

## FINAL Municipal Separate Storm Sewer System (MS4) Annual Report

JBLE–Langley Virginia

Permit Year : 1 July 2020 - 30 June 2021



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

August 2021

## **Table of Contents**

List of Acronyms and Abbreviations	ii
Municipal Separate Storm Sewer System Program Plan Certification	iii
Section 1: Introduction	1
Section 2: Storm Sewer System Information	2
Permit Holder	2
Facility Information	2
Mailing Address	2
Population Served	2
MS4 Service Area	2
MS4 Conveyance System	3
Total Maximum Daily Load (TMDL) and Impaired Stream Identification	4
Section 3: Water Quality Programs and Guidance	5
Local Programs and Guidance	5
Commonwealth Programs	5
Section 4: Minimum Control Measures	6
MCM 1: Public Education and Outreach	7
MCM 2: Public Involvement/Participation	. 11
MCM 3: Illicit Discharge Detection and Elimination	. 16
MCM 4: Construction Site Stormwater Runoff Control	. 18
MCM 5: Post-Construction Stormwater Management in New Development and	20
MCM 6: Pollution Provention / Good Housekeeping for Municipal Operations	. 20 22
Section 5: TMDL Action Plana	. 22
	. 20
SU1: TMDL Special Conditions Compliance for the Chesapeake Bay TMDL	. 26
SUZ: TIVIDE Special Conditions Compliance other than the Chesapeake Bay TMDE	. 20

## **List of Tables**

Table 1. Subwatersheds

## **List of Attachments**

- Attachment 1. Illicit Discharge Detection Elimination Maps
- Attachment 2. Stormwater Management Educational Brochures
- Attachment 3. Public Involvement/Participation Documentation
- Attachment 4. Illicit Discharge Investigation Details
- Attachment 5. NASA Interconnectivity Notification
- Attachment 6. Stormwater Management Facility Inventory Tracking Spreadsheet
- Attachment 7. Chesapeake Bay Total Maximum Daily Load Action Plan Implementation Status Memo
- Attachment 8. Bacteria TMDL Action Plan Implementation Status Memo

## List of Acronyms and Abbreviations

633 CES/CEIE	633d Civil Engineer Squadron/Environmental Element
BMP	Best Management Practice
CBAT	Chesapeake Bay Action Team
EMS	Environmental Management System
EPA	Environmental Protection Agency
FOG	Fats, Oils and Grease
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
ISO	International Organization for Standardization
JBLE-Langley	Joint Base Langley Eustis–Langley
LFH	Langley Family Housing
MCM	Minimum Control Measure
MFH	Military Family Housing
MS4	Municipal Separate Storm Sewer System
NMP	Nutrient Management Plan
O&M	Operation and Maintenance
P4	Public-Public; Public-Private
POC	Pollutant of Concern
POV	Privately Owned Vehicle
PY	Permit Year
SC	Special Condition
SCM	Stormwater Control Measure
SWCB	State Water Control Board
SWM	Stormwater Management
SMF	Stormwater Management Facility
SWPPP	Stormwater Pollution Prevention Plan
TEACH	The Environmental Awareness Course Hub
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UEC	Unit Environmental Coordinator
VDEQ	Virginia Department of Environmental Quality
VESCL	Virginia Erosion and Sediment Control Law
VESCP	Virginia Erosion and Sediment Control Program
WLA	Wasteload Allocation

#### Municipal Separate Storm Sewer System Program Plan Certification

As required by Part III.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 office or ranking elected official as described in Part III.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: M	ls. Brenda W. Cook	Area Code and Telephone No.:	(757) 764-2025
Official Title:	Deputy Base Civil Engineer		
Signature:	Brender Carl	Date Signed:	235p21
Permit Numb	er: VAR040140 MS	64 Name:JBLE-Langle	У

## Section 1: Introduction

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 2018. 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.2.e. 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.

This report describes the progress and status of JBLE–Langley's MS4 Program during Permit Year (PY) 3 from 01 July 2020 to 30 June 2021.

