



FINAL
Municipal Separate Storm Sewer System
(MS4) Annual Report

JBLE–Langley, Virginia

Permit Year 1: 01 July 2023 - 30 June 2024



JBLE–Langley
633 CES/CEIE
37 Sweeney Blvd
JBLE–Langley, VA 23665

September 2024

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List of Acronyms and Abbreviations

633 CES	633rd Civil Engineer Squadron
633 CES/CEIE	633rd Civil Engineer Squadron / Environmental Element
BMP	Best Management Practice
DA	Drainage Area
E&SC	Erosion and Sediment Control
GEM	Group Environmental Manager
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
JBLE–Langley	Joint Base Langley Eustis–Langley
LFH	Langley Family Housing
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NASA	National Aeronautics and Space Administration
NMP	Nutrient Management Plan
O&M	Operation and Maintenance
POC	Pollutants of Concern
PY	Permit Year
SMF	Stormwater Management Facility
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
VA	Virginia
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VESCP	Virginia Erosion and Sediment Control Program
VPDES	Virginia Pollutant Stormwater Elimination System
VSMP	Virginia Stormwater Management Program
WLA	Wasteload Allocation

Municipal Separate Storm Sewer System Annual Report Certification

As required by Part IV.K.2. of General Permit No. VAR040140, all reports required by commonwealth permits and other information requested by the board shall be signed by a principal executive officer or ranking elected official as described in Part IV.K.1.c or a duly authorized representative.

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.

Type or Print the following information:

Name: Ms. Brenda W. Cook Area Code and Telephone No.: (757) 764-2025

Official Title: Deputy Base Civil Engineer

Signature: _____ Date Signed: _____

Permit Number: VAR040140 MS4 Name: JBLE–Langley

Section 1: Introduction and MS4 Conveyance System Description

Joint Base Langley Eustis–Langley (JBLE–Langley) Virginia, holds a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040140, issued by the Commonwealth of Virginia Department of Environmental Quality (VDEQ) on 01 November 2023. In accordance with provisions outlined in this permit, JBLE–Langley has developed and implemented a comprehensive Stormwater Management Program designed to prevent or reduce the discharge of sediment and other pollutants into the base’s stormwater conveyance system. General Permit No. VAR040140 Part I.D requires JBLE–Langley to evaluate the MS4 program on an annual basis to assess program compliance, the appropriateness of the identified Best Management Practices (BMP) and progress towards achieving the identified measurable goals.

The JBLE–Langley MS4 Program implementation has been determined to be effective in ensuring permit compliance. The remaining sections of this report describe the progress and status of the individual program components, including an assessment of the program component effectiveness. This report describes the progress and status of JBLE–Langley’s MS4 Program during Permit Year (PY) 1 from 01 July 2023 to 30 June 2024.

MS4 Conveyance System

The subsection below provides information about JBLE–Langley MS4 conveyance system, including the permit holder, facility information, mailing address, a short description of the stormwater drainage system, and total maximum daily load (TMDL) allocations for the Chesapeake Bay and surrounding watersheds.

Permit Holder

Commander, 633rd Air Base Wing
125 Mabry Avenue
JBLE–Langley, VA 23665

Facility Information

JBLE–Langley
Hampton, VA 23665
MS4 General Permit No. VAR040140

Mailing Address

Deputy Base Civil Engineer
37 Sweeney Boulevard
JBLE–Langley, VA 23665

It should be noted that the base does not rely on another government entity to satisfy MS4 permit obligations. In addition, no program approvals are required as specified in Part I.C.5 of the MS4 permit.

System Description

JBLE–Langley’s stormwater conveyance system consists of sheet flow areas, swales, ditches, and pipes in two geographically disjunct areas covered under the MS4 permit: the main JBLE–Langley installation and the Bethel Reservoir site which includes portions of Langley Family Housing (LFH). Maps include the stormwater system and structural stormwater management facilities (SMF) and are maintained using Geographic Information System (GIS).

JBLE–Langley has interconnections with three (3) MS4s: the National Aeronautics and Space Administration (NASA) Langley Research Center MS4, Newport News, and Yorktown.

Section 2: Water Quality Programs and Guidance

This section discusses the local and commonwealth water quality programs implemented by JBLE–Langley or the commonwealth within the base boundaries.

Local Programs and Guidance

JBLE–Langley developed and implements local plans, programs, and guidance to comply with the MS4 permit. These documents are listed below.

