamatotipula)</i> spp.	2	0	0	0	0		7.5	0.07	0	0	2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Limoniidae	<i>Antocha</i> spp.	3	0	0	0	0		4.4	0.07	0	0	3	0	0	

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	39.50
Model % Plecoptera	5	5.00
Model % Trichoptera	10	53.18
Model % Chironomidae	20	4.08
Model % Coleoptera	10	9.00
Model % Oligochaeta	5	2.46
Model % Other	10	1.94
<b>Sum of Difference</b>		<b>115.17</b>
<b>Sum of Difference * 0.5</b>		<b>57.59</b>
<b>Percent Model Affinity</b>		<b>42.41</b>
<b>Percent Model Affinity Category</b>		<b>Moderately Impacted</b>

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	31	140.91	100.00
Total Abundance	201		
% Ephemeroptera	0.50	0.81	0.81
% Plecoptera	0.00		
% Trichoptera	63.18		
% Chironomidae	15.92	84.08	84.08
% Dominant Taxon	40.80		
Biotic Index	6.54	50.86	50.86
% Coleoptera	1.00		
% Oligochaeta	7.46		
% Other	11.94		
% Plecoptera + Trichoptera (less Hydropsychidae)	5.97	16.77	16.77
% Scrapers	4.98	9.64	9.64
% Top 2 Dominant Taxa	51.24	70.46	70.46
EPT Index	6	54.55	54.55
EPT/EPT + Chironomidae Ratio	0.80		

Hilsenhoff Biotic Index Category: Fairly Poor

Final VSCI score: 48.40

Created By: JSD  
 Checked By: SEM  
 Source: WSP, 2024

Dawkins Branch  
 Multiple Habitat Sampling  
 Sample Collected: 25-Oct-2023  
 Project #: 151280003.001

Results for Dawkins Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Cnidaria		Hydrozoa	Hydroidolina	Anthoathecata	Hydridae	<i>Hydra</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0	0	0
Platyhelminthes						Platyhelminthes spp.	20	0	0	0	0			0.00	0	0	20	0	0	0
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	2	0	0	0	0		5	0.05	0	2	0	0	0	0
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	20	0	0	0	0		9.5	0.96	0	20	0	0	0	0
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	<i>Pristina americana</i>	1	0	0	0	0		7.7	0.04	0	1	0	0	0	0
Annelida		Clitellata	Oligochaeta	Rhynchobdellida	Glossiphoniidae	<i>Helobdella elongata</i>	1	0	0	0	0		9.1	0.05	0	0	1	0	0	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa</i> spp.	1	0	0	0	0		8.84	0.04	0	0	1	0	1	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	Planorbidae spp.	2	0	0	0	0		6.3	0.06	0	0	2	0	2	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbella scalaris</i>	1	0	0	0	0		6.82	0.03	0	0	1	0	1	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Ferrissia fragilis</i>	12	0	0	0	0		6.6	0.40	0	0	12	0	12	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Lymnaeidae	Lymnaeidae spp.	1	0	0	0	0		7	0.04	0	0	1	0	1	0
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	<i>Corbicula</i> spp.	5	0	0	0	0		6.12	0.15	0	0	5	0	0	0
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	10	0	0	0	0		6.6	0.33	0	0	10	0	0	0
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	<i>Musculium</i> spp.	2	0	0	0	0		5	0.05	0	0	2	0	0	0
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	<i>Gammarus</i> spp.	2	0	0	0	0		7.4	0.07	0	0	2	0	0	0
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	<i>Gammarus</i> spp.	33	0	0	0	0		7.1	1.18	0	0	33	0	0	33
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Crangonyctidae	<i>Crangonyx</i> spp.	1	0	0	0	0		7.2	0.04	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	1	1	0	0	0		4	0.02	0	0	0	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	<i>Argia moesta</i>	4	0	0	0	0		8.3	0.17	0	0	4	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	<i>Argia tibialis</i>	1	0	0	0	0		8.3	0.04	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	54	0	0	0	0		5.6	1.53	54	0	0	0	54	54
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	<i>Ectopria</i> spp.	1	0	0	0	0		4.3	0.02	1	0	0	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	<i>Psephenus</i> spp.	1	0	0	0	0		2.35	0.01	1	0	0	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Chironomidae	Larsiidae	<i>Larsia</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	1	0	0	0	1		6.6	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum scalaenum</i> group	1	0	0	0	1		8.5	0.04	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedilum illinoense</i> group	7	0	0	0	7		8.7	0.31	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Dicrotendipes</i> spp.	1	0	0	0	1		7.2	0.04	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Apedilum</i> spp.	1	0	0	0	1		5.69	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> spp.	2	0	0	0	2		5.78	0.06	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	2	0	0	0	2		5.7	0.06	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	5	0	0	0	5		8	0.20	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladius</i>	1	0	0	0	1		4.86	0.02	0	0	0	0	0	0
Arthropoda	Chelicerata	Arachnida	Acarí	Trombidiformes	Pionidae	<i>Piona</i> spp.	1	0	0	0	0			0.00	0	0	1	0	0	0

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	39.50
Model % Plecoptera	5	5.00
Model % Trichoptera	10	10.00
Model % Chironomidae	20	9.00
Model % Coleoptera	10	18.00
Model % Oligochaeta	5	6.50
Model % Other	10	39.00
Sum of Difference		127.00
Sum of Difference * 0.5		63.50
Percent Model Affinity		36.50
Percent Model Affinity Category		Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	34	154.55	100.00
Total Abundance	200		
% Ephemeroptera	0.50	0.82	0.82
% Plecoptera	0.00		
% Trichoptera	0.00		
% Chironomidae	11.00	89.00	89.00
% Dominant Taxon	27.00		
Biotic Index	6.15	56.60	56.60
% Coleoptera	28.00		
% Oligochaeta	11.50		
% Other	49.00		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	37.00	71.71	71.71
% Top 2 Dominant Taxa	43.50	81.65	81.65
EPT Index	1	9.09	9.09
EPT/EPT + Chironomidae Ratio	0.04		

Hilsenhoff Biotic Index Category | Fair

Final VSCI score | 51.11

Created By: JSD  
 Checked By: SEM  
 Source: WSP, 2024

Little Bull Run  
 Multiple Habitat Sampling  
 Sample Collected: 25-Oct-2023  
 Project #: 151280003.001

Results for Little Bull Run

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers
Platyhelminthes						Platyhelminthes spp.	10	0	0	0	0			0.00	0	0	10	0	0
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	3	0	0	0	0		5	0.07	0	3	0	0	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	Physa spp.	4	0	0	0	0		8.84	0.17	0	0	4	0	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	Planorbidae spp.	12	0	0	0	0		6.3	0.37	0	0	12	0	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Lymnaeidae	Lymnaeidae spp.	1	0	0	0	0		7	0.03	0	0	1	0	
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	Corbicula spp.	3	0	0	0	0		6.12	0.09	0	0	3	0	
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	4	0	0	0	0		6.6	0.13	0	0	4	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis spp.	19	19	0	0	0		6.8	0.63	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Proclaeon spp.	1	1	0	0	0		1.9	0.01	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Maccaffertium spp.	2	2	0	0	0		3.15	0.03	0	0	0	2	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Argia spp.	1	0	0	0	0		8.3	0.04	0	0	1	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Aeshnidae	Aeshnidae spp.	1	0	0	0	0		5.6	0.03	0	0	1	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	1	0	0	1	0		4	0.02	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	Chimarra spp.	1	0	0	1	0		3.3	0.02	0	0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera		Coleoptera spp.	1	0	0	0	0			0.00	1	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Dubiraphia spp.	14	0	0	0	0		5.5	0.38	14	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	29	0	0	0	0		5.6	0.80	29	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Microcyloepus spp.	3	0	0	0	0		2.11	0.03	3	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Optioservus spp.	1	0	0	0	0		2.1	0.01	1	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Curculionidae	Curculionidae spp.	10	0	0	0	0		4	0.20	10	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Hydrophilidae	Berosus spp.	1	0	0	0	0		8.8	0.04	1	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	Ectopria spp.	1	0	0	0	0		4.3	0.02	1	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	Psephenus spp.	2	0	0	0	0		2.35	0.02	2	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	4	0	0	0	0		7	0.14	0	0	4	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	8	0	0	0	8		6.2	0.24	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Ablabesmyia mallochii	3	0	0	0	3		7.4	0.11	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironominae spp.	1	0	0	0	1		6.2	0.03	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsus spp.	8	0	0	0	8		6.6	0.26	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedilum illinoense group	4	0	0	0	4		8.7	0.17	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheotanytarsus spp.	1	0	0	0	1		6.5	0.03	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Dicrotendipes spp.	4	0	0	0	4		7.2	0.14	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Pseudochironomus spp.	1	0	0	0	1		4.9	0.02	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Apedilum spp.	1	0	0	0	1		5.69	0.03	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaadiinae spp.	9	0	0	0	9		5	0.22	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus spp.	9	0	0	0	9		5.78	0.26	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Caryoneura spp.	6	0	0	0	6		5.7	0.17	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaadius spp.	14	0	0	0	14		4.4	0.30	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemanniella xena	2	0	0	0	2		8	0.08	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus or Orthoclaadius	2	0	0	0	2		4.86	0.05	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	Simulium spp.	2	0	0	0	0		4.9	0.05	0	0	2	0	
Nematoda						Nematoda spp.	2	0	0	0	0		5	0.05	0	0	2	0	

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	29.32
Model % Plecoptera	5	5.00
Model % Trichoptera	10	9.03
Model % Chironomidae	20	15.44
Model % Coleoptera	10	20.10
Model % Oligochaeta	5	3.54
Model % Other	10	11.36
Sum of Difference		93.79
Sum of Difference * 0.5		46.89
Percent Model Affinity		53.11
Percent Model Affinity Category		Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	41	186.36	100.00
Total Abundance	206		
% Ephemeroptera	10.68	17.42	17.42
% Plecoptera	0.00		
% Trichoptera	0.97		
% Chironomidae	35.44	64.56	64.56
% Dominant Taxon	14.08		
Biotic Index	5.49	66.34	66.34
% Coleoptera	30.10		
% Oligochaeta	1.46		
% Other	21.36		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.49	1.36	1.36
% Scrapers	33.50	64.91	64.91
% Top 2 Dominant Taxa	23.30	110.84	100.00
EPT Index	5	45.45	45.45
EPT/EPT + Chironomidae Ratio	0.25		

Hilsenhoff Biotic Index Category: Good

Final VSCI score: 57.51

Created By: JSD  
 Checked By: SEM  
 Source: WSP, 2024

Neabsco Creek  
 Multiple Habitat Sampling  
 Sample Collected: 27-Oct-2023  
 Project #: 151280003.001

Results for Neabsco Creek

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Nemertea		Hoploneurata		Monostilifera	Prostomatidae	<i>Prostoma</i> spp.	1	0	0	0	0		6.1	0.03	0	0	1	0	0	0
Annelida		Clitellata	Oligochaeta			<i>Oligochaeta</i> spp.	3	0	0	0	0		5	0.08	0	3	0	0	0	
Annelida		Clitellata	Oligochaeta	Enchytraeida	Enchytraeidae	<i>Enchytraeidae</i> spp.	1	0	0	0	0		9.84	0.05	0	1	0	0	0	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa</i> spp.	3	0	0	0	0		8.84	0.14	0	0	3	0	3	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Planorbidae</i> spp.	7	0	0	0	0		6.3	0.23	0	0	7	0	7	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Helisoma anceps</i>	1	0	0	0	0		6.6	0.03	0	0	1	0	1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Ferrissia fragilis</i>	3	0	0	0	0		6.6	0.10	0	0	3	0	3	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Lymnaeidae	<i>Lymnaeidae</i> spp.	1	0	0	0	0		7	0.04	0	0	1	0	1	
Mollusca		Bivalvia	Autobranchia	Venerida	Cyrenidae	<i>Corbicula</i> spp.	2	0	0	0	0		6.12	0.06	0	0	2	0	2	
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	<i>Gammarus</i> spp.	1	0	0	0	0		7.1	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetidae</i> spp.	1	1	0	0	0		6.1	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis intercalaris</i>	1	1	0	0	0		5	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Calopterygidae	<i>Calopteryx</i> spp.	1	0	0	0	0		7.5	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Aeshnidae	<i>Aeshnidae</i> spp.	1	0	0	0	0		5.6	0.03	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsychidae</i> spp.	3	0	0	0	3		4	0.06	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	29	0	0	0	29		6.6	0.99	0	0	0	0	29	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	6	0	0	0	6		7.9	0.25	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	<i>Hydroptila</i> spp.	5	0	0	0	5		6.5	0.17	0	0	0	5	5	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	4	0	0	0	4		3.3	0.07	0	0	0	4	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	8	0	0	0	0		5.6	0.23	8	0	0	0	8	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Ancyronyx variegateus</i>	15	0	0	0	0		6.8	0.53	15	0	0	0	15	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera spp.	<i>Diptera</i> spp.	1	0	0	0	0		7	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Chironomidae</i> spp.	4	0	0	0	4		6.2	0.13	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Larsia</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	1	0	0	0	1		6.6	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthoclaadiinae</i> spp.	2	0	0	0	2		5	0.05	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> spp.	1	0	0	0	1		5.78	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	1	0	0	0	1		5.7	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthoclaadius</i> spp.	26	0	0	0	26		4.4	0.59	0	0	0	0	26	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	4	0	0	0	4		8	0.17	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus</i> spp.	3	0	0	0	3		4.7	0.07	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthoclaadius</i>	9	0	0	0	9		4.86	0.23	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Diplocladius cultriger</i>	3	0	0	0	3		8	0.12	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	16	0	0	0	0		4.9	0.41	0	0	16	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Limoniidae	<i>Limoniidae</i> spp.	2	0	0	0	0		4.9	0.05	0	0	2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Limoniidae	<i>Antocha</i> spp.	16	0	0	0	0		4.4	0.36	0	0	16	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Micravelia</i> spp.	2	0	0	0	0		6	0.06	0	0	2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Megaloptera	Corydalidae	<i>Corydalus cornutus</i>	1	0	0	0	0		5.2	0.03	0	0	1	0	0	
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Lebertiidae	<i>Lebertia</i> spp.	2	0	0	0	0		8	0.08	0	0	2	0	0	
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Clathrosperchonidae	<i>Clathrosperchon</i> spp.	1	0	0	0	0		0.00	0	0	0	1	0	0	

Percent Model Affinity		Difference from Model %
Model % Ephemeroptera	40	38.97
Model % Plecoptera	5	5.00
Model % Trichoptera	10	14.23
Model % Chironomidae	20	8.87
Model % Coleoptera	10	1.86
Model % Oligochaeta	5	2.94
Model % Other	10	21.96
<b>Sum of Difference</b>		<b>93.81</b>
<b>Sum of Difference * 0.5</b>		<b>46.91</b>
<b>Percent Model Affinity</b>		<b>53.09</b>
<b>Percent Model Affinity Category</b>		Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	41	186.36	100.00
Total Abundance	194		
% Ephemeroptera	1.03	1.68	1.68
% Plecoptera	0.00		
% Trichoptera	24.23		
% Chironomidae	28.87	71.13	71.13
% Dominant Taxon	14.95		
Biotic Index	5.78	62.12	62.12
% Coleoptera	11.86		
% Oligochaeta	2.06		
% Other	31.96		
% Plecoptera + Trichoptera (less Hydropsychidae)	4.64	13.03	13.03
% Scrapers	22.16	42.96	42.96
% Top 2 Dominant Taxa	28.35	103.54	100.00
EPT Index	7	63.64	63.64
EPT/EPT + Chironomidae Ratio	0.47		

Hilsenhoff Biotic Index Category | Fair

Final VSCI score | 56.82

Created By: JSD  
 Checked By: SEM  
 Source: WSP, 2024



Purcell Branch  
 Multiple Habitat Sampling  
 Sample Collected: 26-Oct-2023  
 Project #: 151280003.001

Results for Purcell Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Nemertea		Hoplonemertea		Monostilifera	Prostomatidae	<i>Prostoma</i> spp.	1	0	0	0	0		6.1	0.03	0	0	1	0	0	0
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0		5	0.02	0	1	0	0	0	0
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.04	0	1	0	0	0	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa</i> spp.	3	0	0	0	0		8.84	0.12	0	0	3	0	3	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	<i>Physa acuta</i>	1	0	0	0	0		8.84	0.04	0	0	1	0	1	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Helisoma anceps</i>	1	0	0	0	0		6.6	0.03	0	0	1	0	1	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Planorbidae	<i>Ferrissia fragilis</i>	10	0	0	0	0		6.6	0.31	0	0	10	0	10	0
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Lymnaeidae	Lymnaeidae spp.	1	0	0	0	0		7	0.03	0	0	1	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	1	1	0	0	0		6.1	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	14	14	0	0	0		4	0.26	0	0	0	0	14	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	<i>Maccaffertium</i> spp.	10	10	0	0	0		3.15	0.15	0	0	0	0	10	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	<i>Maccaffertium smithae</i>	9	9	0	0	0		3.15	0.13	0	0	0	0	9	0
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Aeshnidae	<i>Boyeria vinosa</i>	1	0	0	0	0		5.8	0.03	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Mystacides sepulchralis</i>	1	0	0	1	0		2.6	0.01	0	0	0	1	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2	0	0	2	0		4	0.04	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	55	0	0	55	0		6.6	1.68	0	0	0	0	0	55
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche</i> spp.	3	0	0	3	0		4.3	0.06	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Hydropsyche betteni/depravata/potomacensis</i>	6	0	0	6	0		7.9	0.22	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	46	0	0	46	0		3.3	0.70	0	0	0	46	0	46
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	6	0	0	0	0		5.6	0.16	6	0	0	0	6	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Diptera spp.	1	0	0	0	0		7	0.03	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Ablabesmyia mallochii</i>	1	0	0	0	1		7.4	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus</i> spp.	1	0	0	0	1		6.5	0.03	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthoclaadiinae spp.	1	0	0	0	1		5	0.02	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> spp.	2	0	0	0	2		5.78	0.05	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	7	0	0	0	7		5.7	0.18	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella xena</i>	1	0	0	0	1		8	0.04	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametriocnemus</i> spp.	1	0	0	0	1		3.9	0.02	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthoclaadius</i>	3	0	0	0	3		4.86	0.07	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Diplocladius cultriger</i>	6	0	0	0	6		8	0.22	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	<i>Tipula (Yamatotipula)</i> spp.	2	0	0	0	0		7.5	0.07	0	0	2	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Limoniidae	Limoniidae spp.	10	0	0	0	0		4.9	0.23	0	0	10	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Rhagovelia obesa</i>	1	0	0	0	0		6	0.03	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	<i>Microvelia</i> spp.	1	0	0	0	0		6	0.03	0	0	1	0	0	0
Arthropoda	Hexapoda	Collembola		Entomobryomorpha	Isotomidae	Isotomidae spp.	3	0	0	0	0		10	0.14	0	0	3	0	0	0
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Sperchontidae	<i>Sperchon</i> spp.	1	0	0	0	0		8	0.04	0	0	1	0	0	0
Arthropoda	Chelicerata	Arachnida	Acari	Trombidiformes	Lebertiidae	<i>Lebertia</i> spp.	1	0	0	0	0		8	0.04	0	0	1	0	0	0

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 24.26
Model % Plecoptera	5 5.00
Model % Trichoptera	10 42.31
Model % Chironomidae	20 9.35
Model % Coleoptera	10 7.22
Model % Oligochaeta	5 4.07
Model % Other	10 7.59
Sum of Difference	99.81
Sum of Difference * 0.5	49.91
Percent Model Affinity	50.09
Percent Model Affinity Category	Slightly Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	37	168.18	100.00
Total Abundance	216		
% Ephemeroptera	15.74	25.68	25.68
% Plecoptera	0.00		
% Trichoptera	52.31		
% Chironomidae	10.65	89.35	89.35
% Dominant Taxon	25.46		
Biotic Index	5.35	68.32	68.32
% Coleoptera	2.78		
% Oligochaeta	0.93		
% Other	17.59		
% Plecoptera + Trichoptera (less Hydropsychidae)	21.76	61.12	61.12
% Scrapers	25.46	49.35	49.35
% Top 2 Dominant Taxa	46.76	76.94	76.94
EPT Index	10	90.91	90.91
EPT/EPT + Chironomidae Ratio	0.86		

Hilsenhoff Biotic Index Category: Good

Final VSCI score: 70.21

Created By: JSD  
 Checked By: SEM  
 Source: WSP, 2024

# ATTACHMENT 2

## REFERENCES



## Attachment 2 - References

- Barbour, M. T., J. Gerritsen, B. D. Snyder and J. B. Stribling. 1999. Rapid bioassessment protocols for use in wadeable streams and rivers: periphyton, benthic macroinvertebrates, and fish. 2nd ed. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.
- Hilsenhoff, W. L. 1987. An improved biotic index of organic stream pollution. *The Great Lakes Entomologist* 20 (1): 31-39.
- Merritt, R. W., K. W. Cummings and M. B. Berg. 2008. An introduction to the aquatic insects of North America. 4th ed. Kendall Hunt Publishing Company, Dubuque, IA.
- North Carolina Department of Environmental Quality. 2016. Standard operating procedures for the collection and analysis of benthic macroinvertebrates. Division of Water Resources. Raleigh, North Carolina. February 2016.
- Novak, M. A. and R. W. Bode. 1992. Percent model affinity: a new measure of macroinvertebrate community composition. *Journal of North American Benthological Society* 11 (1): 80-85.
- Tennessee Department of Environment and Conservation. 2011. Quality system standard operating procedure for macroinvertebrate stream surveys. Division of Water Pollution Control. Nashville, Tennessee.
- Virginia Department of Environmental Quality. 2008. Biological monitoring program: quality assurance project plan for wadeable streams and rivers. Division of Water Quality, Office of Water Quality Monitoring and Assessment Programs, Richmond, VA.