The remainder of this annual report is presented as follows:

- Section 2 Provides an overview of the MS4 including its physical characteristics
- Section 3 Presents a listing of the base's stormwater program guidance
- Section 4 Discusses the minimum control measures (MCM) JBLE–Langley is implementing under the MS4 permit
- Section 5 Reviews the special conditions (SC) JBLE–Langley is implementing under this MS4 permit

These sections are supported by the following attachments:

- Attachment 1 Illicit Discharge Detection and Elimination (IDDE) Maps
- Attachment 2 Stormwater Management Educational Brochures
- Attachment 3 Public Involvement/Participation Documentation
- Attachment 4 IDDE Investigation Details
- Attachment 5 NASA Interconnectivity Notification
- Attachment 6 Stormwater Management Facility (SMF) Inventory Tracking Spreadsheet
- Attachment 7 Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan Implementation Status Memo
- Attachment 8 Bacteria TMDL Action Plan Implementation Status Memo

## Section 2: Storm Sewer System Information

#### Permit Holder

Commander, 633d Air Base Wing 125 Mabry Ave JBLE–Langley VA 23665

#### **Facility Information**

JBLE–Langley Hampton VA MS4 General Permit No. VAR040140

#### **Mailing Address**

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

#### **Population Served**

The total population attached to the base is estimated at 28,385, comprised of approximately 10,002 military personnel and 15,530 dependents living on the base, as well as approximately 2,853 civilian non-residents who commute to the base daily.

#### **MS4 Service Area**

JBLE–Langley is located just north of the City of Hampton, Virginia which is part of the Norfolk, Hampton and Newport News metropolitan area. The base is located on the southern end of the lower Virginia peninsula and bordered by the Back River to the north, south and east. Smaller waterbodies on or bordering the base include Tabbs Creek, Brown's Creek, Tide Mill Creek and Brick Kiln Creek, which are tributaries to the Back River. The base occupies approximately 3,640 acres and houses a variety of military organizations and support activities. Most of the development is located at the southern end of the base. A golf course and flightline are located near the center of the base.

The NASA Langley Research Center is also located on JBLE–Langley property. However, the NASA Langley Research Center is covered under its own MS4 permit are not subject to the permit terms for JBLE–Langley.

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.

#### MS4 Conveyance System

JBLE–Langley's stormwater conveyance system consists of sheet flow areas, swales, ditches and pipes. The base has mapped the stormwater system for JBLE–Langley as well as the structural stormwater management facilities (SMF) using Geographic Information System (GIS).

There are two subwatersheds that include portions of JBLE–Langley. These include the Northwest Branch Back River and Southwest Branch Back River. River basins, streams or other bodies of water into which the stormwater from the MS4 discharges are shown in Table 1. The table lists the subwatershed and waterbody that receive stormwater runoff from the MS4 jurisdictional area.

Table 1. Subwatersheds				
Subwatershed (Hydrologic Unit Code)	Waterbody Name	Waterbody ID <sup>1</sup>		
Northwest Branch Back River (020801080102) (VAHU6: CB22)	Northwest Branch Back River – Lower	VAT-C07E_NWB02A06		
	Tabbs Creek – Northwest Branch Back River	VAT-C07E_TBC01A04		
	Brick Kiln Creek (including Big Bethel Reservoir)	VAT-C07E_BRK01A06		
	Southwest Branch Back River – Incl Tides Mill Creek	VAT-C07E_SWB1A08		
Southwest Branch Back River	Southwest Branch Back River – DSS OPEN	VAT-C07E_SWB02B10		
(VAHU6: CB23)	Southwest Branch Back River – Mouth	VATC07E_SWB02A08		
	Unsegmented Estuaries in Back River – DSS	VAT-C07E_ZZZ01B12		

Note:

<sup>1</sup> The Waterbody ID is referenced from the Final 2020 305(b)/303(d) Water Quality Assessment Integrated Report.

Part I.E.3.a (1) of MS4 Permit No. VAR040140 requires that JBLE–Langley maintain a stormwater drainage system map that shows the location of all MS4 outfalls as well as the name and location of all waters receiving discharges from the MS4 outfalls and the associated hydrologic unit code. A map is included as Attachment 1. In PY2, VDEQ approved the reclassification of three industrial outfalls (024, 050 and 083) to MS4 outfalls. These outfalls have been added to the MS4 outfall inventory and were inspected in PY2 and PY3.