- JBLE–Langley Environmental Policy Statement (07 February 2022)
- JBLE–Langley MS4 Program Plan (2024)
 - Bacterial (Local Back River) TMDL Action Plan (2024)
 - Standards and Specifications for Erosion and Sediment Control (2023)
 - SMF Inspection and Maintenance Procedures (2024)
 - Illicit Discharge Detection and Elimination (IDDE) Written Procedures (2024)
 - Good Housekeeping Procedures (2024)
 - Employee Training Plan (Updated annually)
 - High-Priority Facility Stormwater Pollution Prevention Plans (SWPPP)
 - Eaglewood Golf Course SWPPP (2024)
 - Pavement Heavy Repair SWPPP (2024)
 - Vehicle Maintenance/Wash Rack SWPPP (2024)
 - Nutrient Management Plans (NMP)
 - Eaglewood Golf Course NMP (2022)
 - LFH/Hunt Companies NMP (2022)
 - Force Support Squadron – Athletic Fields NMP (2022)
- Phase III Chesapeake Bay TMDL Action Plan (2024)
- VPDES Permit VAG750278 for Eagle Golf Course Cart Barn (January 2023)
 - Operations and Maintenance (O&M) Manual (2023)

Commonwealth Programs

In addition to the local programs that the base is implementing, there are commonwealth standards established by VDEQ being implemented. These are listed below.

- **Erosion and Sediment Control Program** – The Virginia Erosion and Sediment Control Law delegates the authority to administer a Virginia Erosion and Sediment Control Program (VESCP) to local municipalities. This is an optional requirement and JBLE–Langley has not developed VESCP standards and specifications, so all land disturbing activities of 10,000 square feet or greater are inspected as defined in § 62.1-44.15:51 of the Code of Virginia.

- **Post Construction Stormwater Management** – The Virginia Stormwater Management Act delegates the authority to administer a Virginia Stormwater Management Program (VSMP) to local municipalities. This is an optional requirement and JBLE–Langley has not developed VSMP standards and specifications. Instead, JBLE-Langley implements a post-construction stormwater runoff control program through compliance with Title 9, Agency 25, Chapter 870 of the Virginia Administrative Code (VAC) (9VAC25-870) 25-870 and a maintenance and inspection program consistent with MS4 Permit Part I.E.5.b.
- **Stormwater Permitting Program** – The VDEQ Water Division implements the stormwater permitting program to develop, plan, and implement commonwealth-wide stormwater control policies, strategies, and rules designed to protect the surface waters from the impacts of stormwater pollutants and runoff.

Section 3: Minimum Control Measures Evaluation

An evaluation of MS4 program effectiveness is assessed within each Minimum Control Measure (MCM) review in the subsequent sections.

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement and Participation
- MCM 3: Illicit Discharge Detection and Elimination
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands
- MCM 6: Pollution Prevention and Good Housekeeping for Municipal Operations

MCM 1: Public Education and Outreach

Part I.E.1 of MS4 Permit No. VAR040140 requires JBLE–Langley to develop and implement a public education and outreach program with objectives to (1) increase the public’s knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired water and other local water pollution concerns; (2) increase the public’s knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications, and (3) implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.

The Public Education and Outreach Program effectively achieved permit compliance with Part I.E.1 in PY1. A summary of how JBLE–Langley achieved compliance is reported herein. The following bulleted list provides the applicable summaries, descriptions, and/or confirmation statements as required by Part I.E.1.g. Please refer to the table below for specific strategies and examples.

- Part I.E.1.g.(1) – High priority issues for public outreach and education were not changed for PY1. They are:
 - 1. Awareness of our receiving water and their impairments
 - 2. Clean recreation
 - 3. Spill and illicit discharge reduction
- Part I.E.1.g.(2) – High priority issues were addressed using a minimum of two strategies (examples provided in Part I.E.1, Table 1 of the permit) and four activities for outreach (examples provided in Part I.E.1, Table 2 of the permit). These strategies and activities are described in the table below.
- Part I.E.1.g.(3) – High priority issues did not change in PY1.
- Part I.E.1.g.(4) – Public education and outreach activities conducted in this PY did not include education regarding climate change.

MCM 1: Public Education and Outreach		
Permit Reference	Part I.E.1 Public Education and Outreach	
Strategy	PY1 Action	High Priority Issue Addressed
Traditional Written Materials	Brochure: “Household Stormwater Pollution”	1, 3
	Brochure: “Nature Walk and Trail Informational Brochure”	1, 2
Signage	Storm drain medallions installed throughout the installation on stormwater inlets.	1, 3
	Marina Shoreline Educational Sign placed at the Living Shoreline	1, 2
Alternate Materials	Pet waste bags/holders, reusable bags, water bottles, pens, notebooks, etc. given out during outreach events.	1, 3
Media Materials	Facebook posts about local waters, recreation, events, volunteer opportunities and illicit discharges/potential stormwater pollution concerns as well as the methods for reporting these observations. (https://www.facebook.com/jblelangleyenvironmental)	1, 2, 3
	633 Civil Engineering Squadron / Environmental Element (CES/CEIE) published event flyers for “International Coastal Cleanup”, “Clean the Bay Week”, and “Earth Week” on their Facebook page.	1, 2, 3
	633 CES/CEIE maintains a website that provides information to the public, including volunteer events, brochures, the MS4 Program Plan and the MS4 Annual Reports. https://www.jble.af.mil/About-Us/Units/Langley-AFB/Langley-Environmental/	1, 2, 3

MCM 2: Public Involvement/Participation

Part I.E.2. of MS4 Permit No. VAR040140 requires JBLE–Langley to cultivate a public involvement and participation program and comply with Commonwealth and local public notice requirements.