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July 17, 2024

Ms. Lynne Mowery

WSP

14424 Albemarle Point Place, Suite 115

Chantilly, VA 20151

## **Re: Prince William County Multiple Habitat Sampling Method Report**

Dear Ms. Mowery:

WSP (Gainesville office) completed benthic macroinvertebrate determinations for samples collected by WSP (Chantilly office), in April 2024. WSP (Gainesville office) received a total of five samples, one from each of the following locations: Cow Branch, Dawkins Branch, Little Bull Run, Neabsco Creek, and Purcell Branch. The results of the taxonomic analyses are presented in this report.

## **1 Multiple Habitat Sampling Method**

### Methods and Procedures

All samples collected by WSP, Chantilly office, in April 2024, were received by WSP's taxonomy laboratory at Gainesville, Florida, where they were logged in and processed. The samples were sorted (i.e. organisms removed from debris) and organisms were identified and enumerated by a qualified taxonomist according to Section 7.2 of the U.S. Environmental Protection Agency's (USEPA) "Rapid Bioassessment Protocol for Use in Wadeable Streams and Rivers" (RBP) (Barbour et al., 1999). Eight metrics were calculated including the Biotic Index, using guidance from Hilsenhoff (1987); the Percent Model Affinity (PMA), using guidance from Novak and Bode (1992); and the Virginia Stream Condition Index, using guidance from Virginia Department of Environmental Quality (2008). The scraper taxa and tolerance values were identified according to life history information from RBP (Barbour et al., 1999); "An Introduction to the Aquatic Insects of North America" (Merritt et al., 2008); "Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys" (Tennessee Department of Environment and Conservation, 2011); and "Standard Operating Procedures for the Collection and Analysis of Benthic Macroinvertebrates" (North Carolina Department of Environmental Quality, 2016). Quality assurance and quality control checks were conducted according to the EPA RBP on Laboratory Quality Control for Macroinvertebrate Taxonomic Identification (Barbour et al., 1999). Quality assurance/quality control requirements for sample picking and taxonomic identification were conducted by a WSP Senior Taxonomist.

## **2 Benthic Macroinvertebrate Results**

The benthic macroinvertebrate community data were used to generate metrics outlined in the WSP Sampling Plan (2015). The Multiple Habitat Sampling assessments conducted for the five samples are summarized below in Table 1. Taxonomic identifications and abundances of the benthic macroinvertebrates and metric calculations for each sample are included in Attachment 1. References are listed in Attachment 2.

**Table 1: Summary of Results of Multiple Habitat Samples – Spring 2024**

Metric	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
Taxa Richness	18	27	38	30	40
Abundance	200	216	212	216	211
EPT Index	1	1	5	6	8
EPT/EPT + Chironomidae Ratio	0.01	0.06	0.13	0.07	0.13
Percent Dominant Taxon	33.00	72.69	17.45	19.44	17.06
Percent Chironomidae	67.50	7.41	60.85	86.57	63.03
Biotic Index	6.26	6.96	6.33	5.56	5.52
BI Category	Fair	Fairly Poor	Fair	Fair	Fair
Percent Modal Affinity (PMA)	26.50	26.20	47.92	33.43	48.74
PMA Category	Severely Impacted	Severely Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
VSCI	29.88	37.14	46.93	42.49	51.25

Source: WSP, 2024

Created By: JSD

Checked By: RH

### Closing

We appreciate the opportunity to provide ecological services to you. Please do not hesitate to contact me if you have questions or need to request further information. You can reach me by phone at (352) 284-7094, or via email at [shannon.mcmorrow@wsp.com](mailto:shannon.mcmorrow@wsp.com).

Sincerely,



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### Attachments:

- 1 – Tabulated Data for Spring 2024
- 2 – References

# ATTACHMENT 1

## TABULATED DATA



Multiple Habitat Sampling

Samples Collected: April 2024

Project #: US-EI-151280003

Metrics	Site Locations				
	Cow Branch	Dawkins Branch	Little Bull Run	Neabsco Creek	Purcell Branch
<b>Taxa Richness</b>	18	27	38	30	40
<b>Abundance</b>	200	216	212	216	211
<b>EPT Index</b>	1	1	5	6	8
<b>EPT/EPT + Chironomidae Ratio</b>	0.01	0.06	0.13	0.07	0.13
<b>Percent Dominant Taxon</b>	33.00	72.69	17.45	19.44	17.06
<b>Percent Chironomidae</b>	67.50	7.41	60.85	86.57	63.03
<b>Biotic Index (BI)</b>	6.26	6.96	6.33	5.56	5.52
<b>Biotic Index (BI) Category</b>	Fair	Fairly Poor	Fair	Fair	Fair
<b>Percent Model Affinity (PMA)</b>	26.50	26.20	47.92	33.43	48.74
<b>Percent Model Affinity (PMA) Category</b>	Severely impacted	Severely Impacted	Moderately Impacted	Severely Impacted	Moderately Impacted
<b>VSCI</b>	29.88	37.14	46.93	42.49	51.25

Created By: RH

Checked By: JSD

Source: WSP, 2024



Cow Branch  
 Multiple Habitat Sampling  
 Sample Collected: 24-Apr-2024  
 Project #: US-EI-15128003

Results for Cow Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Annelida		Citellata	Oligochaeta			Oligochaeta spp.	2	0	0	0	0		5	0.05	0	2	0	0	0	
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.05	0	1	0	0	0	
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	58	0	0	0	0		8.7	2.54	0	58	0	0	0	58
Annelida		Citellata	Oligochaeta	Lumbriculida	Lumbriculidae	<i>Lumbriculus cf. variegatus</i>	1	0	0	0	0		7.03	0.04	0	1	0	0	0	
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	<i>Gammarus</i> spp.	1	0	0	0	0		7.1	0.04	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera		Ephemeroptera spp.	1	1	0	0	0				0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera		Tipuloidea spp.	1	0	0	0	0		4.9	0.02	0	0	1	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	28	0	0	0	28		6.2	0.87	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomini spp.	1	0	0	0	1		6	0.03	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus</i> spp.	2	0	0	0	2		6.5	0.07	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladinae spp.	8	0	0	0	8		5	0.20	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus cf. cylindraceus</i>	2	0	0	0	2		5.78	0.06	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladius</i> spp.	20	0	0	0	20		4.4	0.44	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thiemanniella</i> spp.	1	0	0	0	1		8	0.04	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametriocnemus</i> spp.	1	0	0	0	1		3.9	0.02	0	0	0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladius</i>	66	0	0	0	66		66	4.86	1.51	0	0	0	0	66
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Eukiefferiella clarensis</i> group	5	0	0	0	5		6.2	0.16	0	0	0	0	5	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Pothastia</i> spp.	1	0	0	0	1		6.4	0.03	0	0	0	0	0	

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40
Model % Plecoptera	5
Model % Trichoptera	10
Model % Chironomidae	20
Model % Coleoptera	10
Model % Oligochaeta	5
Model % Other	10
Sum of Difference	147.00
Sum of Difference * 0.5	73.50
Percent Model Affinity	26.50
Percent Model Affinity Category	Severely impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	18	81.82	81.82
Total Abundance	200		
% Ephemeroptera	0.50	0.82	0.82
% Plecoptera	0.00		
% Trichoptera	0.00		
% Chironomidae	67.50	32.50	32.50
% Dominant Taxon	33.00		
Biotic Index	6.26	55.03	55.03
% Coleoptera	0.00		
% Oligochaeta	31.00		
% Other	1.00		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	2.50	4.84	4.84
% Top 2 Dominant Taxa	62.00	54.91	54.91
EPT Index	1	9.09	9.09
EPT/EPT + Chironomidae Ratio	0.01		

Hilsenhoff Biotic Index Category Fair

Final VSCI score 29.88

Created By: RH  
 Checked By: JSD  
 Source: WSP, 2024

Dawkins Branch  
 Multiple Habitat Sampling  
 Sample Collected: 23-Apr-2024  
 Project #: US-EI-151280003

Results for Dawkins Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa	
Annelida		Clitellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0		5	0.02	0	1	0	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0		9.5	0.04	0	1	0	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Aulodrilus limnobius	1	0	0	0	0		5.2	0.02	0	1	0	0			
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Ophidonais serpentina	3	0	0	0	0		2	0.03	0	3	0	0			
Annelida		Clitellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeidae spp.	1	0	0	0	0		9.84	0.05	0	1	0	0			
Mollusca		Gastropoda				Gastropoda spp.	1	0	0	0	0		7	0.03	0	1	0	1			
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	Physa acuta	7	0	0	0	0		8.84	0.29	0	0	7	0	7		
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Planorbidae	Planorbidae spp.	1	0	0	0	0		6.3	0.03	0	0	1	0	1		
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	4	0	0	0	0		6.6	0.12	0	0	4	0	4		
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda		Semitaudata spp.	3	0	0	0	0		7.4	0.10	0	0	3	0			
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Gammaridae	Gammarus spp.	157	0	0	0	0	157	7.1	5.16	0	0	157	0		157	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis omica	1	1	0	0	0		6.8	0.03	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Enallagma spp.	5	0	0	0	0		8.5	0.20	0	0	5	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Libellulidae	Platthemis lydia	1	0	0	0	0		9.8	0.05	0	0	1	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	11	0	0	0	0		9.6	0.29	11	0	0	0	11	11	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera spp.	Diptera spp.	2	0	0	0	0		7	0.06	0	0	2	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3	0	0	0	3		6.2	0.09	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomus spp.	1	0	0	0	1		9.3	0.04	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium illinoense group	1	0	0	0	1		8.7	0.04	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheotanytarsus spp.	1	0	0	0	1		6.5	0.03	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Pseudochironomus spp.	1	0	0	0	1		4.9	0.02	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parachironomus spp.	1	0	0	0	1		8	0.04	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Endochironomus spp.	1	0	0	0	1		7.99	0.04	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladiinae spp.	1	0	0	0	0		5	0.02	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus trifascia	1	0	0	0	1		5.78	0.03	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladus spp.	3	0	0	0	3		4.4	0.06	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parametriochnemus spp.	2	0	0	0	2		3.9	0.04	0	0	0	0			

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40
Model % Plecoptera	5
Model % Trichoptera	10
Model % Chironomidae	20
Model % Coleoptera	10
Model % Oligochaeta	5
Model % Other	10
Sum of Difference	147.59
Sum of Difference * 0.5	73.80
Percent Model Affinity	26.20
Percent Model Affinity Category	Severely Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	27	122.73	100.00
Total Abundance	216		
% Ephemeroptera	0.46	0.76	0.76
% Plecoptera	0.00		
% Trichoptera	0.00		
% Chironomidae	7.41	92.59	92.59
% Dominant Taxon	72.69		
Biotic Index	6.96	44.64	44.64
% Coleoptera	5.09		
% Oligochaeta	3.24		
% Other	83.80		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	9.26	17.94	17.94
% Top 2 Dominant Taxa	77.78	32.11	32.11
EPT Index	1	9.09	9.09
EPT/EPT + Chironomidae Ratio	0.06		

Hilsenhoff Biotic Index Category | Fairly Poor

Final VSCI score | 37.14

Created By: RH  
 Checked By: JSD  
 Source: WSP, 2024

Little Bull Run  
 Multiple Habitat Sampling  
 Sample Collected: 23-Apr-2024  
 Project #: US-EI-151280003

Results for Little Bull Run

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Platyhelminthes						Platyhelminthes spp.	5	0	0	0	0				0	0	5	0		
Annelida		Citellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0			5	0.02	0	1	0		
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0			9.5	0.05	0	1	0		
Annelida		Citellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeidae spp.	2	0	0	0	0			9.84	0.10	0	2	0		
Mollusca		Gastropoda				Gastropoda spp.	1	0	0	0	0			7	0.03	0	0	1		1
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	Physa acuta	14	0	0	0	0			8.84	0.60	0	14	0		14
Mollusca		Bivalvia	Autobranchia	Sphaeriida	Sphaeriidae	Sphaeriidae spp.	2	0	0	0	0			6.6	0.06	0	0	2		
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Crangonyctidae	Crangonyx spp.	1	0	0	0	0			7.2	0.03	0	0	1		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis spp.	4	4	0	0	0			6.8	0.13	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis diminuta	11	11	0	0	0			6.8	0.36	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Caenidae	Caenis amica	2	2	0	0	0			6.8	0.07	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Enallagma spp.	1	0	0	0	0			8.5	0.04	0	0	1		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2	0	0	2	0			4	0.04	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Cheumatopsyche spp.	1	0	0	1	0			6.6	0.03	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	11	0	0	0	0			5.6	0.30	11	0	0		11
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Curculionidae	Curculionidae spp.	1	0	0	0	0			4	0.02	1	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Dytiscidae	Dytiscidae spp.	2	0	0	0	0			5.5	0.05	2	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera spp.	Diptera spp.	12	0	0	0	0			7	0.41	0	0	12		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	21	0	0	0	21			6.2	0.63	0	0	0		21
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemannimyia grp. sp.	1	0	0	0	1			8.4	0.04	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsus spp.	10	0	0	0	10			6.5	0.32	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedilum illinoense group	2	0	0	2	0			8.7	0.08	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rhectanytarsus spp.	37	0	0	37	37			6.5	1.17	0	0	0		37
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Dicrotendipes spp.	12	0	0	0	12			7.2	0.42	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cryptotendipes spp.	1	0	0	0	1			6.2	0.03	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Apedilum spp.	2	0	0	0	2			5.69	0.06	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladinae spp.	5	0	0	0	5			5	0.12	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricatopus spp.	1	0	0	0	1			5.78	0.03	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricatopus trifascia	5	0	0	0	5			5.78	0.14	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladus spp.	6	0	0	0	6			4.4	0.13	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemannella spp.	1	0	0	0	1			8	0.04	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Nanocladius spp.	1	0	0	0	1			7.4	0.04	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parametacnemeus spp.	5	0	0	0	5			3.9	0.09	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheocricotopus spp.	7	0	0	0	7			4.7	0.16	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricatopus or Orthocladus	12	0	0	0	12			4.86	0.28	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	Simulium spp.	7	0	0	0	0			4.9	0.17	0	0	7		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Ceratopogoninae spp.	1	0	0	0	0			5.9	0.03	0	0	1		
Arthropoda	Cheicerata	Arachnida	Acani	Trombidiformes	Limnesiidae	Limnesiidae spp.	1	0	0	0	0					0	0	1		0

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 31.98
Model % Plecoptera	5 5.00
Model % Trichoptera	10 8.58
Model % Chironomidae	20 40.85
Model % Coleoptera	10 3.40
Model % Oligochaeta	5 3.11
Model % Other	10 11.23
Sum of Difference	104.15
Sum of Difference * 0.5	52.08
Percent Model Affinity	47.92
Percent Model Affinity Category	Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	38	172.73	100.00
Total Abundance	212		
% Ephemeroptera	8.02	13.08	13.08
% Plecoptera	0.00		
% Trichoptera	1.42		
% Chironomidae	60.85	39.15	39.15
% Dominant Taxon	17.45		
Biotic Index	6.33	54.00	54.00
% Coleoptera	6.60		
% Oligochaeta	1.89		
% Other	21.23		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.00	0.00	0.00
% Scrapers	12.26	23.77	23.77
% Top 2 Dominant Taxa	27.36	104.97	100.00
EPT Index	5	45.45	45.45
EPT/EPT + Chironomidae Ratio	0.13		

Hilsenhoff Biotic Index Category: Fair

Final VSCI score: 46.93

Created By: RH  
 Checked By: JSD  
 Source: WSP, 2024

Neabasco Creek  
 Multiple Habitat Sampling  
 Sample Collected: 24-Apr-2024  
 Project #: US-EI-151280003

Results for Neabasco Creek

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa	
Annelida		Citellata	Oligochaeta			Oligochaeta spp.	1	0	0	0	0		5	0.02	0	1	0	0			
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	Nais communis	4	0	0	0	0		8.7	0.16	0	4	0	0			
Annelida		Citellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeus spp.	1	0	0	0	0		9.84	0.05	0	1	0	0			
Mollusca		Gastropoda	Caenogastropoda	Littorinimorpha	Amnicolidae	Amnicola limosa	1	0	0	0	0		8	0.04	0	0	1	0	1		
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	Physa acuta	2	0	0	0	0		8.84	0.08	0	0	2	0	2		
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda		Senticaudata spp.	1	0	0	0	0		7.4	0.03	0	0	1	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	6	6	0	0	0		6.1	0.17	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetis intercalaris	1	1	0	0	0		5	0.02	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetis flavistriga	4	4	0	0	0		6.8	0.13	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Cheumatopsyche spp.	1	0	0	1	0		6.6	0.03	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsyche betteni/depravata/potomacensis	1	0	0	1	0		7.9	0.04	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	Hydroptila spp.	2	0	0	2	0		6.5	0.06	0	0	0	2	2		
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	1	0	0	0	0		5.6	0.03	1	0	0	0	1		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera	Diptera spp.	1	0	0	0	0		7	0.03	0	0	1	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	18	0	0	18	0		6.2	0.52	0	0	0	0			
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemannimyia grp. sp.	1	0	0	0	1		8.4	0.04	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium flavum	3	0	0	0	3		5.7	0.08	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium illinoense group	2	0	0	0	2		8.7	0.08	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheotanytarsus spp.	13	0	0	13	0		6.5	0.39	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladinae spp.	11	0	0	0	11		5	0.25	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus spp.	15	0	0	0	15		5.78	0.40	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Corynoneura spp.	3	0	0	0	3		5.7	0.08	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Orthocladus spp.	39	0	0	0	39		4.4	0.79	0	0	0	0	0		39
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemanniella spp.	3	0	0	0	3		8	0.11	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parametricnemus spp.	12	0	0	0	12		3.9	0.22	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheocricotopus spp.	5	0	0	0	5		4.7	0.11	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus or Orthocladus	42	0	0	0	42		4.86	0.95	0	0	0	0	0		42
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Hydrobaenus spp.	1	0	0	0	1		9.2	0.04	0	0	0	0	0		
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parthastia spp.	19	0	0	0	19		6.4	0.56	0	0	0	0	0		
Nematoda						Nematoda spp.	2	0	0	0	0		5	0.05	0	0	2	0	0		