#### Total Maximum Daily Load (TMDL) and Impaired Stream Identification

#### Total Maximum Daily Loads Other than the Chesapeake Bay TMDL

The U.S. Environmental Protection Agency (EPA) and/or VDEQ have the authority to establish and issue a TMDL allocation on a body of water or receiving stream. The Northwest Branch Back River and Southwest Back River subwatersheds are subject to a TMDL for fecal coliform bacteria. On 28 April 2017, the Virginia State Water Control Board (SWCB) approved the revision to the 2014 TMDL to address fecal coliform bacteria impairment in the Back River. The Northwest Branch Back River and Southwest Branch Back River impaired segments (waterbody ID# VAT-C07E) are considered Condemned Shellfish Areas that do not conform with the Virginia Department of Health fecal coliform standards for shellfish harvesting. These waterbodies receive runoff from JBLE–Langley and the TMDL for these waterbodies include wasteload allocation (WLA) assignments to JBLE–Langley.

#### Chesapeake Bay TMDL

In 2010, the EPA established the Chesapeake Bay TMDL to address pollutants of concern (POC) in the Chesapeake Bay. The POCs include excess nitrogen, phosphorus and total suspended solids (TSS). The Chesapeake Bay watershed encompasses over 64,000 square miles across the District of Columbia and large sections of Delaware, Maryland, New York, Pennsylvania, West Virginia and Virginia. JBLE–Langley sits within the Chesapeake Bay Watershed.

In the Phase I and Phase II Chesapeake Bay Watershed Implementation Plan for the Chesapeake Bay TMDL, the Commonwealth of Virginia committed to a phased approach to reducing the POCs discharging from MS4s. Part II.A.11(a)-(f) of the MS4 Permit No. VAR040140 requires JBLE–Langley to prepare a Chesapeake Bay TMDL Action Plan that demonstrates future plans to meet the POC reductions.

## **Section 3: Water Quality Programs and Guidance**

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

#### Local Programs and Guidance

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

- JBLE–Langley Environmental Policy Statement (24 August 2017)
- JBLE–Langley Structural Stormwater Control Measures (SCM) Inventory, Annual Inspection and Management Plan (September 2020)
- JBLE–Langley IDDE Procedure Manual (July 2017
- JBLE–Langley MS4 Program Plan (January 2019)
- Good Housekeeping Procedures (July 2017)
  - o Road, Street and Parking Lot Maintenance
  - Application, Storage, Transport, and Disposal of Pesticides and Fertilizers
  - Equipment Maintenance
- Nutrient Management Plans (March 2019)
  - Eaglewood Golf Course (June 2017)
  - Langley Family Housing/Hunt Companies (March 2019)
  - Force Support Squadron Athletic Fields (March 2019)

#### Commonwealth Programs

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

- Erosion and Sedimentation Program The Virginia Erosion and Sediment Control Law (VESCL) delegates the authority to administer a Virginia Erosion and Sediment Control Program (VESCP) to local municipalities. Local municipal VESCPs must be approved by the SWCB; however, this is an optional requirement for JBLE–Langley per the VESCL. JBLE–Langley has not developed a specific erosion and sediment control program for the base. The base utilizes their MS4 Program Plan to outline roles and responsibilities, as well as procedures related to erosion and sediment control.
- 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 4: Minimum Control Measures

This section discusses the MCMs that JBLE–Langley is implementing under MS4 Permit No. VAR040140. MCMs include:

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement/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/Good Housekeeping for Municipal Operations

Details regarding program requirements, achievements and planned initiatives are discussed on the following pages.

#### MCM 1: Public Education and Outreach

JBLE–Langley is required to develop and implement a public education and outreach program with the objective to comply with commonwealth and local requirements to educate the base population regarding the impacts of stormwater discharges on the receiving waters as well as measures that the community can take to reduce the introduction of pollutants to the stormwater drainage system.