The Public Involvement and Participation Program effectively achieved permit compliance with Part I.E.2. in PY1. A summary of how JBLE–Langley achieved compliance is reported herein. The following bulleted list provides the applicable summaries, descriptions and/or confirmation statements as required by Part I.E.2.i. Please refer to the table below for specific activities and associated metrics which satisfy requirements in Part I.E.4.e(3)–(7).

- Part I.E.2.i(1) – No public input directly related to the MS4 Program was received in PY1. General public responses to outreach events were positive, with 13 individuals listed as reoccurring volunteers.
- Part I.E.2.i.(2) – No stormwater pollution complaints were received as established in Part I.E.2.a(1).
- Part I.E.2.i.(8) –The base did not collaborate with other MS4 permittees during public involvement opportunities this PY.

MCM 2: Public Involvement / Participation			
Permit Reference	Part I.E.2 Public Involvement / Participation		
Required Permit Activity	Permit Reference	PY1 Activity	Activity Metrics and Evaluation
Maintain a website with the MS4 Program and stormwater information.	Part I.E.2.i (3)–(4)	633 CES/CEIE maintains a website and a Facebook page that is 1) open to the public and 2) provides outreach information and 3) access to the MS4 Program Plan and the MS4 Annual Reports.	The website is active and located here: <ul style="list-style-type: none"> • https://www.jble.af.mil/About-Us/Units/Langley-AFB/Langley-Environmental/ • https://www.facebook.com/jblelangleyenvironmental
Describe the public involvement, education and outreach activities implemented including metrics and evaluation.	Part I.E.2.i(5)–(7)	1. Earth Week events increased awareness and connection with the environment around JBLE–Langley. Volunteer events included: <ol style="list-style-type: none"> a) Nature trail preservation b) iNaturalist learning event International Coastal Cleanup: JBLE–Langley hosted trash cleanup around the base. Fliers were distributed and posted around the base and on Facebook for volunteers to sign up.	1. Earth Week activity metrics: <ol style="list-style-type: none"> a) Fifteen (15) volunteers replaced 50 ft of boards and secured loose nails on the nature trail. b) Sixty-two (62) volunteers learned how to use the iNaturalist application to identify plant species around the base.

MCM 2: Public Involvement / Participation			
Permit Reference	Part I.E.2 Public Involvement / Participation		
Required Permit Activity	Permit Reference	PY1 Activity	Activity Metrics and Evaluation
Describe the public involvement, education and outreach activities implemented including metrics and evaluation, cont.	Part I.E.2.i(5)–(7), cont.	<p>JBLE-Langley continues to use Facebook posts and fliers in high-traffic areas of the base to engage all economic and ethnic groups for events. Volunteers learned about the potential impacts of trash and other illicit discharges to the Back River.</p> <p>2. Clean the Bay Week – Daily volunteer events were removing trash from the waterfront areas around the installation. All volunteers participated in discussions about how stormwater pollution on the installation affects the watersheds and steps that can be taken at home to prevent trash from entering the environment.</p>	<p>2. Sixty (60) volunteers participated in the International Coastal Cleanup where approximately 600 lbs. of trash were removed from a 3.0-mile section of coastline. These activities contribute to improving water quality by engaging with and educating the public about trash and other illicit discharges and the impacts to receiving waters.</p> <p>3. A total of 56 volunteers participated in Clean the Bay Week and collected over 650 lbs. of trash and cleaned approximately 5 linear miles of shoreline and one (1) square mile around Bethel Reservoir.</p> <p>4. Education regarding climate change was not included in PY1 public education or outreach activities.</p>

MCM 3: Illicit Discharge Detection and Elimination

Part I.E.3 of MS4 Permit No. VAR040140 requires JBLE–Langley to develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4.

The Illicit Discharge Detection and Elimination Program was effectively implemented to achieve permit compliance with Part I.E.3. in PY1. A summary of how JBLE–Langley achieved compliance as required by Part I.E.3.e is reported herein.

- Part I.E.3.e(1) – The MS4 map and inventory for JBLE–Langley has been updated to reflect all changes from PY1.
 - During PY1, JBLE–Langley updated the stormwater system GIS data to reflect changes in the categorization of the outfalls and drainage areas (DA) on base. Updates to existing MS4 DAs including splitting them into smaller DAs as well as reclassification of industrial and non-industrial outfalls/DAs. Overall, reclassifications resulted in the net decrease of non-industrial outfalls by seven (7). VDEQ reviewed and approved the updated MS4 map and outfall changes.
- Part I.E.3.e(2) – Fifty (50) of the 98 non-industrial outfalls were inspected during PY1. Details regarding the inspection findings are included on the outfall inspection forms and in the PY1 Dry Weather Outfall Monitoring Report. Copies of the outfall inspection forms are maintained by 633 Civil Engineering Squadron / Environmental Element (CES/CEIE) and will be made available upon request.
- Part I.E.3.e(3) – A list of illicit discharges to the MS4, including spills reaching the MS4, are included in Attachment 1.