Percent Model Affinity	Difference from Model %	
Model % Ephemeroptera	40	34.91
Model % Plecoptera	5	5.00
Model % Trichoptera	10	8.15
Model % Chironomidae	20	66.57
Model % Coleoptera	10	9.54
Model % Oligochaeta	5	2.22
Model % Other	10	6.76
Sum of Difference		133.15
Sum of Difference * 0.5		66.57
Percent Model Affinity		33.43
Percent Model Affinity Category		Severely Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	30	136.36	100.00
Total Abundance	215		
% Ephemeroptera	5.09	8.31	8.31
% Plecoptera	0.00		
% Trichoptera	1.85		
% Chironomidae	86.57	13.43	13.43
% Dominant Taxon	19.44		
Biotic Index	5.56	65.34	65.34
% Coleoptera	0.46		
% Oligochaeta	2.78		
% Other	3.24		
% Plecoptera + Trichoptera (less Hydropsychidae)	0.93	2.60	2.60
% Scrapers	2.78	5.38	5.38
% Top 2 Dominant Taxa	37.50	90.32	90.32
EPT Index	6	54.55	54.55
EPT/EPT + Chironomidae Ratio	0.07		

Hilsenhoff Biotic Index Category: Fair

Final VSCI score: 42.40

Created By: RH  
 Checked By: JSD  
 Source: WSP, 2024

Purcell Branch  
 Multiple Habitat Sampling  
 Sample Collected: 25-Apr-2024  
 Project #: US-EI-151280003

Results for Purcell Branch

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Raw Abundance	Ephemeroptera	Plecoptera	Trichoptera	Chironomidae	Dominant Taxon	Tolerance Values	Tolerance Values * Individual Abundance/Total Abundance	Coleoptera	Oligochaeta	Other	Plecoptera & Trichoptera (less Hydropsychidae)	Scrapers	Top 2 Dominant Taxa
Annelida		Citellata	Oligochaeta			Oligochaeta spp.	2	0	0	0	0			5	0.05	0	2	0	0	0
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	0	0	0	0			9.5	0.05	0	1	0	0	0
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Nais communis</i>	10	0	0	0	0			8.7	0.41	0	10	0	0	0
Annelida		Citellata	Oligochaeta	Tubificida	Naididae	<i>Nais behningi</i>	3	0	0	0	0			8.7	0.12	0	3	0	0	0
Annelida		Citellata	Oligochaeta	Enchytraeida	Enchytraeidae	Enchytraeidae spp.	1	0	0	0	0			9.84	0.05	0	1	0	0	0
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	<i>Physa acuta</i>	1	0	0	0	0			8.84	0.04	0	0	1	0	1
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Baetidae spp.	4	4	0	0	0			6.1	0.12	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Baetis flavistriga</i>	4	4	0	0	0			6.8	0.13	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	<i>Heptageniidae</i> spp.	1	1	0	0	0			4	0.02	0	0	0	0	1
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	<i>Mocoffertium</i> spp.	1	1	0	0	0			3.15	0.02	0	0	0	0	1
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	<i>Mytacidus sepulchralis</i>	2	0	0	2	0			2.6	0.02	0	0	0	2	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	<i>Hydroptilidae</i> spp.	1	0	0	1	0			4	0.02	0	0	0	1	1
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	<i>Hydroptila</i> spp.	2	0	0	2	0			6.5	0.06	0	0	0	2	2
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	<i>Chimarra</i> spp.	4	0	0	4	0			3.3	0.06	0	0	0	4	0
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	9	0	0	0	0			5.6	0.24	0	0	0	0	9
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Psephenidae	<i>Psephenus herricki</i>	1	0	0	0	0			2.3	0.01	1	0	0	0	1
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Diptera spp.	Diptera spp.	1	0	0	0	0			7	0.03	0	0	1	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	11	0	0	0	11			6.2	0.32	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemannimyia</i> grp. sp.	1	0	0	0	1			8.4	0.04	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cladotanytarsus</i> spp.	1	0	0	0	1			4	0.02	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	1	0	0	0	1			6.6	0.03	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rhectanytarsus</i> spp.	8	0	0	8	0			6.5	0.25	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tribelos fuscicome</i>	1	0	0	0	1			5.1	0.02	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cryptotendipes</i> spp.	1	0	0	0	1			6.2	0.03	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladinae</i> spp.	10	0	0	0	10			5	0.24	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Chironomidae</i> spp.	3	0	0	0	3			5.78	0.08	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus trifascia</i>	1	0	0	0	1			5.78	0.03	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Corynoneura</i> spp.	4	0	0	0	4			5.7	0.11	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Orthocladus</i> spp.	6	0	0	0	6			4.4	0.13	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Thienemanniella</i> spp.	3	0	0	0	3			8	0.11	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametrioctenus</i> spp.	26	0	0	0	26			3.9	0.48	0	0	0	0	26
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rhectocricotopus</i> spp.	6	0	0	0	6			4.7	0.13	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus orthocladus</i>	36	0	0	0	36	36		4.86	0.83	0	0	0	0	36
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Pothostia</i> spp.	14	0	0	0	14			6.4	0.43	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	6	0	0	0	0			4.9	0.14	0	0	6	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	<i>Ceratopogoninae</i> spp.	17	0	0	0	0			5.9	0.48	0	0	17	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	Tipulidae spp.	2	0	0	0	0			4.9	0.05	0	0	2	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Culicidae	Culicidae spp.	1	0	0	0	0			8.1	0.04	0	0	1	0	0
Arthropoda	Chelicerata	Arachnida	Acari	Sarcoptiformes		Oribatida spp.	1	0	0	0	0					0	0	1	0	0
Nematoda						Nematoda spp.	3	0	0	0	0			5	0.07	0	0	3	0	0

Percent Model Affinity	Difference from Model %
Model % Ephemeroptera	40 35.26
Model % Plecoptera	5 5.00
Model % Trichoptera	10 5.73
Model % Chironomidae	20 43.03
Model % Coleoptera	10 5.26
Model % Oligochaeta	5 3.06
Model % Other	10 5.17
Sum of Difference	102.51
Sum of Difference * 0.5	51.26
Percent Model Affinity	48.74
Percent Model Affinity Category	Moderately Impacted

Metric	Value	VSCI metrics	Adjusted VSCI metrics
Species Richness	40	181.82	100.00
Total Abundance	211		
% Ephemeroptera	4.74	7.73	7.73
% Plecoptera	0.00		
% Trichoptera	4.27		
% Chironomidae	63.03	36.97	36.97
% Dominant Taxon	17.06		
Biotic Index	5.52	65.92	65.92
% Coleoptera	4.74		
% Oligochaeta	8.06		
% Other	15.17		
% Plecoptera + Trichoptera (less Hydropsychidae)	4.27	11.98	11.98
% Scrapers	7.58	14.70	14.70
% Top 2 Dominant Taxa	29.38	102.05	100.00
EPT Index	8	72.73	72.73
EPT/EPT + Chironomidae Ratio	0.13		

Hilsenhoff Biotic Index Category	Fair
Final VSCI score	51.25

Created By: RH  
 Checked By: JSD  
 Source: WSP, 2024

# ATTACHMENT 2

## REFERENCES



## Attachment 2 - References

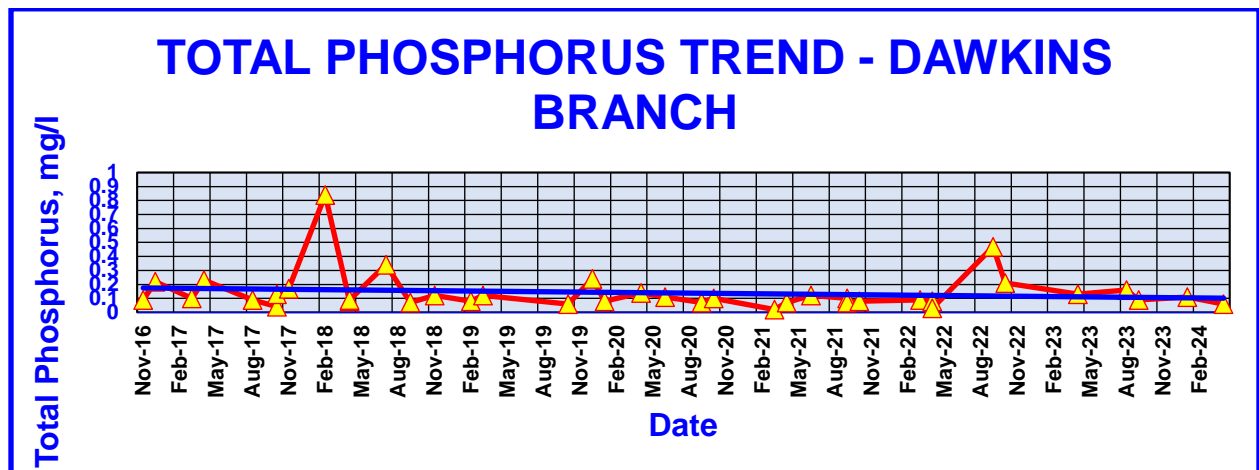
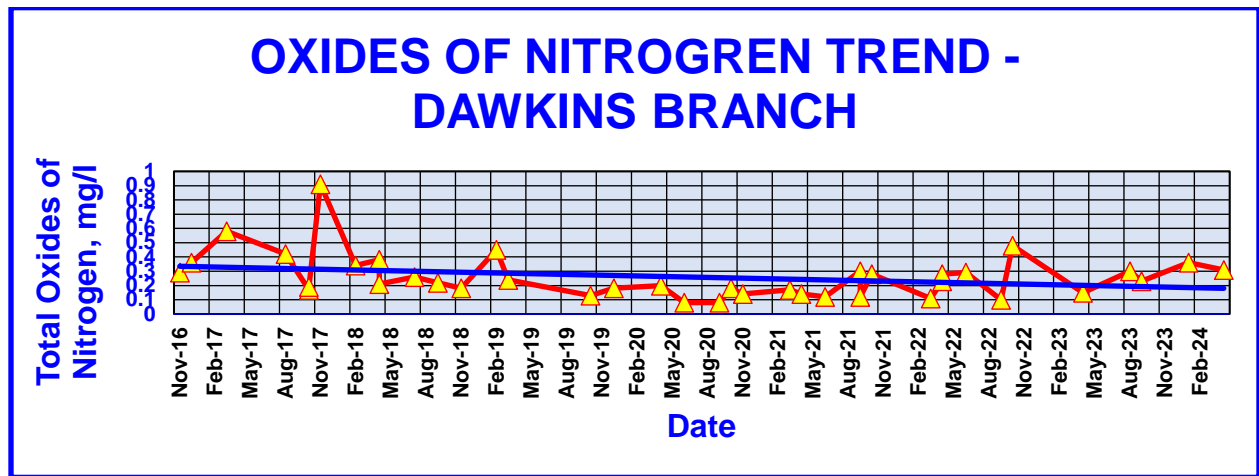
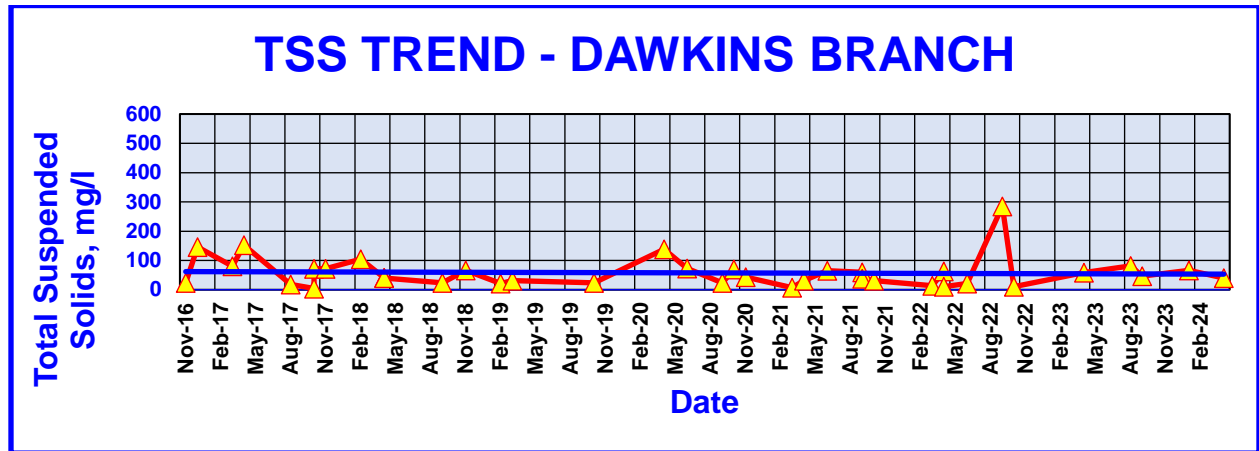
- Barbour, M. T., J. Gerritsen, B. D. Snyder and J. B. Stribling. 1999. Rapid bioassessment protocols for use in wadeable streams and rivers: periphyton, benthic macroinvertebrates, and fish. 2nd ed. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.
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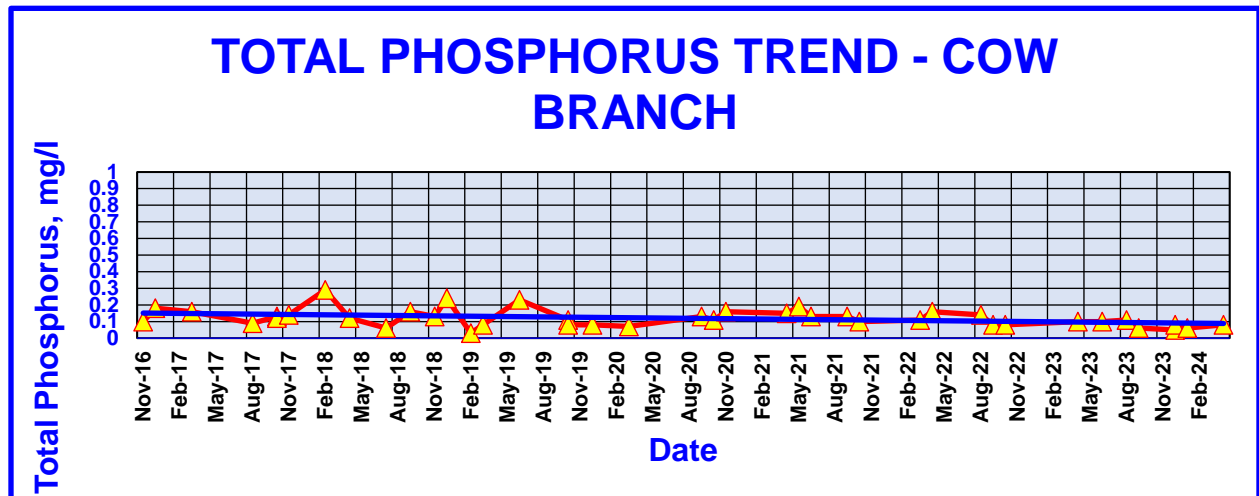
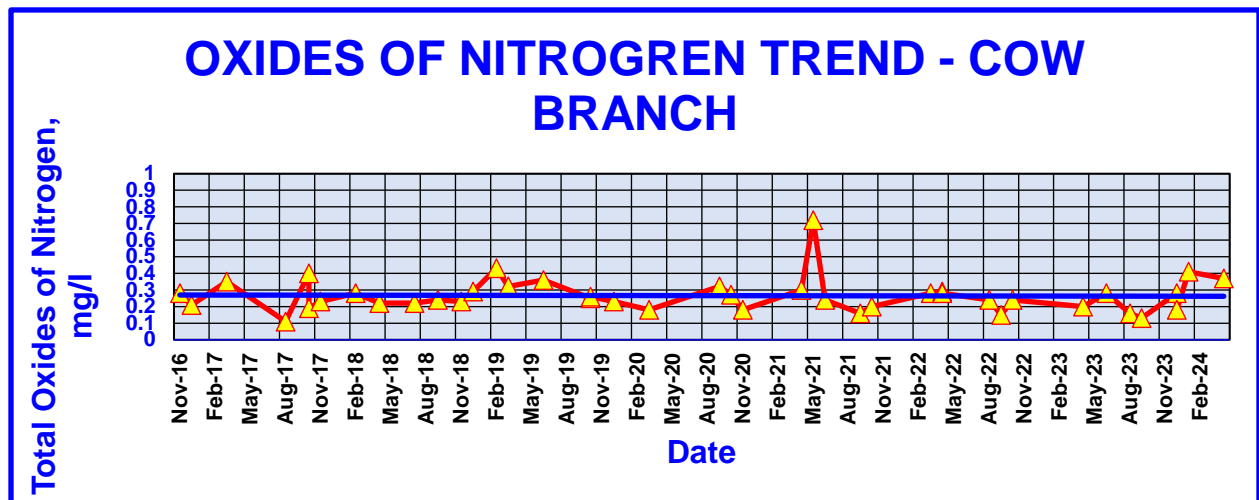
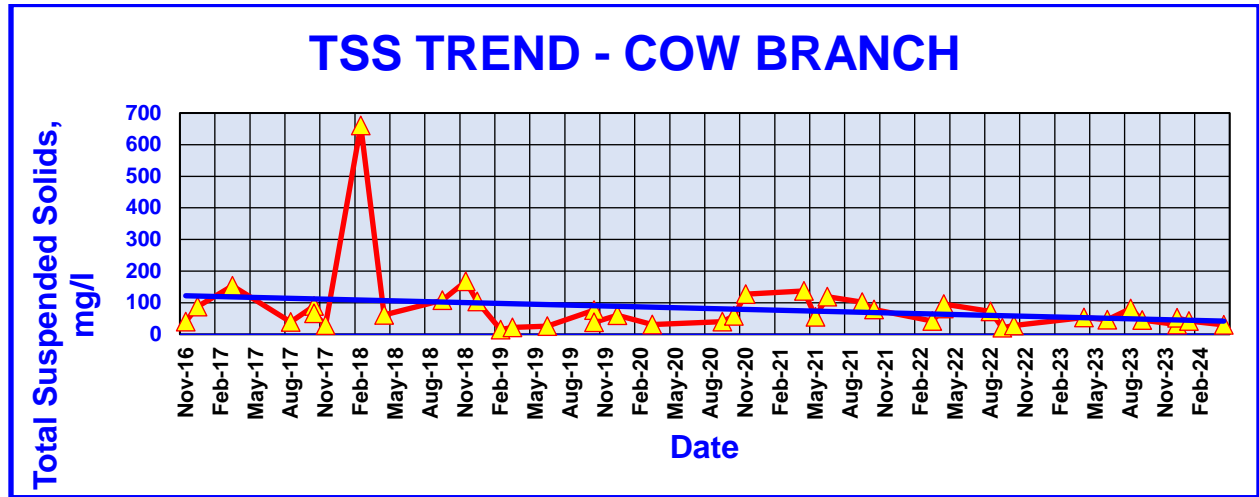
## **Appendix Q**