JBLE–Langley utilizes a combination of relevant messages and outreach materials to educate target audiences for each of the three high priority water quality issues, as well as other stormwater topics of interest to the public (using a minimum of two of the strategies listed on Part I.E.1.d Table 1). The table below outlines program achievements during PY3 in accordance with Part I.E.1.g.(2) of the MS4 permit. Additional details are included in the JBLE–Langley MS4 Program Plan. Examples of the stormwater management informational brochures that are intended for distribution are included in Attachment 2. Distribution of these materials will continue in PY4.

MCM 1: Public Education and Outreach				
А	В	С	D	
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4	
Permit Ref.	Part I.E.1 Public Education and Outreach			
Identify three high priority water quality issues.	<ul> <li>Continued to monitor previously identified and refined high priority water quality issues, which include:</li> <li>Proper wash procedures</li> <li>Controlling pet wastes at the JBLE–Langley Horse Stables and Residences</li> <li>Spill and illicit discharge reduction</li> </ul>	Annual	Modify our high-priority issues to target stormwater problems encountered during PY3 to focus on: 1. Awareness of our receiving waters and their impairments; 2. Clean Recreation; 3. Spill and Illicit Discharge Reduction	

MCM 1: Public Education and Outreach			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.1 Public Education and Outreach (Continue	ed)	
Use a minimum of two strategies from Part I.E.1.d, Table 1 – Media materials, training materials, speaking engagements and traditional written materials	<ul> <li>Material used for training, electronic and physical information handouts</li> <li><b>1. Traditional written materials</b>: "Be the Solution to Stormwater Pollution", "Preventing Pollution from Pet Waste" and "Car Maintenance and Pollution Prevention" brochures.</li> <li><b>2. Alternative materials</b>: Pet waste bags/holders</li> <li><b>3. Media Materials</b>: Plastic bag TREX Challenge.</li> </ul>	Annual evaluation / ongoing distribution of materials	<ol> <li>Update outreach materials including brochures and education materials by Dec 2021.</li> <li>Collaborate with FSS to add boat maintenance and environmental regulatory information to Marina Slip Contract</li> <li>Increase the number of cleanup events to at least two.</li> <li>Establish and grow JBLE– Langley Environmental Facebook page to 100 followers.</li> <li>Speaking engagement with JBLE-Langley students for STEM outreach</li> </ol>
High Priority Issue 1: Proper wash procedures Target Audience: JBLE– Langley residents and employees Goal: Provide information regarding proper washing procedures	633 CES/CEIE keeps a brochure titled "Vehicle Washing Brochure" on the JBLE–Langley Environmental website. <u>https://www.jble.af.mil/About-Us/Units/Air-Force/Langley-Environmental/</u> ) and was distributed during World Water Day and Earth Week outreach events.	Ongoing	<ol> <li>Collaborate with LFH Privatization Company to update washing brochure to include with "welcome" packet for new residents.</li> <li>Advertise use of the automatic car washing facilities via social media (e.g., Facebook, Twitter).</li> <li>Continue to distribute brochures during in-person outreach events.</li> </ol>

MCM 1: Public Education and Outreach			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.1 Public Education and Outreach (Continue	ed)	
High Priority Issue 2: Controlling Pet Waste Target Audience: LFH residents and personnel with pets Goal: Educate pet owners regarding proper disposal of pet waste	<ol> <li>JBLE-Langley hosts horse stables that are managed by the Langley Saddle Club. Authorized personnel board their horses at this facility. Stable bedding and manure are collected and stored under cover; however, horses use pastureland as well. Manure is left on pasture- land, which is considered an agricultural land use.</li> <li>Conducted outreach activities for World Water Day (20 March 2021) including discussions about pet waste pollution prevention, distribution of "Preventing Pollution from Pet Waste" brochures as well as dog waste bags/holders. 52 dog waste bags/holders were handed out.</li> <li>633 CES/CEIE keeps a brochure titled "Pet Waste Brochure" on the JBLE-Langley Environmental website (https://www.jble.af.mil/About-Us/Units/Langley- AFB/Langley-Environmental/) and provided copies to the LFH privatization company for their residents.</li> </ol>	Ongoing	<ol> <li>Continue to disseminate information regarding controlling pet wastes via social media (e.g., Facebook, Twitter).</li> <li>Update the brochures and distribute during outreach events.</li> <li>Develop a relationship with the Langley Saddle Club for targeted outreach.</li> </ol>