MCM 4: Construction Site Stormwater Runoff Control

Part I.E.4 of MS4 Permit No. VAR040140 requires JBLE–Langley to comply with the VSMP in order to maintain compliance with the Construction Site Runoff Controls.

JBLE–Langley has taken steps to implement the program BMPs and has effectively achieved permit compliance with Part I.E.4. in PY1, under the base’s Construction Site Stormwater Runoff Control Program. A summary of how JBLE–Langley achieved compliance is reported herein. Please refer to the table below for specific activities and associated metrics which satisfy requirements in Part I.E.4.e(1)–(2). As required by Part I.E.4.e(3)(a)–(b), all land disturbing projects that occurred during the reporting period have been conducted in accordance with the current approved standards and specifications for erosion and sediment control (E&SC). No land disturbing activities were conducted without VDEQ approved standards and specifications.

MCM 4: Construction Site Stormwater Runoff Control			
Permit Reference	Part I.E.4 Construction Site Stormwater Runoff Control		
Required Permit Activity	Permit Reference	PY1 Construction Project	Inspections and Major Enforcement Actions
Provide information on land-disturbing activities including, the total number of inspections conducted; and the total number and type of enforcement actions implemented and the type of enforcement actions.	Part I.E.4.e(1)–(2)	Training Squadron (VAR10T193)	<ul style="list-style-type: none"> MS4 E&SC inspections: 4 VDEQ inspections: 0 Enforcement Actions: 0
		Targeting Center (VAR10P929)	<ul style="list-style-type: none"> MS4 E&SC inspections: 22 VDEQ inspections: 3 Enforcement Actions: 0
		Consolidated OPS Maintenance Hanger (VAR10R908)	<ul style="list-style-type: none"> MS4 E&SC inspections: 22 VDEQ inspections: 2 Enforcement Actions: 0
		Low Observation Site (VAR10R596)	<ul style="list-style-type: none"> MS4 E&SC inspections: 19 VDEQ inspections: 2 Enforcement Actions: 0

MCM 5: Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands

Part I.E.5 of MS4 Permit No. VAR040140 requires JBLE–Langley to implement a Post-Construction Stormwater Management Program. The program addresses stormwater runoff related to new development and redevelopment projects throughout the service area, including a combination of structural and non-structural BMPs.

The Post-Construction Stormwater Program was effectively implemented to achieve permit compliance with Part I.E.5. in PY1. The table below summarizes how the base achieved compliance with Part I.E.5.e.(2),(3),(5)–(6) during PY1.

MCM 5: Post-Construction Stormwater Management		
Permit Reference	Part I.E.5. Post-Construction Stormwater Management	
Required Permit Activity	Permit Reference	PY1 Activity
Provide the total number of inspections conducted on SMFs owned or operated by the permittee.	Part I.E.5.e(2)	Completed the annual inspections of the 93 SMFs on base.
Provide a description of the significant maintenance, repair, or retrofit activities performed on the stormwater management facilities owned or operated by the permittee.	Part I.E.5.e(3)	No significant maintenance, repair, or retrofit activities were performed on the SMFs owned/operated by the base during PY1.
Provide confirmation of VDEQ BMP Warehouse Submission.	Part I.E.5.e(5-6)	New SMFs implemented and inspected as applicable were electronically reported using the VDEQ BMP Warehouse in accordance with Part III.B.1-2 and Part III.B.5 in PY1. Any new SMFs implemented and inspected after the submittal date of 01 October 2023 will be electronically reported no later than 01 October 2024.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations

Part I.E.6 of MS4 Permit No. VAR040140 requires JBLE–Langley to implement a Pollution Prevention / Good Housekeeping Program, including a training program for base personnel and the community.

The Pollution Prevention / Good Housekeeping Program was effectively implemented to achieve permit compliance with Part I.E.6 in PY1. A summary of how JBLE–Langley achieved compliance is reported herein. Please refer to the table below for specific activities and associated metrics which satisfy requirements in Part I.E.6.y(1)–(7).