### **In-Stream Monitoring Summary**

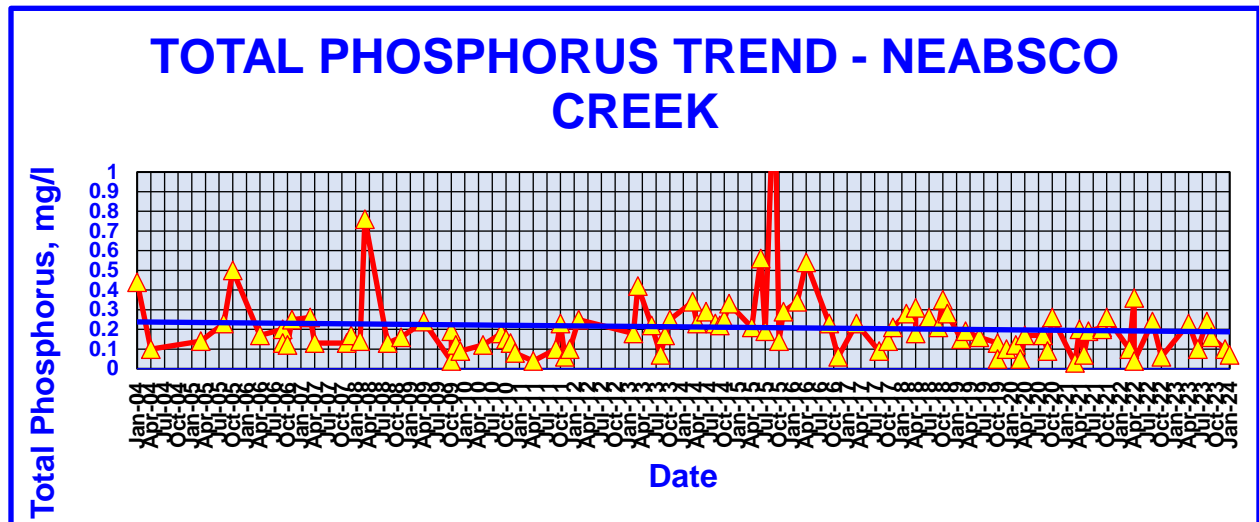
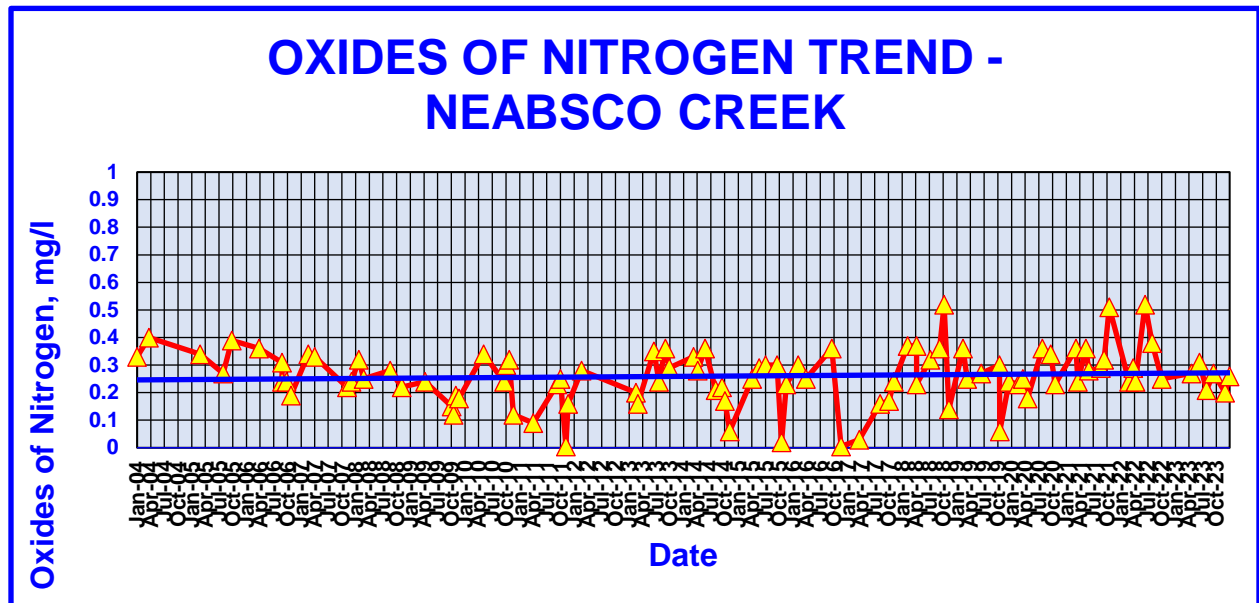
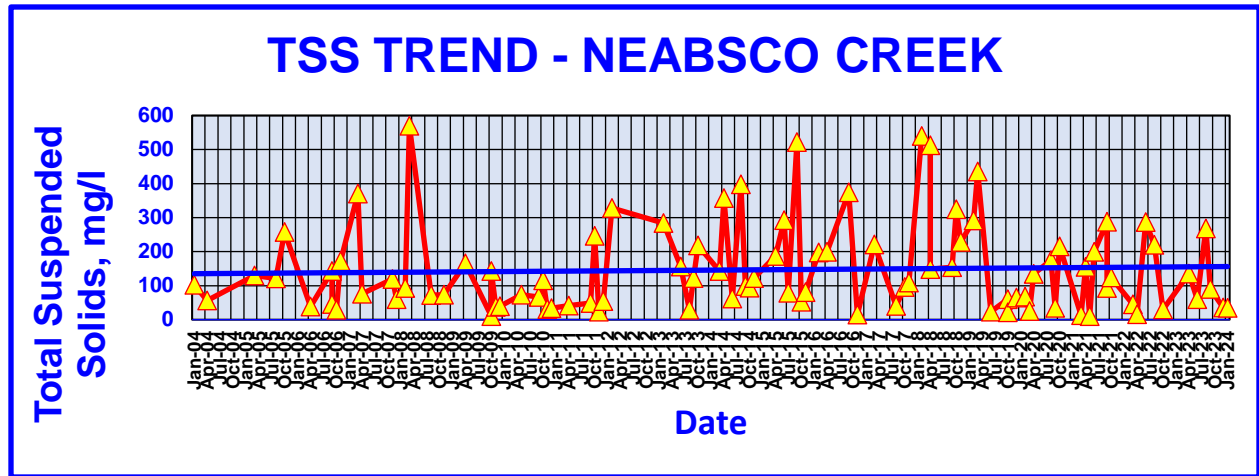
**Dawkins Branch**



# Cow Branch

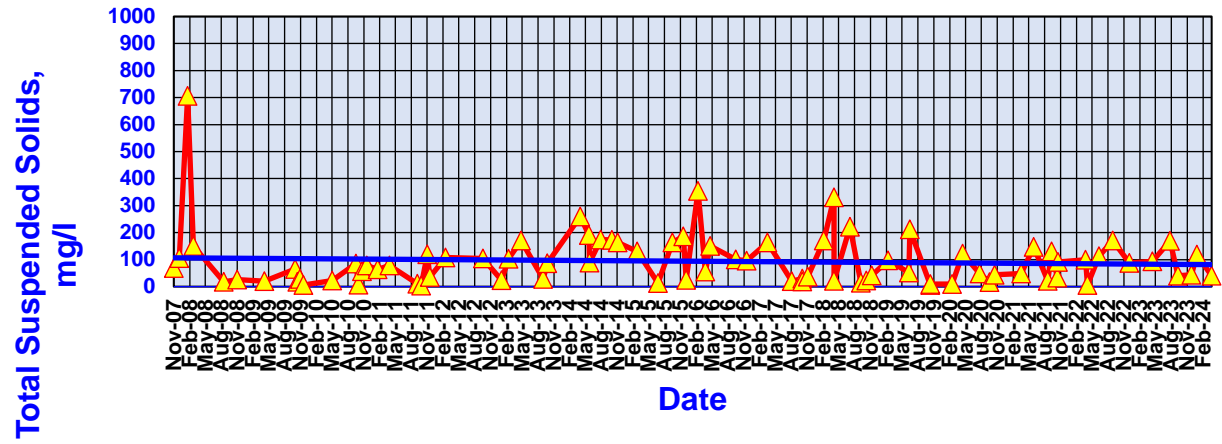


# Neabsco Creek

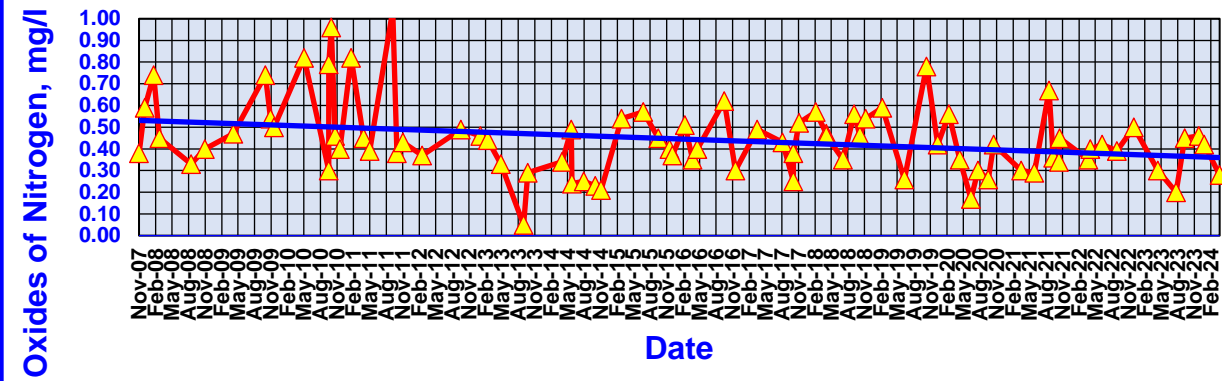


# Bull Run

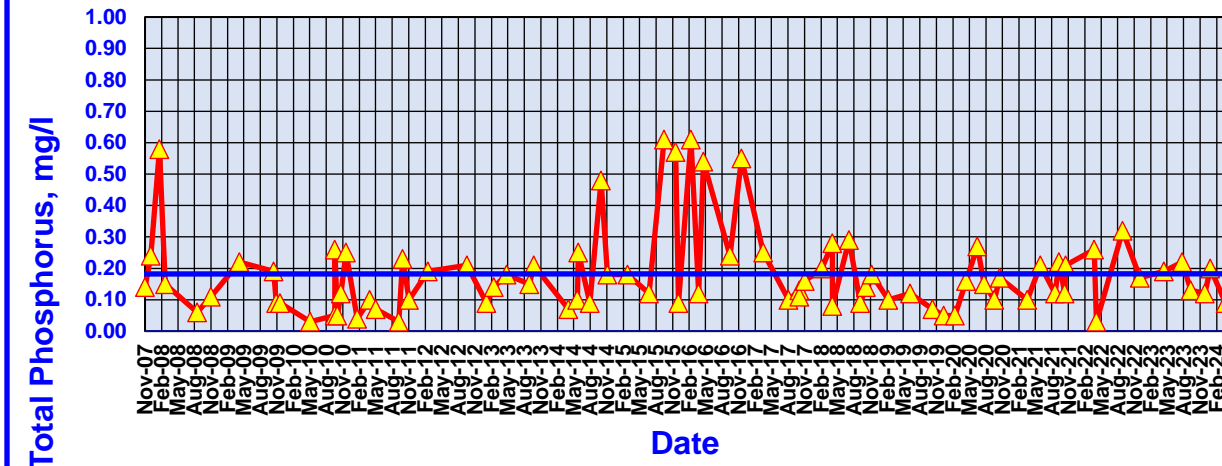
## TSS TREND - BULL RUN



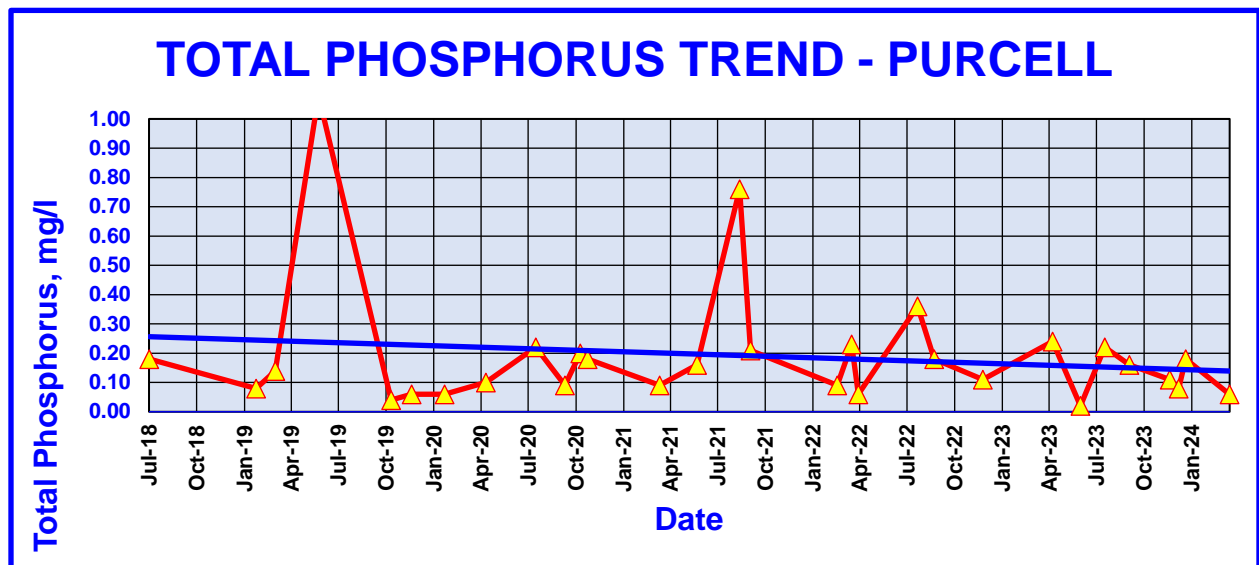
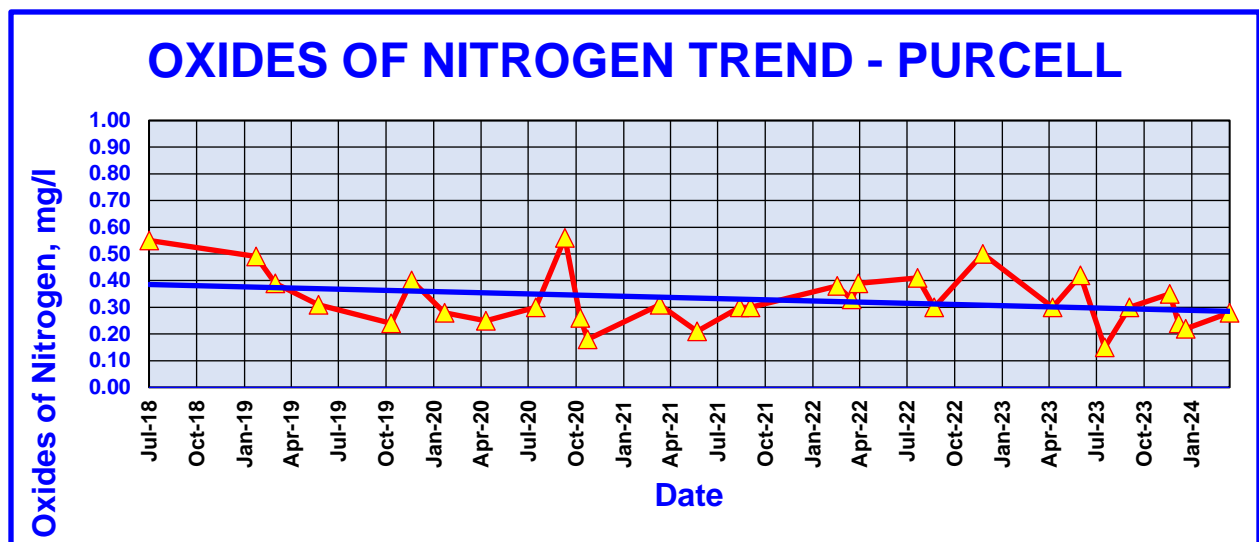
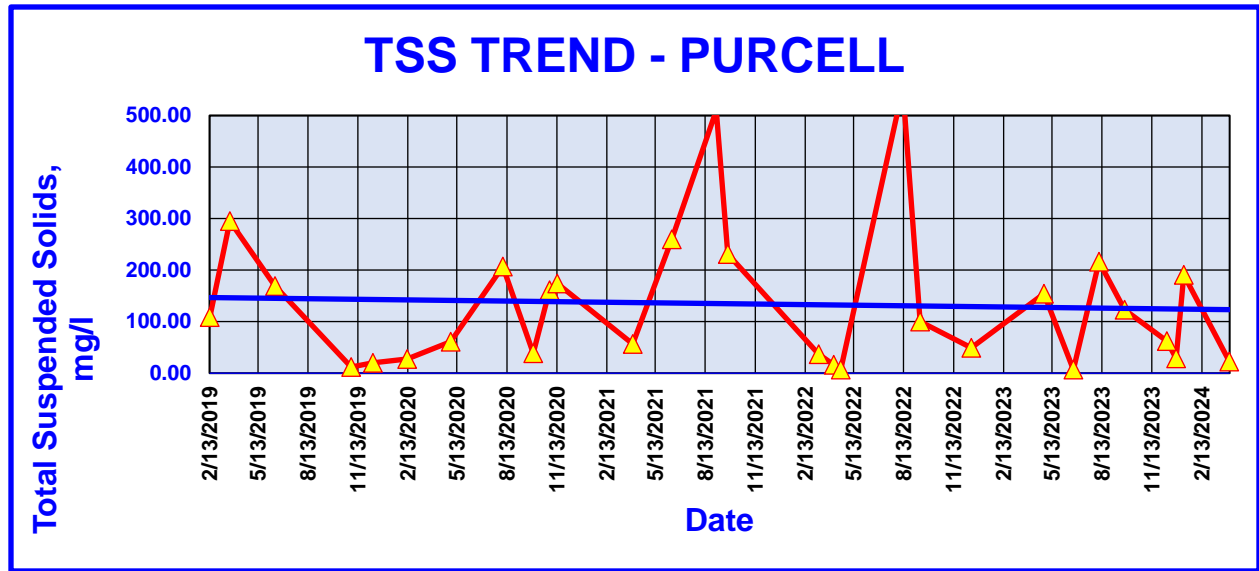
## OXIDES OF NITROGEN TREND - BULL RUN



## TOTAL PHOSPHORUS TREND - BULL RUN



# Purcell



## **Appendix R**

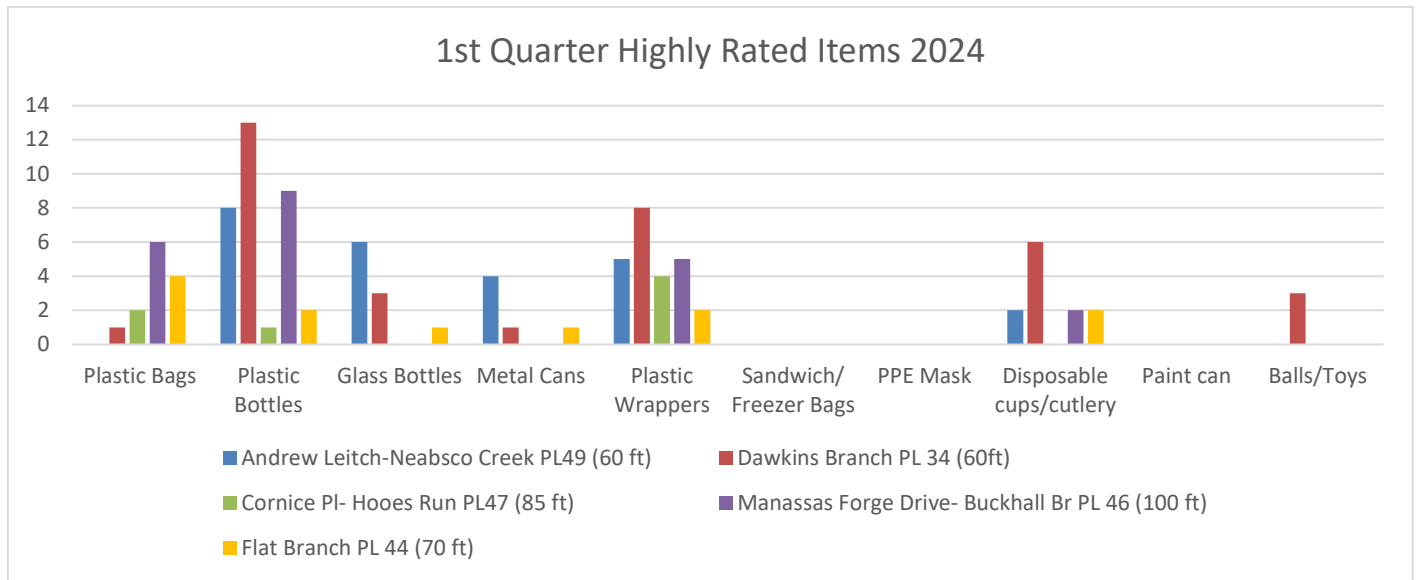
### **Floatables Monitoring Report**

## Prince William County Floatable Survey

### 2023-2024 Fiscal Year Report

#### Phase I.

Figure 1. Top on the list of floatable Items collected during the 1<sup>st</sup> Quarter - Plastic Bottles



In the first Quarter of floatable monitoring, many plastic bags, bottles, wrappers, and disposable cups/cutlery were observed at all five sites. The Dawkin’s Branch and Manassas Forge sites dominated in floatable debris, while the Cornice Place site had the least monitored floatable debris.