MCM 1: Public Education and Outreach			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.1 Public Education and Outreach (Continue	ed)	
High Priority Issue 3: Spill and Illicit Discharge Reduction. Target Audience: JBLE– Langley residents and employees Goal: Provide information regarding proper disposal of household hazardous waste	<ol> <li>Stormwater pollution prevention training was provided to base personnel (active duty, civilian and contractors) via The Environmental Awareness Course Hub (TEACH).</li> <li>633 CES/CEIE keeps the Stormwater Pollution Prevention brochure on the JBLE–Langley Environmental website (https://www.jble.af.mil/About-Us/Units/Langley- <u>AFB/Langley-Environmental/</u>)</li> <li>JBLE–Langley advertised the Household Chemical Collection days (8 and 15 May 2021) via an all hands email to base personnel as well as provided to the LFH privatization contractor to inform residents.</li> </ol>	Ongoing	<ol> <li>Develop and post information to the JBLE– Langley pages at least semi- annually during the PY.</li> <li>Send a mass email to MFH residents regarding illegal dumping at least semi- annually during the PY.</li> <li>Continue to host training via TEACH, but expand training to trackable hubs like Sharepoint.</li> <li>Require food trucks requesting to operate on base have employees take fats, oil and grease (FOG) management training (e.g., HRFOG).</li> </ol>

#### MCM 2: Public Involvement/Participation

The base is required to cultivate a public involvement and participation program with the objective to comply with Commonwealth and local public notice requirements, implementing four activities per year from a minimum of two of the categories listed in Part I.E.2 c. Table 2. JBLE–Langley has taken steps to implement the program BMPs as specified in Part I.E.2 of the MS4 permit.

MCM 2: Public Involvement/Participation			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.2: Public Involvement and Participation Mechanisms for public involvement that provide for inp	ut on stormwater issues ar	nd the stormwater program.
Maintain a website with the MS4 Program and stormwater information.	633 CES/CEIE maintains a website that provides information to the public, including the MS4 Program Plan and the MS4 Annual Reports. The website is located here: <u>(https://www.jble.af.mil/About- Us/Units/Langley-AFB/Langley-Environmental/)</u>	Ongoing	Continue to maintain the JBLE–Langley Environmental website and post educational and reference information for the base population.
Summary and response of public input on the MS4 Program.	JBLE–Langley posted the PY2 MS4 Annual Report on the JBLE–Langley Environmental website for public review and comment. There were no comments received on the MS4 Program. Contact information for 633 CES/CEIE is also posted to the website if there are further comments.	Ongoing	Continue to make documents related to the MS4 Program available to the public for comment and respond to any input provided.

MCM 2: Public Involvement/Participation			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.2.f(3)-(4): Volunteer Opportunities		
Provide volunteer opportunities designed to promote ongoing public participation.	<ol> <li>Earth Week (19 - 23 April 2021) – Earth Week events were conducted daily to enhance awareness of environmental issues related to JBLE–Langley. Events included:         <ul> <li>a. 19 April: The documentary "FRONTLINE: Poisoned Waters" was available online for viewing and focused on the impacts that waterway pollution has on the ecosystem and affects everyone. A list of other recommended Earth Week related films was also distributed.</li> <li>b. 20 April:</li></ul></li></ol>	Ongoing	<ol> <li>Continue to host public participation events during Earth Week, World Water Day, America Recycles Day, Clean the Bay Day, and others.</li> <li>Track the number of volunteers and/or pounds of bags/litter collected.</li> </ol>