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations		
Permit Reference	Part I.E.6 Pollution Prevention / Good Housekeeping for Municipal Operations	
Required Permit Activity	Permit Reference	PY1 Action
Summarize any operational procedures developed or modified in accordance with Part I.E.6(a)-(b) during the reporting period.	Part I.E.6.y(1)	<ul style="list-style-type: none"> Existing written procedures were modified/updated in May 2024 and are included with the revised MS4 Program Plan. No new procedures were developed during the PY.
Confirm that all high-priority facilities were reviewed to determine if SWPPP coverage is needed.	Part I.E.6.y(2)	All high-priority facilities were reviewed during PY1 to determine if SWPPP coverage is needed.
List any new SWPPPs developed or modified in accordance with Part I.E.6.i, 6.j, 6.l, or 6.m or the rationale of any high priority facilities delisted in accordance with Part I.E.6.l or 6.m during the reporting period.	Part I.E.6.y(3) – (5)	<ul style="list-style-type: none"> No new high-priority facility SWPPPs were developed during the reporting period. Each of the three (3) existing high-priority facility SWPPPs are routinely updated, no less than annually, to reflect minor changes in procedure and potential pollutant exposures. No high-priority facilities were delisted during the reporting period.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations		
Permit Reference	Part I.E.6 Pollution Prevention / Good Housekeeping for Municipal Operations	
Required Permit Activity	Permit Reference	PY1 Action
Summarize the status of each NMP as of 30 June of the reporting year.	Part I.E.6.y(6)	Eaglewood Golf Course NMP: <ul style="list-style-type: none"> • Approved – Valid through 7 September 2027 Athletic Fields NMP: <ul style="list-style-type: none"> • Virginia Department of Conservation and Recreation (DCR) Approval Not Required – Valid through 14 June 2025 LFH NMP: <ul style="list-style-type: none"> • Virginia DCR Approval Not Required – Valid through 12 September 2025
Provide a list of training activities conducted in accordance with Part I.E.6.d.	Part I.E.6.y.(7)	High-Priority Facility SWPPP Training: <ul style="list-style-type: none"> • Participants: 18 • Completion Date: 22 August 2023 • Objectives Covered: SWPPP, IDDE procedures, vehicle and equipment maintenance, and road/street maintenance

Section 4: TMDL Action Plans

SC1: TMDL Special Conditions Compliance for the Chesapeake Bay TMDL

Part II.A of the MS4 permit requires the base to prepare a Chesapeake Bay TMDL Action Plan that demonstrates plans to meet the required reductions of the Pollutants of Concern (POC). JBLE–Langley’s Draft Phase III Chesapeake Bay TMDL Action Plan was developed during PY1 in preparation for the submittal deadline of 01 November 2024 per Part II.A.12.b. The Action Plan presents a discussion of the compliance requirements as well as the estimated load contribution, required load reductions, and pollutant reduction credits. The plan also reports progress made toward meeting the 100% cumulative pollutant reduction requirement for the third permit cycle.

The Chesapeake Bay TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY1 and is provided under separate cover as required in Part I.D.6 of the permit.

SC2: TMDL Special Conditions Compliance other than the Chesapeake Bay TMDL

Part II.B.2 of the MS4 permit requires the base to maintain a TMDL Action Plan for pollutants allocated to the base in an approved TMDL.

JBLE–Langley has updated the Bacteria TMDL Action Plan to address bacteria impairment in the Back River. The base’s MS4 Program Plan has incorporated the TMDL Action Plan which identifies the BMPs and other interim milestone activities. The 2017 TMDLs, which became final on 09 February 2018, include updated information on the listing status of assessment units according to the 2014 305(b)/303(d) Water Quality Assessment Integration Report and assign a waste load allocation (WLA) for bacteria to JBLE–Langley. The WLA is a portion of the TMDL and represents the allowable load a permittee may discharge to the waterbody and still meet water quality standards.

JBLE–Langley is required to implement an approved TMDL Action Plan for bacteria impairment. The Bacteria TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY1 is included as Attachment 2.

Attachment 1
MS4 Illicit Discharges

Attachment 1. MS4 Illicit Discharges					
Permit Reference and MS4 Illicit Discharge Data					
Location of Discharge	Date Reported or Identified	Method of Discovery	Results of Investigation	Follow-up Activities	Date Investigation Closed
Part I.E.3.e.(3a)	Part I.E.3.e.(3b)	Part I.E.3.e.(3c)	Part I.E.3.e.(3d)	Part I.E.3.e.(3e)	Part I.E.3.e.(3f)
Flightline, Spot B2	9/5/2023	Reported by base personnel	A stuck valve on the airframe caused 50-100 gallons of Jet A fuel to spill. Spill pads were immediately deployed and incident was reported to VDEQ.	None	9/5/2023
Flightline, A5	10/13/2023	Reported by base personnel	Mechanical failure caused 50 gallons of Jet A fuel to spill. Booms were deployed and absorbent pads were used to clean the spill on the tarmac. Incident was reported to VDEQ and Nuclear Regulatory Commission (NRC).	None	10/13/2023
Flightline A15	4/11/2024	Reported by base personnel	Wing vent mechanical failure caused 50-75 gallons of Jet A fuel to spill. Booms deployed at location of spill and at MS4 Outfall 232 and 233. Incident was reported to VDEQ and NRC.	None	4/11/2024
Flightline, Taxiway M	4/15/2024	Reported by base personnel	A stuck valve on the left engine of an aircraft caused 50 gallons to spill on the taxiway. Booms from 4/11/2024 incident were deployed and stormwater drain covers and spill pads were also used. Incident was reported to VDEQ and NRC.	None	4/15/2024

Attachment 2
Bacteria TMDL Action Plan Implementation Status Memo

Date: September 2024
Subject: Back River Bacteria Total Maximum Daily Load (TMDL)
Action Plan Implementation Progress for JBLE–Langley

1.0 INTRODUCTION

In 2017, the Virginia Department of Environmental Quality (VDEQ) developed a Total Maximum Daily Loads (TMDL) to address fecal coliform bacteria impairment in the Back River Virginia (VDEQ, 2017). The TMDLs, which were approved by the United States Environmental Protection Agency (EPA) on 09 February 2018, assign wasteload allocations for bacteria to Joint Base Langley Eustis–Langley (JBLE-Langley). The wasteload allocation is a portion of the TMDL load and represents the allowable load a permittee may discharge to the waterbody and still meet water quality standards.