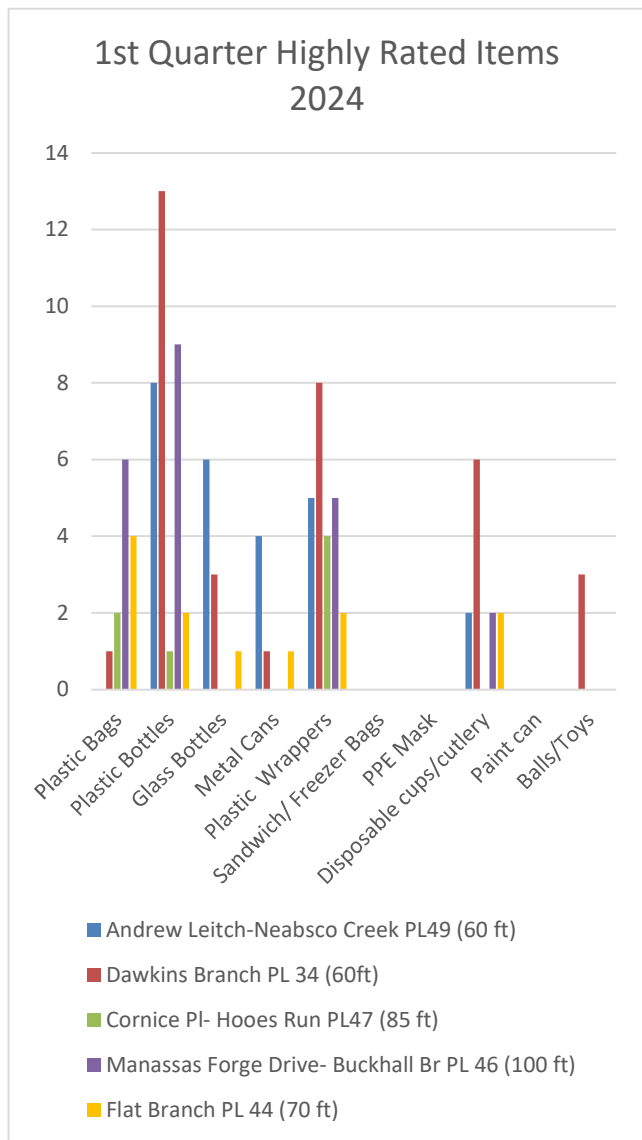
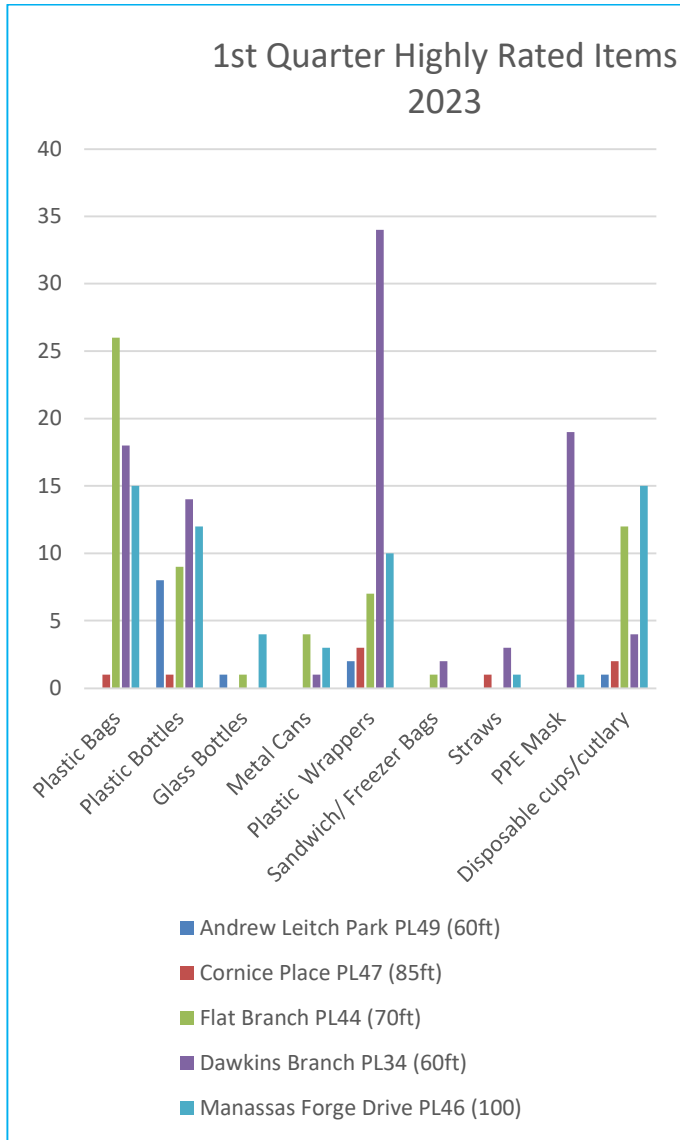
#### Comparing 1<sup>st</sup> Quarter of 2023 and 2024 Fiscal year

Comparing this 2024 report to 2023, which had plastic bags as the most occurring item at the monitoring sites, this 2024 report has registered plastic bottles as the most dominant item, followed by plastic wrappers.

Compared to the 2023 report, where PPE items occurred in significant numbers, in this 2024 phase, PPE items were almost absent, but with a considerable increase in the number of toys (balls)

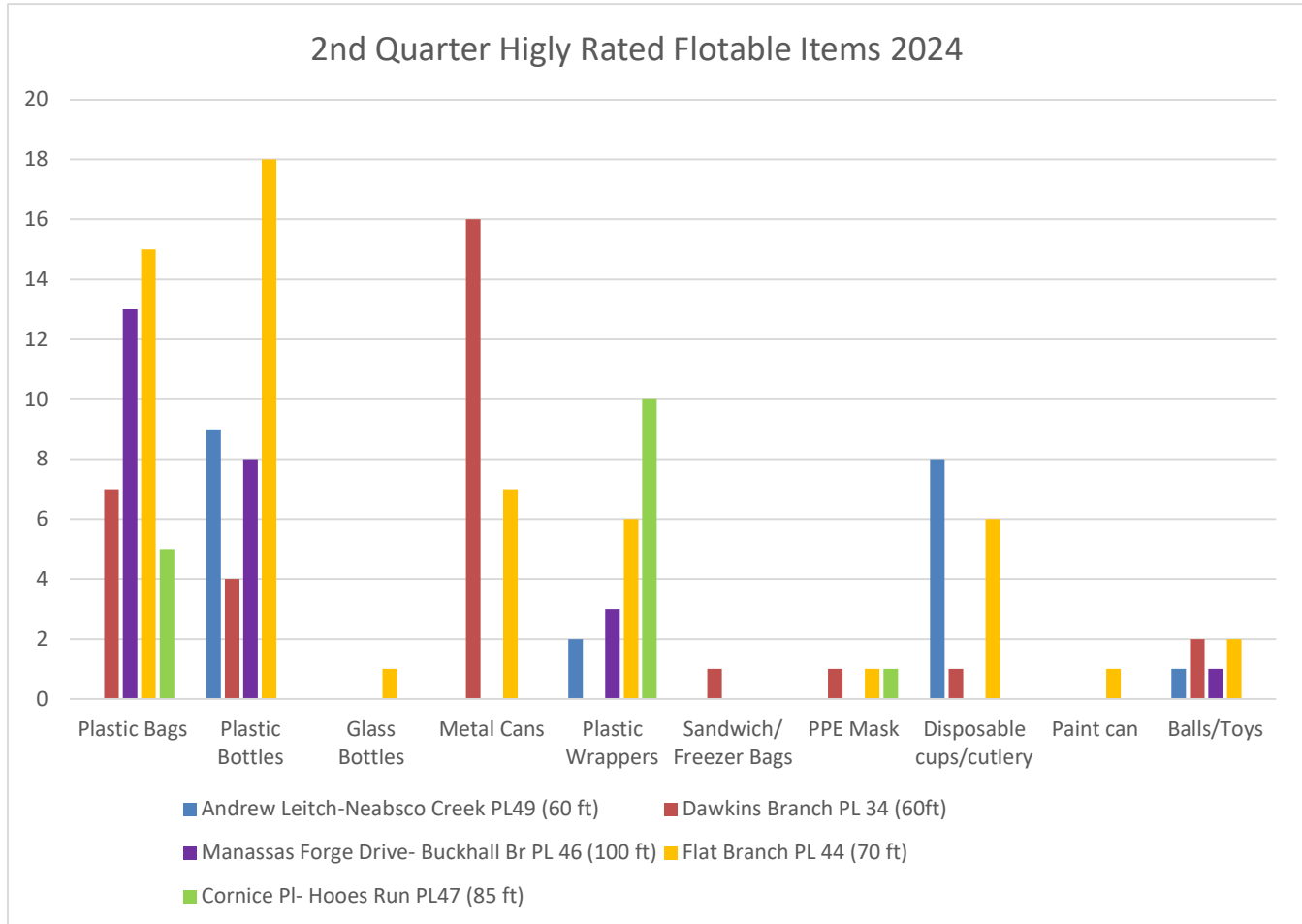


Figure 1a. Comparing 2023 and 2024



**Phase II.**

*Figure 2. Top on the list of Floatable Items collected during the 2nd Quarter: Plastic bottles and bags*



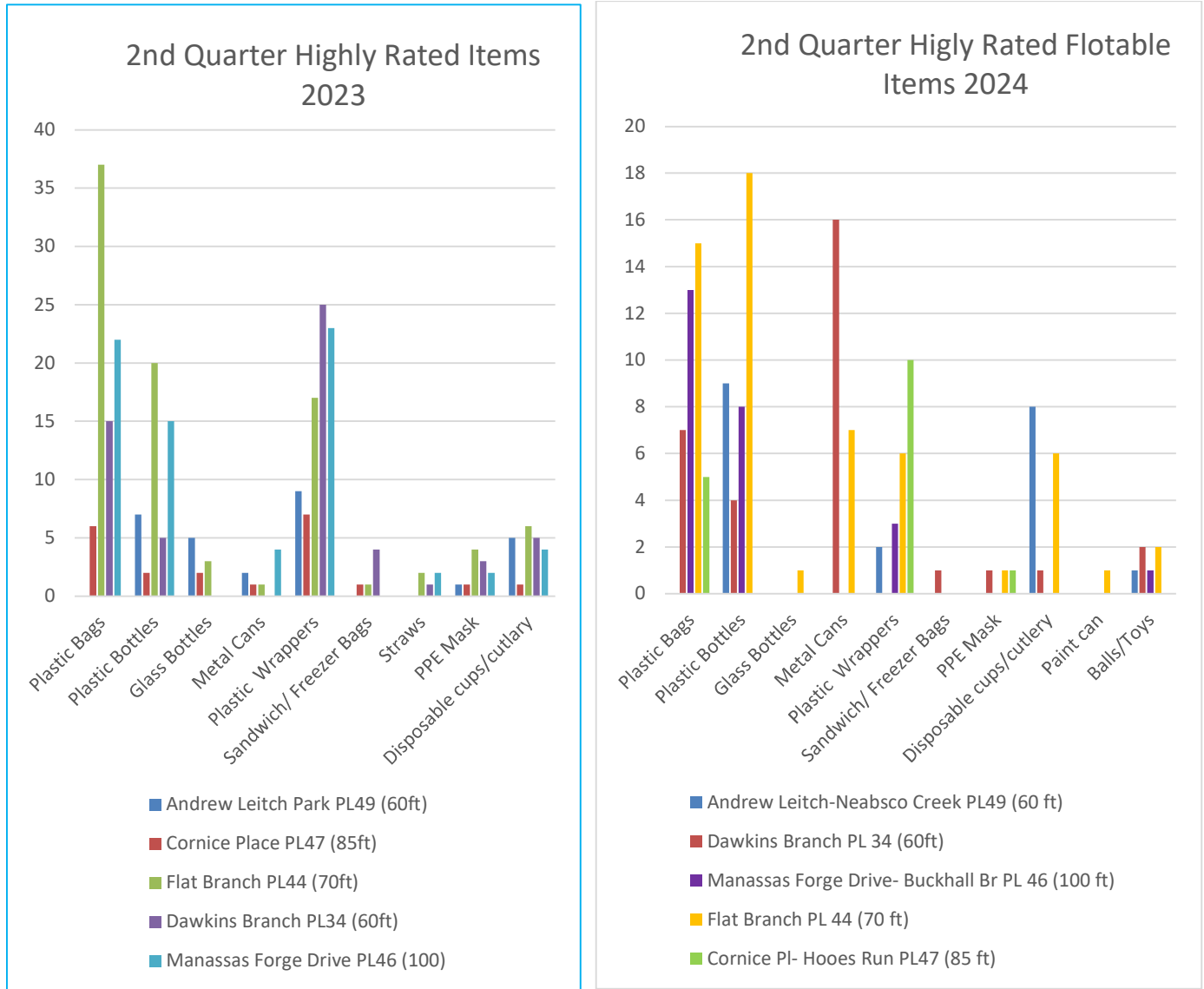
The second Quarter of 2024 saw increased plastic bags, bottles, and wrappers as the most dominant items at all monitoring sites, a widespread trend.

**Comparing the 2nd Quarter of 2023 and 2024 Fiscal year**

In 2023, disposable food items were significant, but in 2024, PPE was absent, with a significant occurrence of toys at all five sites.

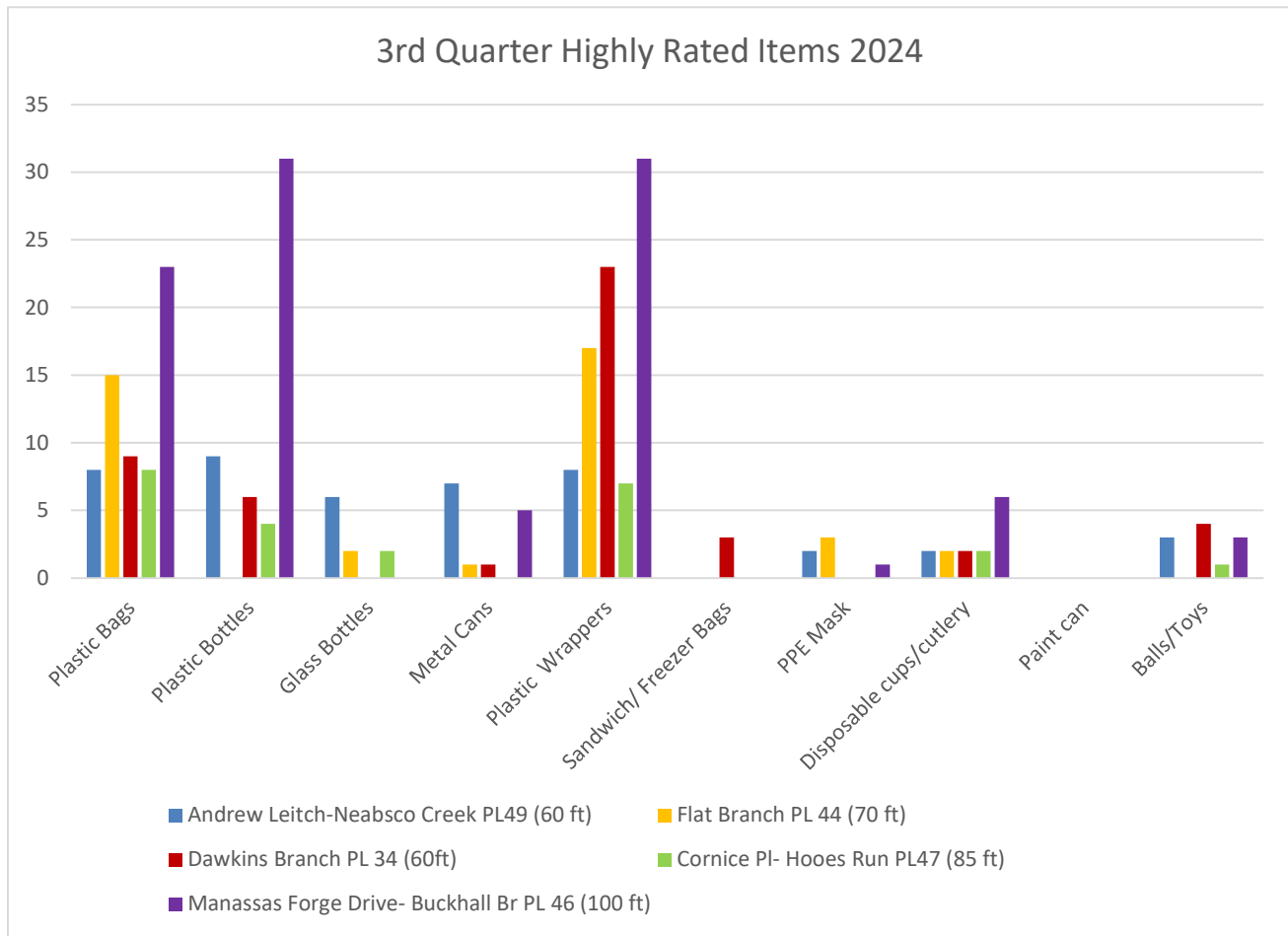
Overall, the trend in 2024 was similar to that of 2023. The Flat Branch site was dominant in floatable materials. Dawkin’s Branch registered a significantly higher number of metal cans than the other sites.