MCM 2: Public Involvement/Participation			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.2.f(3)-(4): Volunteer Opportunities (Continu	ied)	
Provide volunteer opportunities designed to promote ongoing public participation. (continued)	<ul> <li>c. 21 April: <ul> <li>i. Community litter cleanup at Bethel Family Housing. 20 volunteers helped collect and remove debris and litter from the off-base family housing area.</li> <li>ii. The Chesapeake Bay Foundation hosted a webinar titled "Plastics and Microplastics – An Emerging Global Issue.</li> </ul> </li> <li>d. 22 April: <ul> <li>i. 633 CES/CEIE hosted an Environmental Education Fair at the BX. The booth included take home activities for kids, environmental program brochures (i.e., pet waste and stormwater pollution prevention),flyers advertising e-waste recycling locations, and free JBLE–Langley Environmental gear. Giveaways included, pet waste bag containers with clips, reusable straws, reusable water bottles, reusable grocery bags, recycled notebooks, as well as magnets and pens with the JBLE–Langley Environmental Element phone number.</li> </ul> </li> <li>e. 23 April: <ul> <li>i. Virtual tour of the Smithsonian National Zoo Reptile Discovery Center.</li> <li>ii. Arbor Day tree planting ceremony celebrating JBLE–Langley's 21st year as a Tree City USA community and the 22nd annual Arbor Day Celebration.</li> </ul> </li> </ul>	Ongoing	See above.

MCM 2: Public Involvement/Participation				
А	В	С	D	
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4	
Permit Ref.	Part I.E.2.f(3)-(4): Volunteer Opportunities (Continu	ied)		
Provide volunteer opportunities designed to promote ongoing public participation. (continued)	<ol> <li>TREX Challenge – 633 CES/CEIE hosted a basewide plastic bag and film collection drive ending on Earth Day (22 April 2021). Fliers were distributed and posted around the base advertising to Airmen and civilians to bring in plastic bags and plastic film.</li> <li>If 500 lbs. of plastic were collected, TREX would donate a bench made of recycled plastic material. The 500 lbs. goal was met, and the base will receive a bench made of recycled plastic material.</li> <li>Clean the Bay Week – Daily events were held from 31 May– 05 June 2021 where volunteers helped with removing trash from the waterfront areas around the installation. All volunteers participated in discussions about how stormwater pollution on the installation affects the watersheds A total of 92 volunteers participate in Clean the Bay Week and collected over 2,000 lbs. of trash. On 05 June 2021, a local Boy Scout Troop volunteered for Clean the Bay Week to pick up trash from JBLE–Langley. Fifteen members of the Troop participated.</li> </ol>	Annual	See above.	

MCM 2: Public Involvement/Participation				
А	В	С	D	
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4	
Permit Ref.	Part I.E.2.f(3)-(4): Volunteer Opportunities (Continu	ied)	-	
Engage community members in partnerships led by JBLE– Langley that focus on environmental issues and goals.	<ol> <li>Environmental Partnership – JBLE–Langley participates in the Secretary of the Air Force Program to partner with their local public and private neighbors. The Public-Public; Public- Private (P4) Partnership Program seeks to identify and develop opportunities to share resources, increase efficiency and improve effectiveness of operational, educational and recreational programs. The JBLE P4 program is currently focused on the Virginia Peninsula.</li> <li>Due to some COVID-19 restrictions still being in place, in person activities were not conducted at local schools. However, during Earth Week, a slide presentation was given to the Booker Elementary School to share with the students on environmental and stormwater issues.</li> </ol>	Ongoing	Continue to cultivate opportunities in the P4 Partnership Program. Resume in-person activities.	

#### MCM 3: Illicit Discharge Detection and Elimination

The base is required to develop, implement and enforce a program to detect and eliminate illicit discharges into the MS4. JBLE– Langley has taken steps to implement the BMPs as specified in Part I.E.3 of the permit.