JBLE–Langley is authorized to discharge stormwater from the installation in accordance with an industrial stormwater permit (VAR052285) and a Municipal Separate Storm Sewer System (MS4) permit (VAR040140) (VDEQ, 2023), both issued by the VDEQ. The MS4 permit identifies minimum control measures and special condition requirements, measurable goals and best management practices selected for implementation at JBLE–Langley. Special Condition 1 found in Part II.B.2 of the JBLE–Langley MS4 permit requires the installation to maintain a specific TMDL Action Plan for pollutants allocated to the MS4 in an approved TMDL.

JBLE–Langley updated their Bacteria TMDL Action Plan for the installation’s MS4 area. The TMDL Action Plan describes the TMDL waterbodies, JBLE–Langley installation, existing and proposed bacteria control measures, and an implementation schedule for addressing bacteria sources in the Back River watershed (JBLE–Langley, 2024a).

The purpose of this memorandum is to document progress toward implementing the Back River Bacteria TMDL Action Plan (JBLE–Langley, 2024). The objectives of this memorandum are to present the results of the bacteria source assessment at JBLE–Langley and discuss strategies that have been implemented or will be implemented by the Air Force Civil Engineer Center (AFCEC) and JBLE–Langley to reduce bacteria sources.

This memorandum is organized into the following sections:

- Section 1.0 presents the background, purpose and objectives
- Section 2.0 describes the schedule and actions for addressing bacteria sources
- Section 3.0 describes the bacteria source assessment
- Section 4.0 describes the bacteria action plan implementation progress
- Section 5.0 describes bacteria-reducing actions in progress
- Section 6.0 presents the summary and next steps
- Section 7.0 contains a list of references associated with this memorandum

2.0 ACTION PLAN FOR ADDRESSING BACTERIA IN THE BACK RIVER

JBLE–Langley developed an implementation schedule for addressing bacteria impairments in the Back River as part of the Back River Bacteria TMDL Action Plan for JBLE–Langley (JBLE–Langley, 2024). During the first MS4 permit cycle (2017 – 2018), the Action Plan lists the following JBLE–Langley implementation actions:

- Identify and maintain a list of existing source controls and management practices that are applicable to reducing fecal coliform bacteria.
- Identify opportunities for enhancing public education and outreach programs to address bacteria impairment.
- Assess significant sources of bacteria using desktop evaluations, field investigations and collaboration with key base staff.
- Determine if additional source controls are needed. Prepare a summary of potential controls and identified programs and activities to support their implementation.
- Evaluate new bacteria-related datasets for the Back River watershed collected by other agencies (e.g., VDEQ) as available.

As described in the Back River Bacteria TMDL Action Plan, bacteria-reducing activities to be performed during the second MS4 permit cycle (2018 – 2023) include:

- As funding permits, implement activities identified in the implementation schedule (from previous years) as appropriate.
- Evaluate new bacteria-related datasets for the Back River watershed collected by other agencies as available.
- Identify any current or additional activities to be performed during the subsequent permit cycle.
- Submit an estimated end date for achieving the bacteria wasteload allocation.
- Update the Bacteria TMDL Action Plan to reflect activities performed during the following year and report on progress annually. Adjust the implementation schedule as needed to reflect findings from field and desktop assessments. Report on progress annually.

As described in the Back River Bacteria TMDL Action Plan, bacteria-reducing activities to be performed during the third MS4 permit cycle (2023 – 2028) include:

- Maintain already implemented BMPs and activities as funding permits.
- Evaluate new bacteria-related datasets for the Back River watershed collected by other agencies as available.
- Identify any current or additional activities to be performed during the subsequent permit cycle.
- Update the Bacteria TMDL Action Plan to reflect activities performed during the following year and report on progress annually. Adjust the implementation schedule as needed to reflect findings from field and desktop assessments. Report on progress annually.

3.0 BACTERIA SOURCE ASSESSMENT

The Back River TMDL report identifies both natural and anthropogenic sources of bacteria in the watershed (Table 3-1).

**Table 3-1. Fecal Bacteria Source Allocations (%) in the Back River Watershed
 (Source: VDEQ 2017, Table 3.7 and Table 3.8)**

Source Category	Source	Percent
Wildlife	Deer	4.3
	Ducks/Birds	43.2
	Muskrats	0.6
	Nutria	1.3
	Racoons	0.3
Pets	Dog	34.6
Livestock	Livestock	9.0
Human	Human-Sanitary Sewer Overflow	6.1
	Human-Septic	0.0
	Marina (slips)	0.4

The percentages presented in Table 3-1 are averages across the entire Back River watershed. The 2017 TMDL does not identify any specific sources of bacteria within the JBLE–Langley MS4 area. To build on this information, JBLE–Langley conducts an annual evaluation of local fecal bacteria sources with the goal of identifying potential pollutant “hot spots” or sources across the base. The evaluation conducted in 2024 included field assessments of potential point and nonpoint sources of bacteria. Potential sources of bacteria include wildlife, horse stables, the dog training center and associated dog kennels, and resident housing area. The sources identified, and strategies taken to address these sources are described in Sections 4.0 and 5.0.