Figure 2a. Comparing 2023 and 2024



### Phase III

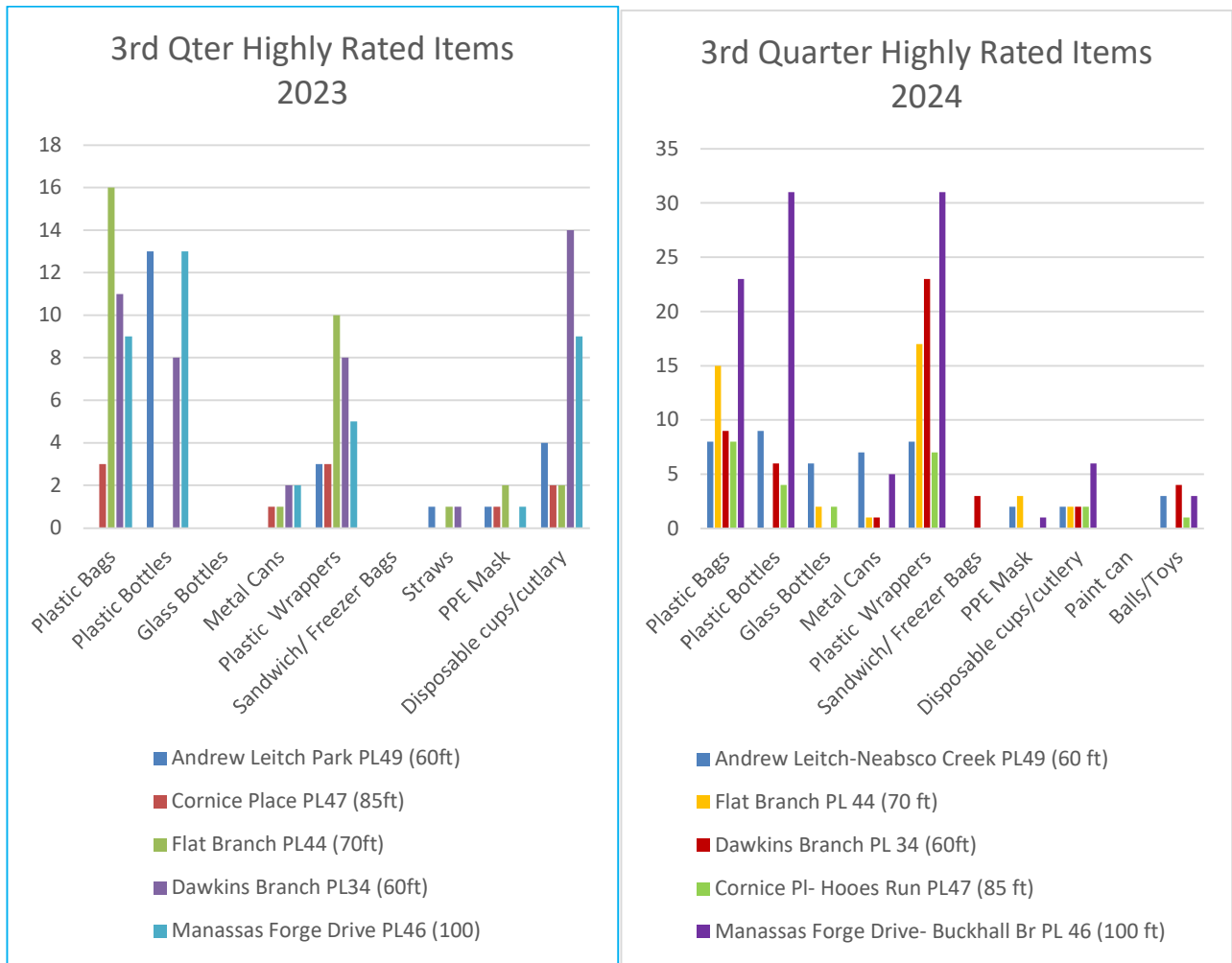
Figure 3. Top on the list of Floatable Items collected during the 3rd Quarter are Plastic wrappers, Plastic bottles, and Plastic bags.



In the third Quarter of 2024, Manassas Forge site registered the highest number of plastic bags, bottles, wrappers, and disposable cups/cutlery. These were the dominant items collected at all the sites. Although PPE was observed at Dawkin’s Branch and Flat Branch sites, toys were again observed during this monitoring phase, which was significant. This also saw a decline in the number of disposable food items.

**Comparing 3<sup>rd</sup> Quarter of 2023 and 2024 Fiscal year**

Figure 3a. Comparing 2023 and 2024

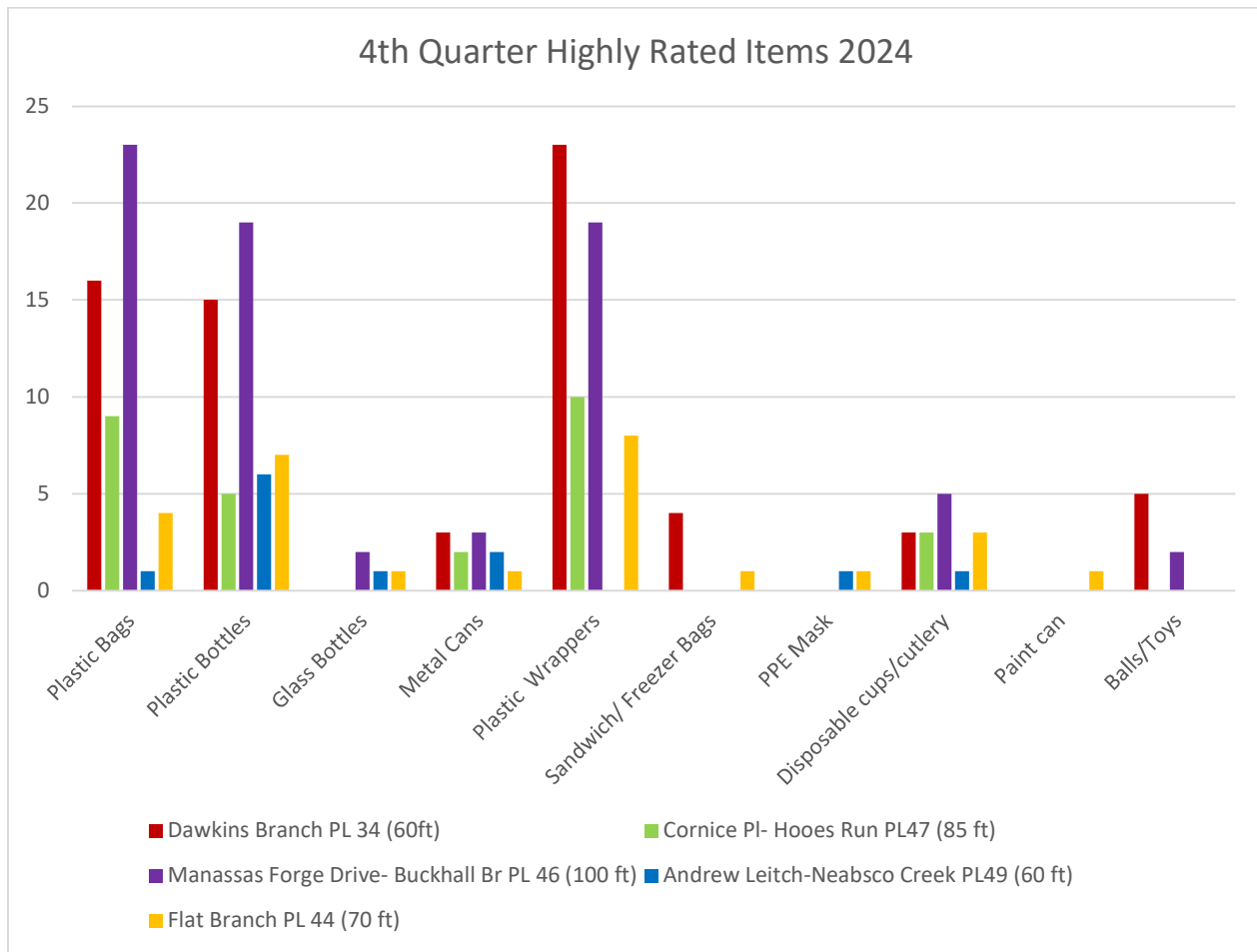


Comparing the third Quarter of 2023 to 2024, plastic bottles, wrappers, and bags were significantly high at all five sites in both years. This has also been a common trend in the past years during this monitoring phase.

Manassas Forge registered the highest number of floatable items, followed by Flat Branch and Dawkin’s Branch sites. This phase also showed the presence of toys and a decline in PPE, which signifies a decline in the COVID-19 pandemic.

### PHASE IV

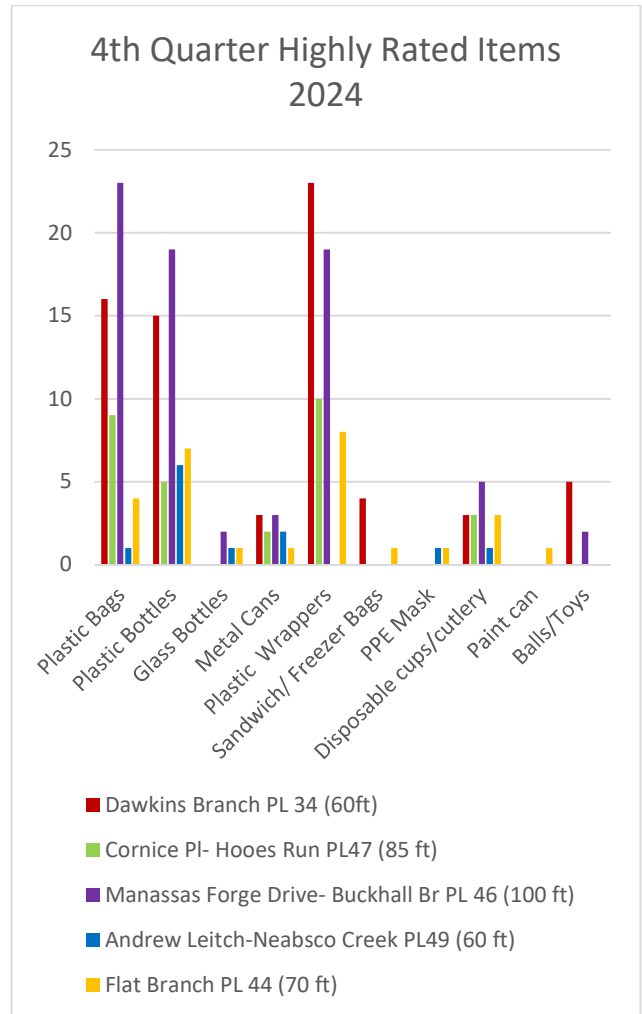
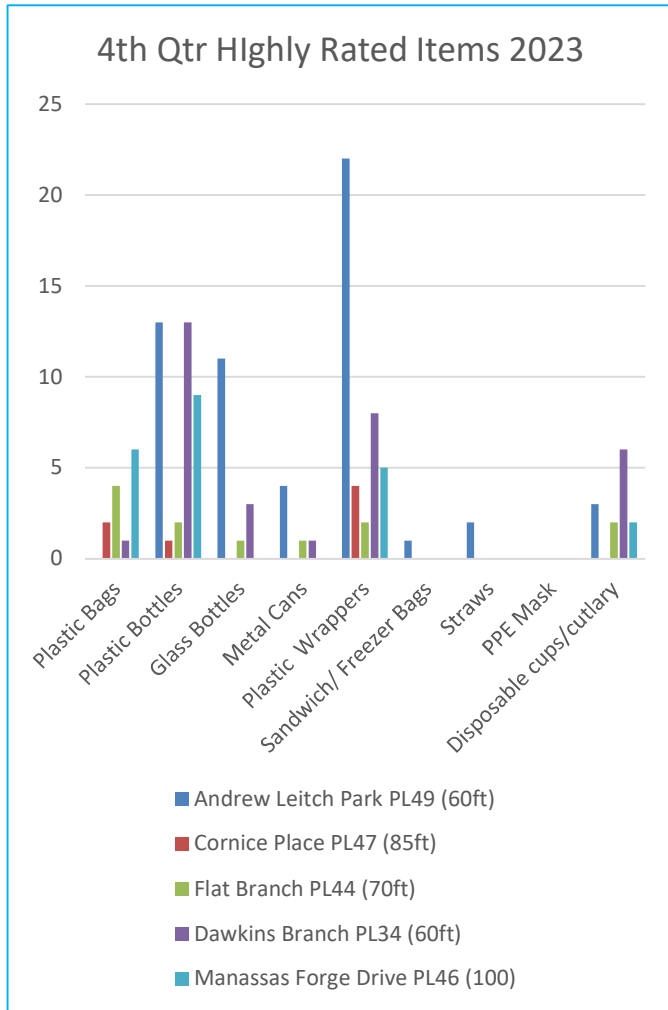
Figure 4. Top on the list of Floatable Items collected during the 4th Quarter: Plastic wrappers, Plastic bottles, and Plastic bags.



In the fourth Quarter of 2024, plastic wrappers, plastic bottles, and plastic bags were the most dominant floatable items at all the monitoring sites. Although plastic bags, plastic bottles, and plastic wrappers were the dominant items, the number of plastic bags registered at all the sites increased in 2024 compared to 2023. Metal cans and disposable food items were also significant at all the sites.

**Figure 4a. Comparing the 4th Quarter of 2023 and 2024 Fiscal year**

Comparing 2023 data to 2024 data, plastic wrappers were the most common item registered at all the sites. However, plastic bottles and bags were significant, a common trend for all the sites in previous years.





## General Analysis of Floatable Items Collected in 2024

### PHASES

This report covers five sites that are monitored quarterly on plastic floatable items: Phase I (July 2023 to September 2023), Phase II (October 2023 to December 2023), Phase III (January 2024 to March 2024), and Phase IV (April 2024 to June 2024).

The data for 2024, like the previous years, have presented the floatable items that are dominant in local waterways in Prince William County. Compared to the 2023 data, while plastic wrappers maintained the 1st position in 2024, plastic bottles moved to the 2nd position, displacing plastic bags to the 3rd position was in the second position in 2023,

In 2024, many toys were noticed instead of Personal Protective Equipment (PPE) used during the COVID-19 pandemic. PPW was high between 2020 and 2023, the high pandemic era. The increase in toys and decrease in PPE in 2024 indicates that with a decline in COVID-19 cases, many people, especially kids, spend time outdoors to playing with these toys, which eventually end up in local waterways. This was a very significant observation that was registered at all the sites.

Overall, the 2024 monitored items under the Prince William County Floatable Monitoring can be rated as shown by the table below.

<b>Items</b>	<b>Rating (Top 10 items)</b>	<b>Comments/Field Observation</b>
<b>Plastic Wrappers</b>	<i>1<sup>st</sup> Position</i>	<i>Most dominant of all types. Snack wrappers are significant overall.</i>
<b>Plastic Bottles</b>	<i>2<sup>nd</sup> position</i>	<i>Dominated by plastic water bottles followed by beverage bottles.</i>
<b>Plastic bags</b>	<i>3<sup>rd</sup> Position</i>	<i>Very high, especially the T-shirt bags from different businesses</i>
<b>Disposable food items</b>	<i>4<sup>th</sup> Position</i>	<i>Significantly high and branded</i>
<b>Metal Cans</b>	<i>5<sup>th</sup> Position</i>	<i>Significant; mostly beverage cans</i>
<b>Toys</b>	<i>6<sup>th</sup> Position</i>	<i>A very significant observation relating to the post COVID 19 Pandemic era</i>
<b>Glass Bottles</b>	<i>7<sup>th</sup> Position</i>	<i>Significant: mostly broken bottles</i>
<b>Personal Protective Equipment (PPE)</b>	<i>8<sup>th</sup> Position</i>	<i>A very significant observation relating to the post COVID 19 Pandemic era</i>
<b>Sandwich/Freezer bags</b>	<i>9<sup>th</sup> Position</i>	<i>Significant</i>

Table 1. The trend of floatable items in Prince William County’s Waterways.



## Conclusion

This data shows that plastic wrappers, bottles, and bags are the most collected items in local waterways. The positions of these items may change in the assessment table, but they remain dominant. This, therefore, calls for more support in the efforts to help address the issue of littering and the adverse effects plastic has on humans and other organisms, especially that of “forever chemicals.”

Monitoring floatable plastic items helps to present meaningful results to address water quality and pollution challenges.

The overall floatable load collected in waterways under this Program in 2024 shows a decline compared to the past years. This general trend has been noted in different cleanup locations under the Adopt-A-Stream/Pond Program. This shows Prince William County is making significant progress in promoting clean water and waterways for future generations. This can be seen in the number of people and groups participating in the Adopt-A-Stream/Pond/ River program under the Prince William Soil and Water Conservation District.

The interplay of PPE items and toys in this 2024 report shows the power of monitoring and scientific data to help influence decision-making. This also means Prince William County is leading in promoting clean waterways: the Clean Virginia Waterways Program notes that Prince William County’s Floatable Monitoring Program is outstanding.

Therefore, there is a great need for more community engagement around clean water to help promote the County’s Green Community goals. This will help change societal behavior around littering in Prince William County.

These efforts to tackle plastic pollution help reduce marine debris. This promotes clean water awareness and upholds human health. Above all, these efforts also promote and protect biodiversity in the Chesapeake Bay and its watersheds.



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### **Some recommendations:**

- Schools and the community need more education on the harmful effects of plastic items on water quality in waterways. This will help create more awareness and prevent littering, a big problem in suburban communities like Prince William County.
- Fines should be enforced for littering, especially by car and highway users. This will help change social behavior on littering.

## **Appendix S**

### **Chesapeake Bay TMDL Reductions Summary**

## Chesapeake Bay Watershed TMDL

Prince William County submitted the required Chesapeake Bay TMDL Action Plan (TMDL Action Plan) on December 16, 2016, which was subsequently approved on June 28, 2017. The TMDL Action Plan documents how the County intends to meet the requirements of the Chesapeake Bay Special Condition included in the MS4 Permit.

In Section I.D.1, Chesapeake Bay Special Condition, the County is required to document the means and methods that will be utilized to meet the required reductions of specific Pollutants of Concern (POCs) allocated in the Special Condition of the Commonwealth of Virginia's Phase I and II Chesapeake Bay Total Maximum Daily Load (TMDL) Watershed Implementation Plans (WIPs). These reductions are based on the Level 2 (L2) scoping run of the Chesapeake Bay Watershed Model for existing developed lands (pervious and impervious regulated urban lands developed prior to July 1, 2009). Level 2 implementation equates to an average reduction of 9% of nitrogen loads, 16% of phosphorous loads, and 20% of sediment loads from impervious regulated areas and 6% of nitrogen loads, 7.25% of phosphorous loads, and 8.75% of sediment loads from pervious regulated acres beyond the 2009 progress run loadings.

As part of this effort, Virginia Department of Environmental Quality (VADEQ) has committed to a phased approach for MS4 permittees to implement necessary reductions. Permittees will have up to three, five-year permit cycles to achieve required reductions. Prince William County's first permit cycle (December 17, 2014 – December 16, 2019) represents implementation of 5% of the L2 as specified in the 2010 Phase I WIP. The second permit cycle will require an additional 35% of total L2 reductions (40% cumulative), while the final permit cycle will require implementation of the remaining 60% of reductions (100% cumulative).

The total reductions planned to be achieved during the first permit cycle, as identified in the approved Action Plan, are listed in Table 1. The table also identifies the percentage of the L2 scoping run reductions that will be achieved after implementation of the Action Plan.

**Table 1 - Planned Reductions per Approved Action Plan**

<b>Pollutant of Concern</b>	<b>Planned 1st Permit Cycle Load Reductions (lbs/yr)</b>	<b>Percentage of L2 Reduction Achieved After Implementation</b>
<b>Total Nitrogen (TN)</b>	6,706.58	33.5%
<b>Total Phosphorus (TP)</b>	1,370.40	62.0%
<b>Total Suspended Solids (TSS)</b>	893,286.63	49.4%

Prince William County has a comprehensive watershed improvement program, which aims to improve water quality through the implementation of water quality improvement projects such as stormwater facility retrofits, stream restorations, and reforestation projects.