MCM 3: Illicit Discharge Detection and Elimination			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.1 Public Education and Outreach		
Confirmation statement that the MS4 map and information table have been updated to reflect any changes to the MS4 occurring on or before 30 June of the reporting year by 1 October.	Updated MS4 map to reflect all changes from PY2 prior to 01 October 2020 as required by Part I.E.3.a.(4).	Annual	Update the MS4 map and information table as needed by 01 October 2021 following the end of the PY.
Screen non-industrial outfalls and maintain outfall inspection records.	<ol> <li>Fifty-two (52) of the 98 non-industrial outfalls were inspected during PY3. Details regarding the inspection findings are included on the outfall inspection forms and in the <i>PY3 Dry Weather</i> <i>Outfall Monitoring Report.</i></li> <li>Copies of the outfall inspection forms are maintained by 633 CES/CEIE and will be made available upon request.</li> <li>The <i>IDDE Procedure Manual</i> was evaluated to determine if updates to the MS4 outfalls were needed.</li> <li>Submitted a scope of work for a stream restoration project for Brick Kiln Creek in the LFH area.</li> </ol>	<ol> <li>Annual</li> <li>Ongoing</li> <li>Annual</li> </ol>	<ol> <li>Continue to track and inspect the non-industrial outfalls as required by the <i>IDDE Procedure Manual</i></li> <li>Continue to maintain inspection forms on 633 CES/CEIE servers.</li> <li>Continue to monitor for any necessary updates to the IDDE Procedure Manual.</li> </ol>

MCM 3: Illicit Discharge Detection and Elimination			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.1 Public Education and Outreach (Continue	ed)	
Investigations of suspected illicit discharges.	<ol> <li>JBLE-Langley personnel utilized the IDDE Procedure Manual to investigate potential illicit discharges.</li> <li>Detailed descriptions of each of the illicit discharge investigations are included in Attachment 4.</li> <li>Investigations into potential illicit discharges include:         <ul> <li>a. Approximately 19,000 gallons of contaminated stormwater from dewatering a pit with corrosive material was discharged to the stormwater collection system and flowed to Outfall 32 (September 2020).</li> </ul> </li> <li>Reported all spills or unauthorized releases, whether it entered the MS4 or not, in accordance with AFI 32-7047, Environmental Compliance Release and Reporting Inspection Reporting. Logged incidents in the spill database maintained by the 633 CES/CEIE Spill Program Manager.</li> </ol>	Annual / Ongoing	<ol> <li>Continue to utilize IDDE procedures to investigate potential illicit discharges.</li> <li>Continue to report all spills or unauthorized releases, whether it enters the MS4 or not.</li> <li>Log the incident in the spill database maintained by the 633 CES/CEIE Spill Program Manager.</li> </ol>
Permit Ref.	Part I.E.3.a(5): Downstream Adjacent MS4 Notifica	tion	
Document MS4 Interconnections.	The NASA Langley Research Center MS4 is connected to the JBLE–Langley MS4. The email notification of interconnectivity from NASA is provided in Attachment 5.	Annual	633 CES/CEIE will continue to monitor the MS4 area to ensure there are no interconnections with other MS4s.

#### MCM 4: Construction Site Stormwater Runoff Control

The base is required to comply with the Virginia Stormwater Management Program in order to maintain compliance with the Construction Site Runoff Controls. These controls are designed to assist with the development, implementation and enforcement of an Erosion and Sediment Control Program to reduce the pollutants (e.g., total suspended solids, total phosphorus and total nitrogen) related to "land-disturbing activities including clearing, grading or excavation that results in a land disturbance equal to or greater than 10,000 square feet and less than one acre in all areas of jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations (<u>9VAC25-830</u>) adopted pursuant to the Chesapeake Bay Preservation Act." The base has taken steps to implement the program BMPs as specified in Part I.E.4 of the permit.

MCM 4: Construction Site Stormwater Runoff Control			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.4.d(1)-(2): Confirmation Statement		
Confirmation statement of land disturbing activities.	Conducted land disturbing projects, that occurred during the reporting period, in accordance with the current department approved standards and specifications for erosion and sediment control.	Annual	Continue to provide confirmation statement in Annual Report of land disturbing activities.
Permit Ref.	Part I.E.4.d(2)-(3): Track regulated land-disturbing	activities	
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.	<ol> <li>Hospital Cap (VAR10M314)         <ul> <li>a. Total number of acres disturbed: 8.70 acres</li> <li>b. Frequency of internal inspections performed: Daily engineering inspections performed by the U.S. Army Corps of Engineers (USACE); One MS4 SWM/Erosion and Sediment Control inspection was performed.</li> <li>c. Total number of VDEQ inspections performed: 0 (Last inspection performed 21 January 2020 in PY2)</li> <li>d. Enforcement Actions: None</li> </ul> </li> </ol>	Annual	<ul> <li>Continue to track regulated land-disturbing activities, including:</li> <li>1. Number of on-going land disturbing activities.</li> <li>2. Number of acres disturbed.</li> <li>3. Number of inspections conducted.</li> </ul>