4.0 BACTERIA ACTION PLAN IMPLEMENTATION PROGRESS

This section describes programs and activities that are being implemented at JBLE–Langley to address bacteria sources and accomplish the goals set forth in the JBLE–Langley Bacteria TMDL Action Plan.

4.1 Wildlife

Wildlife is the single largest source contributor of bacteria within the Back River watershed and the most challenging to control. The base employs strategies to control the wildlife population through the Natural Resources Program as described in the Installation Natural Resources Management Plan (INRMP) to address bird/animal aircraft strike hazard (BASH) safety concerns, reduce disease burden on local wildlife, and lower predation pressure on nesting Diamondback Terrapins. JBLE–Langley works with the United States Department of Agriculture, Natural Resource Conservation Service to remove deer, coyotes, large birds, cats, and other animals through a predation removal program. Additionally, steps the base takes to prevent wildlife from being drawn to the flightline include maintaining low-cut grass around the airfield, use of grass seed for re-stabilization efforts that do not attract geese, removing wetlands in the

airfield clear zone, restricting stormwater management basins that retain water for over 48 hours, and installing fencing around the airfield. Urban trash management practices are also implemented at JBLE–Langley, with dumpsters required to be covered at all times to prevent attracting excess of nuisance wildlife.

4.2 Domestic Animals

Pet waste is the second largest contributor of bacteria within the Back River watershed. Unlike wildlife, pet waste can be effectively controlled using a variety of management approaches. JBLE–Langley residents are permitted to have pets and it is reasonable to assume that residents walk their dogs around nearby neighborhoods. Pet waste disposal stations have been installed and are maintained by Langley Family Housing (LFH) staff who work for Balfour Beatty Communities, the private real estate company that manages JBLE–Langley housing. As described in the base’s MS4 Program Plan, residents with pets are briefed on the importance of proper pet waste disposal and the impact on stormwater and water quality (JBLE–Langley, 2024c).

JBLE–Langley maintains a military dog training center with associated dog kennels and approximately 15 acres of horse stable and pasture. Dog training areas are covered with artificial turf and are surrounded by vegetated buffers that provides filtration of pollutants prior to entering surface waters. Potential sources of bacteria in runoff from the dog training center are addressed through stormwater treatment practices and training as described in the MS4 Program Plan (JBLE–Langley, 2024c).

JBLE–Langley has developed and distributed a pet waste brochure that contains educational information and contact information for the Stormwater Program Manager. The pet waste brochure is given to new residents of base housing and at various outreach events.

4.3 Livestock

The JBLE–Langley horse stable is the only location housing livestock on the installation. The JBLE–Langley horse stable is privatized through the Langley Saddle Club and encompasses approximately 15 acres including a horse stable, boarding facility, and pasture. Stable bedding and manure associated with the stable are contained under cover and horse owners are informed of the importance of minimizing exposure to stormwater. Any manure produced while in the field is left to decompose naturally. Potential sources of bacteria in runoff from the horse stable are addressed through stormwater treatment practices and training as described here and in the MS4 Program Plan (JBLE–Langley, 2024c).

4.4 Human

The entire JBLE–Langley installation is currently connected to a sanitary sewer network, and there are no septic systems currently located on the installation.

The JBLE–Langley Illicit Discharge Detection and Elimination (IDDE) program is designed to help detect, identify, and address non-stormwater discharges to the stormwater network. Non-stormwater discharges include untreated sewage that contains fecal bacteria. To accomplish this, the base regularly screens outfalls to determine if any non-runoff related discharges are occurring. Dry weather screening is

conducted on non-industrial outfalls annually as outlined in the IDDE Procedure Manual. Any sanitary sewer overflows that occur will be immediately addressed. Fifty (50) of the 98 non-industrial outfalls were inspected during 2023-2024. The outfall inspections included the collection of outfall type, outfall pipe diameter and material type, flow description, physical indicators of illicit discharge, and overall preliminary rating based on these indicators. Details on the IDDE program and procedures used to identify illicit discharges are provided in the JBLE–Langley IDDE Procedures Manual (JBLE–Langley, 2024b). Additional detail on IDDE initiatives is presented in the JBLE–Langley MS4 Program Plan (JBLE–Langley, 2024c).