During the reporting period, construction of Powells Creek Phase 2 stream restoration commenced and is scheduled to be completed in 2024.

Based on the reductions achieved through implementation of the water quality improvement projects identified in the approved Action Plan, Table 2 summarizes the cumulative progress toward meeting the compliance targets. The permit requires that 5% of the L2 reductions be achieved during the first permit cycle. As shown in the table below, this requirement has been exceeded and additional reductions will be applied toward the next permit cycle required reductions.

**Table 2 - Cumulative Progress Toward Meeting Compliance Targets**

Pollutant of Concern	Previous Reductions Achieved (lbs/yr)	FY20 Reductions (lbs/yr)	Total Reductions to Date (lbs/yr)	Percent of L2 Reduction Achieved to Date
<b>Total Nitrogen (TN)</b>	7,391.31	249.49	7,640.80	38.12%
<b>Total Phosphorus (TP)</b>	1,528.93	105.12	1,634.05	73.97%
<b>Total Suspended Solids (TSS)</b>	857,916.96	426,147.42	1,284,064.38	71.07%

During the next reporting period, two projects are planned for implementation. Please refer to Table 3 for the pollutant reductions associated with this project.

**Table 3 - Planned Projects for FY24 Implementation**

Project Name	Project Type	TN Reduction (lbs/yr)	TP Reductions (lbs/yr)	TSS Reduction (tons/yr)
<b>SWM Facility #416</b>	Retrofit	284.51	35.84	13.81
<b>Powells Creek Phase 2</b>	Stream	270.94	245.65	81.07
<b>Total</b>		<b>555.45</b>	<b>281.49</b>	<b>84.88</b>

Prince William County has received nutrient and sediments credits from both UOSA and PWCSA. The County is reporting these credits as a “Reserve” and the credits have not counted towards required deductions.

FY22 Report-Stream Restoration: Stream Restoration Projects Beginning July 1, 2009

WMB Number	Project Name	Status	Installation FY	Latitude	Longitude	Length	Pollutant Removal Rate	Physiographic Province	Estimated Total Pollutant Reduction (lbs/yr)			Percent Unregulated Area	Baseline Adjustment for Unregulated Areas (lbs/yr)			Total Pollutant Reduction Achieved After Baseline Adjustment (lbs/yr)		
									TN	TP	TSS		TN	TP	TSS	TN	TP	TSS
<b>Completed Projects</b>																		
76	Cow Branch Phase I	Completed	2011	38.62637	-77.27779	1,600	Interim Approved	Coastal Plain	120	108.8	24,208.00	36%	613.55	88.90	77,864.74	77.38	70.16	15,609.85
78	Cow Branch Phase II	Completed	2012	38.63309	-77.27754	1,086	Interim Approved	Coastal Plain	81.45	73.848	16,431.18	37%	533.87	77.39	67,792.77	51.44	46.64	10,377.70
81	Lower Cabin Run	Completed	2012	38.55637	-77.31275	1,073	Interim Approved	Coastal Plain	80.475	72.964	16,234.49	3%	5.42	0.57	463.86	78.40	72.39	15,815.83
11	Northgate	Completed	2013	38.60703	-77.32944	300	Interim Approved	Piedmont	22.5	20.4	13,464.00	19%	1,084.44	100.84	77,953.88	18.31	16.60	10,954.81
82	Deerfield Estates	Completed	2013	38.72890	-77.41942	225	Interim Approved	Piedmont	16.875	15.3	10,098.00	5%	2.40	0.25	204.70	16.10	15.05	9,893.30
79	Cow Branch III	Completed	2015	38.63026	-77.27800	1,000	Interim Approved	Coastal Plain	75	68	15,130.00	39%	604.15	87.75	76,896.67	45.88	41.60	9,255.93
268	Oak Street	Completed	2015	38.78353	-77.43967	200	Interim Approved	Piedmont	15	13.6	8,976.00	80%	232.74	23.42	18,609.81	3.02	2.74	1,806.18
43	Hylbrook Park	Completed	2016	38.65086	-77.26413	1,268	Interim Approved	Coastal Plain	95.1	86.224	19,184.84	27%	67.25	8.06	6,752.78	68.99	78.16	13,918.49
49	East Longview - Route 1 Restoration	Completed	2017	38.64522	-77.26070	925	Interim Approved	Coastal Plain	69.375	62.9	13,995.25	68%	95.00	11.94	10,119.16	22.52	50.96	4,543.39
100	Dewey's Creek Reach 4	Completed	2017	38.56467	-77.31045	400	Interim Approved	Coastal Plain	30	27.2	6,052.00	29%	342.39	38.66	31,845.39	21.20	19.22	4,276.94
158	Reach 5	Completed	2017	38.68478	-77.29637	2,100	Interim Approved	Piedmont	157.5	142.8	94,248.00	12%	10.24	1.25	1,056.83	147.26	141.55	93,191.17
102	Dewey's Creek Reach 1	Completed	2018	38.57572	-77.31094	1,270	Protocols	Coastal Plain	180	66	19,200.00	28%	277.11	32.85	27,422.95	68.35	61.97	13,788.21
99	Dewey's Creek Reach 2	Completed	2020	38.56572	-77.30986	4,865	Protocols	Coastal Plain	956	353	102,800.00	29%	334.00	38.01	31,377.59	622.00	314.99	71,422.41

FY22 Report - SWM Retrofits: Stormwater Facility Retrofits Beginning July 1, 2009

WMB Number		Status	Installation FY	Latitude	Longitude	BMP Practice	Area Treated (Ac)	Impervious Area (Ac)	Pervious Area (Ac)	Forested Area (Ac)	Calculation Method	Estimated Total Pollutant Reduction (lbs/yr)			Percent Unregulated Area	Baseline Adjustment for Unregulated Area (lbs/yr)			Total Pollutant Reduction Achieved after Baseline Adjustment (lbs/yr)		
												TN	TP	TSS		TN	TP	TSS	TN	TP	TSS
<b>Completed Projects</b>																					
1	SWM Facility #257	Completed	2010	38.70846	-77.42804	Extended Detention	4.28	1.09	1.91	1.28	CBP Established Efficiency, Incremental	7.33	0.35	223.44	13.52%	0.53	0.06	52.90	6.80	0.29	170.54
21	Pond 51 - Hammill Mill Park SWMF	Completed	2011	38.66706	-77.26875	Extended Detention	7.13	2.10	2.76	2.27	CBP Established Efficiency, Incremental	12.41	0.63	406.44	3.06%	0.21	0.03	21.60	12.20	0.60	384.84
23	SWM Facility #154 - Dawson Ridge	Completed	2011	38.64959	-77.26743	Extended Detention	6.48	2.44	2.89	1.15	CBP Established Efficiency, Incremental	12.60	0.69	449.74	9.17%	0.61	0.08	69.64	11.99	0.61	380.09
24	SWM Facility #157 - Dawson Ridge	Completed	2011	38.64802	-77.26509	Extended Detention	4.86	1.56	1.46	1.83	CBP Established Efficiency, Incremental	8.38	0.44	290.67	7.23%	0.36	0.05	40.57	8.03	0.39	250.11
83	SWM Facility #363	Completed	2013	38.73062	-77.41825	Extended Detention	35.42	8.54	14.34	12.53	CBP Established Efficiency, Incremental	58.53	2.77	1,758.43	0.52%	0.18	0.02	19.30	58.35	2.75	1,739.13
129	SWM Facility #318	Completed	2013	38.56811	-77.30660	Extended Detention	17.48	3.27	9.46	4.75	CBP Established Efficiency, Incremental	28.95	1.27	763.03	0.00%	0.00	0.00	0.00	28.95	1.27	763.03
145	SWM Facility #494	Completed	2013	38.78569	-77.53199	Constructed Wetland	38.27	15.26	22.13	0.88	CBP Retrofits Expert Panel, ST, Incremental	99.20	14.00	5,442.51	5.70%	2.20	0.29	244.38	97.00	13.72	5,198.13
69	SWM Facility #77	Completed	2014	38.74038	-77.42235	Extended Detention	54.12	6.38	22.48	25.26	CBP Established Efficiency, Incremental	77.15	2.97	1,747.72	14.09%	5.89	0.55	424.59	71.26	2.42	1,323.13
85	SWM Facility #505	Completed	2014	38.56390	-77.30522	Extended Detention	16.26	4.28	7.77	4.22	CBP Established Efficiency, Incremental	28.49	1.39	872.77	3.07%	0.35	0.03	19.68	28.14	1.36	853.09
59	SWM Facility #99	Completed	2015	38.78563	-77.51022	Constructed Wetland	8.89	5.14	3.74	0.00	CBP Retrofits Expert Panel, ST, Incremental	40.20	4.84	4,319.55	81.51%	7.90	1.10	955.15	32.31	3.74	3,364.40
80	SWM Facility #98	Completed	2015	38.62455	-77.27419	Extended Detention	7.70	2.70	2.51	2.50	CBP Established Efficiency, Incremental	13.86	0.74	494.46	0.41%	0.03	0.00	3.52	13.83	0.74	490.94
169	SWM Facility #28	Completed	2017	38.68411	-77.27122	Wet Pond, L1	74.97	21.10	34.63	19.24	CBP Retrofits Expert Panel, ST, Incremental	67.40	5.81	5,409.80	8.34%	5.74	0.68	566.70	61.65	5.13	4,843.10
16	SWM Facility #147	Completed	2018	38.61010	-77.31428	Constructed Wetland, L1	45.24	15.28	24.02	5.93	CBP Retrofits Expert Panel, ST, Incremental	68.18	6.61	5,808.09	10.44%	4.17	0.47	388.79	64.01	6.14	5,419.30
173	SWM Facility #489	Completed	2018	38.68457	-77.29579	Extended Detention	82.12	32.67	36.52	12.92	CBP Established Efficiency, Incremental	162.85	9.05	5,943.86	15.04%	11.28	1.33	1,105.74	151.57	7.72	4,838.12
190	SWM Facility #109	Completed	2018	38.72093	-77.41199	Wet Pond, L1	72.52	9.79	21.94	40.78	CBP Retrofits Expert Panel, ST, Incremental	167.29	12.72	10,334.53	11.36%	7.00	0.75	611.50	160.29	11.97	9,723.03
191	SWM Facility #424	Completed	2020	38.57761	-77.30891	Constructed Wetland	92.01	39.01	41.88	11.11	CBP Retrofits Expert Panel, ST, Incremental	239.05	37.64	28,053.69	19.75%	21.34	3.14	2,763.32	217.71	31.22	25,290.37
	SWM Facility #232	Completed	2021	38.78560	-77.51020	Wet Pond	14.77	3.20	8.24	3.32	CBP Retrofits Expert Panel, ST, Incremental	47.59	4.22	3,365.39	0.00%	0.00	0.00	0.00	47.59	4.22	3,365.39

**FY22 Report - Reforestation: Reforestation Projects (LUC) Beginning July 1, 2009**

WMB Number	Project Name	Status	Installation FY	Latitude	Longitude	BMP Type	Existing Land Use	New Land Use	Area (Ac)	Total Pollutant Reduction (lbs/yr)		
										TN	TP	TSS
<b>Completed Projects</b>												
229	Innovation - Area 1D	Completed	2011	38.74008	-77.53709	Land Use Change	Pervious	Forest	0.22	1.58	0.08	29.25
233	Ben Lomond Park Area A	Completed	2012	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.15	1.07	0.06	19.94
234	Ben Lomond Park Area B	Completed	2013	38.79833	-77.47860	Land Use Change	Pervious	Forest	3.81	27.28	1.45	506.58
235	Ben Lomond Park Area C	Completed	2013	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.23	1.65	0.09	30.58
73	Sudley Place Reforestation	Completed	2014	38.79188	-77.50187	Land Use Change	Pervious	Forest	3.17	22.70	1.20	421.48
236	Ben Lomond Park Area D	Completed	2015	38.79833	-77.47860	Land Use Change	Pervious	Forest	0.12	0.86	0.05	15.96
5	Hope Hill Crossing	Completed	2015	38.61801	-77.37752	Land Use Change	Pervious	Forest	5.09	36.44	1.93	676.77
237	Garner Drive	Completed	2016	38.78738	-77.50875	Land Use Change	Pervious	Forest	0.40	2.86	0.15	53.18
258	Hunter Ridge Estates Area A	Completed	2016	38.63727	-77.38444	Land Use Change	Pervious	Forest	5.65	40.45	2.15	751.22
269	Hunter Ridge Estates Area B	Completed	2017	38.63427	-77.38747	Land Use Change	Pervious	Forest	4.75	34.01	1.81	631.56
231	Bristoe Station Battlefield Phase 1	Completed	2017	38.72238	-77.54464	Land Use Change	Pervious	Forest	13.99	100.17	5.32	1,860.11
270	Bristoe Station Battlefield Phase 2	Completed	2018	38.72238	-77.54464	Land Use Change	Pervious	Forest	4.50	32.22	1.71	598.32
	Bristoe Station Battlefield Phase 3	Completed	2021	38.72238	-77.54464	Land Use Change	Pervious	Forest	10.20	73.03	3.88	1,356.19



## **Appendix T**

### **Local TMDL Action Plan Implementation**

## Local TMDL Action Plan Implementation FY24

### Benthic TMDL Action Plan

The Benthic TMDL Action Plan includes stream restoration projects, reforestations (LUC), stormwater retrofit projects completed in the Bull Run Watershed. The following table summarizes the projects that have been implemented as well as planned projects in FY22.

Project Name	Project Type	Status	TSS Reduction (lbs/yr)
Ben Lomond Park Area A	Reforestation	Completed	19.94
Ben Lomond Park Area C	Reforestation	Completed	30.58
Ben Lomond Park Area B	Reforestation	Completed	506.58
Sudley Place Reforestation	Reforestation	Completed	421.48
Ben Lomond Park Area D	Reforestation	Completed	15.96
Garner Drive	Reforestation	Completed	53.18
SWM Facility #99	Retrofit	Completed	4,273.97
Oak Street	Stream Restoration	Completed	49,591.16
SWM Facility #77	Retrofit	Completed	1,323.13
SWM Facility #386	Retrofit	Completed	8,314.92
<b>Total Completed</b>			<b>64,550.90</b>
SWM Facility #416	Retrofit	Implementation	27,611.25
Ben Lomond Reforestation (LUC)	Reforestation	Implementation	425.47
<b>Total Planned for FY24</b>			<b>28,036.72</b>

The status of other implementation items from the Benthic TMDL Action Plan are summarized below:

Implementation Item	Description	Implementation Status
MS4 Program Plan	The County will continue to implement the MS4 Program Plan, including elements related to sediment, in accordance with the schedule provided for in the MS4 Program Plan.	The County continues to implement its MS4 Program Plan.
Chesapeake Bay TMDL Action Plan	The County will continue to leverage the projects selected to meet the Chesapeake Bay TMDL Action Plan to reduce sediment in the Bull Run watershed. The County will include whether a project will help meet Bull Run sediment load reductions in its project selection prioritization process.	The County continues to implement the Chesapeake Bay TMDL Action Plan. See above summary.
County Owned or Operated Property	The County will consider potential retrofits of property assessed in Appendix A for inclusion in lists of projects to meet the Chesapeake Bay TMDL. The County will address minor erosion issues identified during the assessment of properties as described in Appendix A.	Projects currently planned for implementation: <ul style="list-style-type: none"> <li>• Reforestation at Ben Lomond Park</li> <li>• Water quality retrofit of SWM Facility #416</li> <li>• Mayhew Park Stream Restoration</li> </ul>

**Local TMDL Action Plan Implementation FY24**

<b>Implementation Item</b>	<b>Description</b>	<b>Implementation Status</b>
Redevelopment	The County will continue to enforce provisions that require redevelopment to reduce phosphorus from existing conditions (20% one acre and greater; 20% less than one acre). Reductions in phosphorus also result in reductions in sediment.	The county continues to implement Section 23.2 of the Prince William County Code.
Enhanced Education, Outreach, and Training	The County will continue to implement enhanced education, outreach, and training for sediment in accordance with the MS4 permit and the MS4 Program Plan.	The County is implementing its enhanced education, outreach and training for sediment in accordance with the MS4 Program Plan

## Local TMDL Action Plan Implementation FY24

### Bacteria TMDL Action Plan

The status of implementation items from the Bacteria TMDL Action Plan are summarized below:

Program Element	Description	Implementation Status
Pet Waste Brochure Distribution	The County will provide pet waste brochures (see Appendix A) for distribution at the private facilities listed in Table 2.H.	The County determined that distribution of brochures at private facilities is not an effective method of outreach. In FY21, the County updated the pet waste brochure and is distributing to HOA's and other community partners for distribution.
Pet Waste Clean-Up Signage	The County will assess the trail system within the MS4 portion of affected watersheds for opportunities to install signage reminding pet owners to clean up pet waste.	The County assessed County-owned properties in FY18 and determined no need for signage. The assessment of County properties was repeated in FY21 with HOA common areas added to the scope. The County is currently evaluating opportunities to work with HOA's and Parks to provide signage and other outreach materials to users.

## Local TMDL Action Plan Implementation FY24

### PCB TMDL Action Plan

The status of implementation items from the PCB TMDL Action Plan are summarized below:

<b>Implementation Item</b>	<b>Description</b>	<b>Implementation Status</b>
Enhanced training on good housekeeping and pollution prevention practices	Training materials will be revised in PY3 to include information relevant to potential PCB sources and steps to take if a source of PCBs is discovered at a County-owned property. The training will be implemented in PY4 as part of the ongoing biennial training program.	The online PWC University training materials were revised in FY22 to include information related to sources of PCB discharges.
Enhanced training on recognition and reporting of illicit discharges by field personnel	The County's Illicit Discharge Identification and Elimination Program Manual will be updated in PY3 to include information on potential sources of PCBs, safety precautions and notifications.	The Illicit Discharge Identification and Elimination Program Manual was revised in FY22 to include information related to sources of PCB discharges.

## **Appendix U**

### **Roles and Responsibilities**

**Prince William County FY24 Annual Report  
Roles and Responsibilities (I.A.2)**

<b>Agency</b>	<b>Permit Section</b>	<b>Responsibilities</b>
<b>Department of Facilities &amp; Fleet Management (DFFM)</b>	I.B.2.c	Roadways
	I.B.2.d	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.i	County Facilities
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k.3	Training: good housekeeping at maintenance and public works facilities
	I.B.2.k.4	Training: tracking of pesticides, herbicides and fertilizer certifications
<b>Department of Finance (DF), Risk Management Division (RMD)</b>	I.B.2.k.9	Training: coordination of training documentation
<b>Department of Fire and Rescue (DFR)</b>	I.B.2.f	Spill Prevention and Response
	I.B.2.k.8	Training: spill response for emergency response employees
<b>Department of Parks, Recreation &amp; Toursim (DPRT)</b>	I.B.2.d	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.i	County Facilities
	I.B.2.j.1.c	Public Education: golf courses
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k.4	Training: tracking of pesticides, herbicides and fertilizer certifications
	I.B.2.k.7	Training: good housekeeping at county recreation facilities
<b>Department of Public Works (DPW), Environmental Management Division (EMD) &amp; Construction and Operations Division (COD)</b>	I.A.	MS4 Program Coordination
	I.B.1.	Planning
	I.B.2.a	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands
	I.B.2.b	Retrofitting on Prior Developed Lands
	I.B.2.e	Illicit Discharges and Improper Disposal
	I.B.2.g	Industrial & High Risk Runoff
	I.B.2.h	Storm Sewer Infrastructure Management
	I.B.2.j	Public Education/Participation

**Prince William County FY24 Annual Report  
Roles and Responsibilities (I.A.2)**

<b>Agency</b>	<b>Permit Section</b>	<b>Responsibilities</b>
	I.B.2.j.1.a	Public Education: illicit discharges
<b>Department of Public Works (DPW), Environmental Management Division (EMD) &amp; Construction and Operations Division (COD)</b>	I.B.2.j.1.b	Public Education: individual and group involvement in local water quality improvement initiatives
	I.B.2.j.1.e	Public Education: household yard waste
	I.B.2.j.1.f	Public Education: litter prevention program
	I.B.2.j.1.g	Public Education: residential car washing
	I.B.2.j.1.h	Public Education: pesticides, herbicides, and fertilizers
	I.B.2.j.1.i	Public Education: voluntary stormwater management techniques
	I.B.2.j.1.j	Public Education: commercial, industrial, and institutional entities
	I.B.2.k.1	Training: illicit discharges
	I.B.2.k.5	Training and certifications per Virginia Erosion and Sediment Control Law
	I.B.2.k.6	Training and certifications per Virginia Stormwater Management Act
	I.B.2.l	Water Quality Screening Programs
	I.B.2.m	Infrastructure Coordination
	I.C.1.	Biological Stream Monitoring
	I.C.2.	In-Stream Monitoring
	I.C.3.	Floatables Monitoring
	I.D.1.	Chesapeake Bay Special Condition
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL
<b>Department of Public Works (DPW), Solid Waste Division (SWD)</b>	I.B.2.i	County Facilities
	I.B.2.j.1.d	Public Education: used oil and household hazardous waste
	I.B.2.k.2	Training: good housekeeping during road, street and parking lot maintenance



**Prince William County FY24 Annual Report  
Roles and Responsibilities (I.A.2)**

<b>Agency</b>	<b>Permit Section</b>	<b>Responsibilities</b>
	I.B.2.k.3	Training: good housekeeping at maintenance and public works facilities

## **Appendix W**

### **Summary of Storm Water and Erosion & Sediment**

### **Control Programs**

## **FY24 Stormwater Management and E&S Control Programs Summary**

Prince William County continues to implement the erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. During DEQ's audit of Prince William County in November of 2017, the E&S program was thoroughly inspected and found to be in compliance. The EPA also audited Prince William County's E&S program in August of 2019 and found the program to be in compliance. An E&S permit is required when the land disturbance exceeds 2,500 square feet.

Our stormwater management program is consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq. The Virginia Stormwater Management Program (VSMP) regulations became effective on July 1, 2014. These regulations are contained in Section 700 of the County's Design & Construction Standards Manual (DCSM), and Chapter 23.2, Article IV – Storm Water Management in Prince William County Code. The SWM requirements for Development on Prior Developed Lands are consistent with the State regulations. The County's SWM regulations are more stringent than the State regulations only in certain areas as described below.

VSMP regulations allowed the localities to adopt criteria more stringent than VSMP with proper justification based on specific watershed studies. Alternatively, more stringent regulations that pre-existed prior to January 1, 2013, were exempt. Based on this exemption, Prince William County retained more stringent regulations on flood control in critical watersheds to control the 25-year storm to prevent localized flooding events. In addition, the County retained its authority to require the control of the 100-year flood, for proposed developments located upstream of existing residential developments with required minimum lot sizes less than one acre and adjoining special flood hazard areas. These requirements are in addition to the required control of 2- and 10-year frequency storms per state regulations.

Prince William County employs 11 full-time site inspectors and an E&S Program Manager. In addition, the County has five full-time engineers to review the land development plans for E&S and SWM requirements. All our site inspectors and plan reviewers are duly certified for erosion and sediment control and SWM. In Prince William County, maintaining these certifications is a condition for continued employment. Prince William County is committed to providing continuing education and training to its employees on E&S and SWM. For a list of site inspector certifications, please see Appendix A.

The land development plan review, inspection, and enforcement of E&S and SWM regulations are performed by a single agency in Prince William County. The Environmental Services Division of the Department of Public Works is directly responsible for administering the program. Having a streamlined program under one agency is very helpful in ensuring the consistent interpretation and enforcement of applicable ordinances. The County continues to require the Responsible Land Disturbance (RLD) certifications prior to issuing the land disturbance permits. The County's E&S Administrator conducts periodic joint meetings with the plan reviewers and the site inspectors for the continued improvement of the programs.

Prince William County has developed a mobile application for E&S and VSMP inspections. This system runs on tablet devices provided to each site inspector. Follow up inspections, violation notices, and inspection checklists are all managed through the mobile application. This application has enhanced the inspection efficiency and brought added consistency among all site inspectors.

Prince William County continues to implement a robust program to address the post-construction discharges from new developments and redevelopments by ensuring the long-term operation and maintenance of these SWM controls. All the county-maintained and the county-owned facilities are inspected annually. The County inspects all the privately-maintained SWM facilities once within the 5-year permit cycle. The owners of these facilities receive the County's inspection reports along with the identification of deficiencies that must be corrected within the specified deadline. Staff conduct follow-up inspections to ensure maintenance and seek the County Attorney's assistance as necessary for enforcement.

## **Appendix X**

### **Public Outreach Summary**

## FY24 Public Outreach Summary

Promote Public Reporting and Recognition of Illicit Discharges: Prince William County Public Works offers information to define an illicit discharge, possible sources of pollutants that can enter our stormwater systems, how to prevent runoff and how to report incidents of improper dumping.

### o Residents

1. Maintain several references on our website with pages focused on the MS-4 permit, TMDLs, illicit discharge, illegal dumping, storm water runoff and erosion.
2. Placed articles in newsletter to HOAs and neighborhood leaders about cleaning up after pets, native plants, and proper disposal of wastes.
3. Established a hotline and email address to report illegal dumping into storm drains.
4. Placed informational markers at selected stormwater drains throughout the community and hand out information door hangers explaining the concerns with placing materials in the storm drain.

### o Businesses and Industries

1. Provide online guidance for developers to protect water quality.
2. Share informational materials when visiting sites in the field.
3. Send educational materials with warning and violation letters.

### o County Government

1. Created online training about illicit discharge and pollution prevention for employees (required for some and encouraged for others).
2. Established a SWPPP at four facilities identified as high-risk including park sites and Fleet.
3. Established protocol for outdoor storage of equipment, materials, and chemicals.
4. Expanded program for proper collection and disposal of batteries, universal waste, printer cartridges, electronic accessories, chemicals, and hazardous waste generated by County employees.
5. Worked with an independent vendor to inspect and make repairs to all above-ground fuel storage tanks located at PWC facilities.

Continue to Promote Involvement in Local Water Quality Improvement Projects: Prince William County Public Works will continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs groups, meetings, and other opportunities for public involvement. Public Works takes the lead on water quality improvement initiatives by facilitating projects and educational events, as well as providing funds to partner agencies in the community to support public involvement and awareness.

### o Residents

1. Create and maintain educational web pages on sound practices around the home to prevent pollution and runoff, protect streams, rivers and wetlands, planting native species, safeguarding trees, and managing waterfront property.
2. Create and maintain informational web pages on opportunities to help families volunteer, take steps to go green and reduce their impact on the environment, get outdoors and learn about conservation agencies in the community.
3. Provide residents with the opportunity to drop off household hazardous waste and electronics twice a week year-round at no charge to reduce inclination to pour liquids down the storm drain, illegally dump items or throw them away in regular trash collection.

4. Provide residents with the opportunity to drop off motor oil, anti-freeze, and car batteries at no charge every day to reduce inclination to pour down the storm drain.
5. Provide funding to the Prince William Soil and Water Conservation District to run an Adopt-a-Stream program.
6. Provide funding to the Prince William Soil and Water Conservation District to monitor floatables in the community (volunteers monitored five sites each quarter).
7. Provide funding to the Prince William Soil and Water Conservation District to monitor water quality at 15 active sites and four sites to monitor E.coli, as well as offer monitoring events and outreach events for residents).
8. Provided funding to Keep Prince William Beautiful to work with volunteers to apply adhesive markers to storm drains that remind residents that the drain leads to local waters and eventually the Chesapeake Bay.
9. Provide funding to the Virginia Tech Cooperative Extension Office to provide training for residents on a variety of environmental topics including horticulture, best lawn practices, natural resources, and other lawn care recommendations.
10. Provide funding to the Virginia Tech Cooperative Extension office to help homeowners, businesses, and houses of faith to adopt an urban nutrient management plan.

o Businesses and Industry

1. Work with local businesses to properly maintain their stormwater management ponds.
2. Work with local businesses to recruit volunteers to help with cleanup projects, particularly near their business or when companies have a corporate philosophy to volunteer in the community.
3. Recognize volunteers, individuals, and groups, with an annual Green Community Award.
4. Provide funding to Keep Prince William Beautiful to conduct quarterly litter surveys in the community to identify problem areas with reports sent to nearby businesses asking for their assistance in cleanups and management of potential sources of litter or runoff.
5. Provide funding to Keep Prince William Beautiful to conduct shopping center surveys and provide feedback to property manager to help them better maintain their center (103 shopping centers currently participate).

o County Government

1. Created online training for compliance with Resource Conservation and Recovery Act, Spill Prevention, Control and Countermeasure plans and Illicit Discharge Detection and Elimination.
2. Encourage staff to conduct regular good housekeeping efforts and inspections to ensure environmental compliance as well as safety in Public Works facilities.
3. Created training for staff on the best salt management practices.
4. Enforce the County's Environmental Policy Statement
5. Continue a robust Environmental Management System that includes facilities awarded E2, E3, E4 and SP status by DEQ and an EMS Council that manages and expands the environmental compliance program.
6. Host an annual Earth Day Festival for County Employees
7. Provide spill kits for all fuel tanks and generators at County facilities and train staff how to respond.
8. Maintain compliant Spill Prevention, Control and Countermeasure plans for facilities when required and maintain training requirements for the program.
9. Continue to improve housekeeping practices that will help protect water quality.

Promote Integrated Management Practice (IMP) Plans for Public and Private Golf courses: Prince William County Public Works will reach out to public and private golf courses located within the county that discharge to the permittee's MS4 that would encourage implementation of integrated management

practice (IMP) plans and techniques to reduce runoff of fertilizers and pesticides. Public Works has established a relationship with local golf course managers, particularly the public courses, to ensure they have the tools and knowledge to reduce the impact of their operations.

- o Required all golf courses to have a current nutrient management plan
- o Required all golf course managers to ensure staff is properly trained in IPM plans
- o Required all golf course managers to ensure staff is trained in application techniques to reduce runoff

Continue to Promote Public Good Housekeeping Practices: Prince William County Public Works will promote and publicize good housekeeping practices including the proper disposal of pet waste, household yard waste and washing vehicles to minimize water quality impacts.

o Residents

1. Provide information online about picking up after your pets.
2. Provide a pamphlet about picking up after your pets.
3. County-owned compost facility accepts yard waste from residents for composting and mulching (product available for purchase from private vendor that operates the compost)
4. Provide tips and steps for grass cycling and composting at home.
5. Host an annual event to highlight the benefits of composting and provide information to the community.
6. Created a page on the website with tips on good practices to protect water quality.
7. Created a seven steps tip sheet on protecting water quality.
8. Created a flyer encouraging residents to maintain good housekeeping practices regarding yard waste and distributed it at the landfill.

o Businesses and Industries

1. Created a flyer encouraging landscapers to maintain good housekeeping practices in regard to yard waste and distributed it at the landfill.
2. Created a flyer encouraging restaurants and shopping centers to maintain good housekeeping practices regarding cooking oil and dumpsters/compactors.

o County Government

1. Require all standard vehicles be washed at commercial facilities.
2. Established protocol for properly washing non-standard vehicles and equipment in such a way as to prevent runoff.

Encourage Private Property Owners to Implement Voluntary Stormwater Management Techniques and/or Retrofits: Prince William County will continue to develop programs to encourage private property owners to implement voluntary stormwater management retrofits. Currently, the County partners with the Prince William County Soil and Water Conservation District (PWSWCD) to encourage private property owners to implement voluntary stormwater management retrofits through the Virginia Conservation Assistance Program. This program promotes cost share incentives for private property owners looking to implement BMPs. As part of this partnership, PWSWCD has a goal to coordinate the installation of at least two retrofit projects per year. Two VCAP projects were completed in FY22. Prince William County helps private property owners implement voluntary stormwater management techniques and/or retrofits with strategies including protecting sensitive areas, reducing run off and saving trees.

o Residents

1. Created brochures for owners with waterfront property.
2. Hosted a conference with information for owners with waterfront property.



3. Created a brochure about the Chesapeake Bay Resource Protection Areas for distribution at events and site visits.
4. Created a pamphlet on the benefits of rain gardens.
5. Encourage residents to reduce turf on property and replace with native species and forested areas.
6. Hosted a symposium about establishing native plants on private property.

o Businesses and Industries

1. Encourage businesses and industries to replace turf areas with native species and forested areas to reduce use of herbicides and fertilizers, as well as reduce mowing costs.
2. Offer funding through the Virginia Conservation Assistance Program for nonagricultural lands to support best management practices to protect local water quality.

o County Government

1. Establish a reforestation practice for all new County construction to leave as many mature trees as feasible, save soil for planting projects and replace disturbed areas with trees and native plants to save mowing costs and reduce use of fertilizers and herbicides.
2. Establish meadows and gardens at County historic sites and public facilities.
3. Undertake stream restoration projects.
4. Retrofit existing stormwater management structures with improved structures and strategies during retrofits, repairs, or maintenance.

Continue to Promote Commercial, Institutional, and Industrial Good Housekeeping Practices: Prince William County Public Works will share specific information and strategies with local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts, including illicit discharge and illegal dumping concerns.

o County Government

1. Inspect facilities and areas at high risk for runoff to ensure best management practices in place.
2. Improve best management practices by continuous review and upgrades as needed.
3. Place spill kits and provide training for staff to use spill kits at all vulnerable locations.
4. Conduct regular inspections of our above ground tanks to ensure there are no leaks or spills.
5. Enforce and promote protocol for staff and volunteers for safety when they find tanks, suspicious bottles/jars and oil/fluid spills during inspections and cleanups Prince William County Public Works posts a copy of this state permit on its web page no later than 30 days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.

o Public Works has posted a copy of the state permit on its website. It resides on our Environmental Management Division page at the following link: [Community MS-4 Program \(pwcva.gov\)](http://Community MS-4 Program (pwcva.gov))

o A printed copy of the state permit is kept in our offices for any citizen to review upon request at our service counter.

## **Appendix Y**

### **Nutrient Management Plan Summary**

**FY24 Nutrient Management Plan Summary**

<b>Name</b>	<b>Acres</b>	<b>Longitude (W)</b>	<b>Latitude (N)</b>	<b>Plan acreage</b>	<b>Effective date</b>	<b>Expiration</b>	<b>Planner</b>
H.L. Mooney Plant	4.98	38.6146	77.2684	4.98	9/28/2015	12/15/2024	Willie Woode
Spittle Building	2.48	38.681184	77.349202	2.48	9/30/2015	12/15/2024	Willie Woode
Anne Wall	2.25	77*20'39"	38*36'14"	2.25	10/1/2018	9/30/2024	Flickinger
Ben Lomond	24.04	77*29'37"	38*47'51"	24.04	12/1/2018	11/30/2024	Flickinger
Ben Lomond Community	1.86	77*30'22"	38*47'22"	1.86	7/1/2017	6/30/2026	Flickinger
Braemar	2.46	77*34'9"	38*44'2"	2.46	9/1/2017	8/31/2026	Flickinger
Catharpin	9.03	77*33'56"	38*51'16"	9.03	4/1/2017	3/31/2026	Flickinger
Chinn	11.52	77*19'49"	38*40'14"	11.52	12/1/2018	11/30/2024	Flickinger
Cloverdale	8.66	77*19'10"	38*37'20"	8.66	12/1/2018	11/30/2024	Flickinger
Dale City Rec	3.16	77*20'42"	38*38'35"	3.16	12/1/2018	11/30/2024	Flickinger
Fairmont	4.01	77*29'27"	38*46'54"	4.01	10/1/2018	9/30/2024	Flickinger
Fuller Heights Park	5.39	77*19'48"	38*32'33"	5.39	12/1/2018	11/30/2024	Flickinger
Forest Greens Golf	105.42	77*21'14"	38*32'35"	105.42	11/26/2014	10/16/2024	Jeff Michel
Hellwig	36.84	77*27'0"	38*38'20"	36.84	4/1/2017	3/31/2026	Flickinger
Howison	9.82	77*22'57"	38*38'2"	9.82	4/1/2017	3/31/2026	Flickinger
Independent Hill Park	3.81	77*25'43"	38*38'10"	3.81	7/1/2017	6/30/2026	Flickinger
James Long	17.87	77*38'5"	38*51'13"	17.87	4/1/2017	3/31/2026	Flickinger
Lake Ridge Golf	21.29	77*19'15"	38*41'31"	21.29	5/4/2016	5/26/2026	Mark Murphy
Leitch	9.24	77*22'16"	38*39'26"	9.24	12/1/2018	11/30/2024	Flickinger
Locust Shade	6.52	77*21'4"	38*32'0"	6.52	12/1/2018	11/30/2024	Flickinger
Mayhew	6.95	77*29'29"	38*48'24"	6.95	10/1/2017	8/31/2026	Flickinger
Nokesville	21.85	77*34'39"	38*41'8"	21.85	11/1/2018	10/31/2024	Flickinger
Prince William Golf	114.33	77*37'50"	38*44'51"	114.33	2/5/2016	1/10/2027	Jeff Michel
Stadium	14.60	77*21'5"	38*41'1"	14.60	10/1/2018	9/30/2024	Flickinger
Turley	1.23	77*18'34"	38*37'40"	1.23	12/1/2018	11/30/2024	Flickinger
Valley View	34.50	77*32'22"	38*42'4"	34.50	11/1/2018	10/31/2024	Flickinger
VEPCO	4.47	77*21'49"	38*38'53"	4.47	10/1/2018	9/30/2024	Flickinger
Veterans	35.41	77*14'59"	38*38'32"	35.41	11/1/2018	10/31/2024	Flickinger
Barg Homeless	5.07	77*16'32"	38*37'36"	5.07	10/15/2017	10/29/2024	Bolles
Human Services/ Boys Home	1.92	77*17'43"	38*37'50"	1.92	10/30/2015	11/29/2024	Bolles
Bull Run Library	1.56	77*31'14"	38*47'12"	1.56	10/30/2015	11/28/2024	Bolles
Central Library	1.48	77*27'19"	38*46'7"	1.48	4/11/2016	8/2/2025	Bolles
Dawson Beach	4.08	77*14'42"	38*38'53"	4.08	8/1/2019	11/28/2025	Bolles
Fire 20	1.59	77*18'23"	38*38'51"	1.59	5/17/2017	5/17/2023	Bolles
Fire 4	1.53	77*37'10"	38*48'14"	1.53	10/30/2016	13/21/2026	Bolles
Garfield Ferlazzo	5.90	77*17'40"	38*36'29"	5.90	5/16/2017	5/11/2026	Bolles
Manassas Court	7.21	77*28'44"	38*45'9"	7.21	6/18/2018	9/1/2027	Bolles
Government Center	12.32	77*21'8"	38*40'49"	12.32	3/15/2015	1/19/2025	Bolles
PWC Safety Training Center	4.95	77*35'7"	38*39'52"	4.95	6/25/2018	9/1/2027	Bolles
Western PD	7.27	77*31'2"	38*45'45"	7.27	4/1/2015	2/27/2025	Bolles
<b>Total</b>	<b>578.87</b>		<b>Total to Date</b>	<b>578.87</b>	<b>100%</b>		