In 2023, JBLE–Langley began replacing and repairing sanitary sewer lines and manholes appropriating approximately \$1.3 million dollars to reduce infiltration and inflow. These efforts assist in reducing the occurrence of sanitary sewer overflows. Recent inflow and infiltration evaluations found no interconnections between the sanitary and storm sewer systems. As part of these evaluations, older sanitary sewer systems are being replaced that may be undersized or have incurred damage. In 2023, 29 line segments totaling 4,123 linear feet of sanitary sewer was replaced at JBLE-Langley. There is a total of 36 line segments scheduled for replacement in calendar year 2024. The replacement of older sanitary systems which may be failing or undersized can significantly reduce the potential of bacterial contamination to surrounding groundwater and the Back River.

Improperly discharged sewage from recreational boats is also a potential source of bacteria. The base maintains a recreational boat marina used by members of the JBLE–Langley community. To avoid illicit or accidental discharge of raw sewage at the marina, the base provides required training to all boat-slip renters on the proper use of the sewage pump-out station. When properly utilized by boat owners, this device will help to minimize sewage leaks and associated bacteria inputs to the Southwest Branch Back River and Back River.

4.5 All Source Categories

JBLE–Langley has implemented several additional control measures to address fecal bacteria pollution from the base. Over the past seven years, JBLE–Langley has completed 9,295 linear feet of shoreline stabilization along the eastern and southeastern shorelines of the Back River and Southwest Branch Back River. JBLE–Langley constructed an additional 1,566 linear feet of stabilization in 2020 along portions of the Southwest Branch Back River near the marina. Additional shoreline restoration is planned for the near future. These areas of stabilization increase resilience to major storm events and flooding, provide habitat for native animals and plants and reduce erosion and suspension of sediment and associated bacteria in the Back River and Chesapeake Bay.

5.0 BACTERIA-REDUCING ACTIVITIES IN PROGRESS (2023-2024)

JBLE–Langley has initiated 2023-2024 actions that are identified in Section 2.0 of this memorandum. In addition, JBLE–Langley plans to refine its initial assessments of potential sources and control measures, with the goal of improving resource allocation across the installation.

6.0 SUMMARY

In summary, JBLE–Langley has taken several actions to reduce bacteria and address various sources on the installation. Completed or ongoing actions taken by JBLE–Langley include the following:

- Prepared a Bacteria TMDL Action Plan, including preliminary source investigations and schedule for addressing bacteria sources.
- Relocated deer, coyotes, large birds, cats and other animals away from the base and deterred this wildlife from areas surrounding airfields to avoid BASH safety concerns.
- Installed pet waste disposal stations at housing areas and in areas frequented by pets.
- Developed and distributed educational brochures to the public, including pet waste, outdoor vehicle washing, and car maintenance and pollution prevention brochures.
- Initiated sanitary sewer repairs to reduce infiltration and inflow.
- Installed a new sewage boat pump out station.
- Completed 10,861 linear feet of shoreline stabilization along the eastern and southeastern shorelines of the Back River and Southwest Branch Back River.
- Constructed an oyster reef restoration project in the Back River in partnership with the Chesapeake Bay Foundation and Booker Elementary school in 2017. In August 2018 and again in June 2019, the base expanded the reef habitat through oyster reef building workshops, involving both elementary school students and base residents.
- During 2023-2024, several local events were hosted to raise awareness and facilitate public involvement on the topics of reducing pollutants in stormwater, improving water quality, and supporting local restoration and clean-up projects.

7.0 REFERENCES

- JBLE–Langley. 2024a. *Draft Back River Bacteria Total Maximum Daily Load Action Plan for Joint Base Langley Eustis–Langley*. Prepared by AECOM Technical Services, Inc.
- JBLE–Langley. 2024b. *Illicit Discharge Detection and Elimination Procedure Manual*. Prepared by AECOM Technical Services, Inc.
- JBLE–Langley. 2024c. *JBLE–Langley MS4 Program Plan*. Prepared by AECOM Technical Services, Inc.
- VDEQ. 2017. *Total Maximum Daily Loads of Bacteria for Back River in York County and the Cities of Hampton, Poquoson, and Newport News, Virginia*. Prepared by Virginia Institute of Marine Science.
- VDEQ. 2023. *VPDES General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, VPDES Permit Registration No. VA040140*.

LIST OF ACRONYMS

AFCEC	Air Force Civil Engineer Center
BASH	Bird/Animal Aircraft Strike Hazard
EPA	Environmental Protection Agency
IDDE	Illicit Discharge Detection and Elimination
JBLE–Langley	Joint Base Langley Eustis–Langley
MS4	Municipal Separate Storm Sewer System
TMDL	Total Maximum Daily Load
VDEQ	Virginia Department of Environmental Quality

Municipal Separate Storm Sewer System Annual Report Certification

As required by Part IV.K.2. of General Permit No. VAR040140, all reports required by commonwealth permits and other information requested by the board shall be signed by a principal executive officer or ranking elected official as described in Part IV.K.1.c or a duly authorized representative.

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.

Type or Print the following information:

Name: Ms. Brenda W. Cook Area Code and Telephone No.: (757) 764-2025

Official Title: Deputy Base Civil Engineer

Signature: _____ Date Signed: _____

Permit Number: VAR040140 MS4 Name: JBLE–Langley