MCM 4: Construction Site Stormwater Runoff Control			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.4.d(2)-(3): Track regulated land-disturbing	activities (Continued)	
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. (continued)	<ol> <li>Clear Zone (VAR10L932)         <ul> <li>a. Total number of acres disturbed: 90 acres</li> <li>b. Frequency of internal inspections performed: Daily engineering inspections</li> <li>c. Total number of VDEQ inspections performed: 0 (Last inspection performed 21 January 2020 in PY2)</li> <li>d. Enforcement Actions: None</li> </ul> </li> <li>Secondary Containment Refueler Parking Area (VAR10O918)         <ul> <li>a. Construction General Permit Issued 11 February 2021</li> <li>b. Total number of acres disturbed: 1.98</li> <li>c. Frequency of internal inspections performed: Daily engineering inspections</li> <li>d. Total number of VDEQ inspections</li> <li>d. Total number of VDEQ inspections</li> <li>d. Total number of VDEQ inspections</li> </ul> </li> </ol>	Annual	See above.
Track the enforcement actions incurred during the PY and the corrective actions taken.	There were no enforcement actions in PY3.	Annual	Continue to track enforcement actions throughout the PY.
Track the construction permits that are closed during the PY.	One construction permit was closed out during PY3: Fuel Pier (VAR100514): Notice of Termination received 05 April 2021	Annual	Continue to track if any construction permits are closed during the PY.

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

The base is required to develop, implement and enforce a program to address stormwater runoff related to new development and redevelopment projects throughout the service area, including a combination of structural and non-structural BMPs. In addition, JBLE–Langley is required to ensure that the structural BMPs are functional through long term operation and maintenance (O&M) practices. The base has taken steps to implement the program BMPs as specified in Part I.E.5 of the permit. SWM facilities are also known as BMPs, SCMs, or SMFs.

MCM 5: Post Construction Stormwater Management			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.5.i(1)-(5) Post-Construction Stormwater Ma Prior Developed Lands	nagement in New Devel	opment and Development on
Maintain an updated electronic database of all known operator-owned and privately-owned SMFs that discharge into the MS4.	JBLE–Langley utilized an excel spreadsheet to track SMFs. The spreadsheet is included as Attachment 6.	Ongoing	Continue to maintain an SMF inventory via an excel spreadsheet and submit with the Annual Report.
Identify new SMFs brought online during the PY.	A total of four SMFs were brought online during PY3. These include three dry swales associated with the GVFF (SMFs 082, 083, 084) and the dry swale associated with the Fuel Pier (SMF 085). All SMFs were inventoried and inspected during PY3. These SMFs were incorrectly listed as being brought online during PY2 in the PY2 MS4 Annual Report.	Annual	Track construction projects and planned SMFs and include in the inventory as they are brought online.

MCM 5: Post Construction Stormwater Management			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part I.E.5.i(1)-(5) Post-Construction Stormwater Ma Prior Developed Lands (Continued)	nagement in New Devel	opment and Development on
Inventory and inspect SMFs and conduct O&M to maintain SMF functionality.	<ol> <li>Completed the annual inspection of the 84 SMFs on base.</li> <li>Updated the SMF Inventory, Inspection and Management Plan.</li> <li>Performed maintenance on six (6) SMFs, including the removal of invasive and undesirable vegetation.</li> <li>Submitted scopes of work to study the best course of action to study the options to rehab or retrofit deficient SMFs.</li> </ol>	<ol> <li>Annual inspections</li> <li>Ongoing maintenance</li> </ol>	<ol> <li>Continue to inspect and monitor all SMFs on base.</li> <li>Submit programming for SMF rehab and maintenance based on annual SMF inspections.</li> </ol>
Provide input on upcoming construction projects and the planned post construction stormwater management strategies.	Work closely with 633 CES planning and engineering departments to review plans and specifications associated with upcoming construction projects and provide input.	Ongoing	Continue to work closely on emerging construction projects and provide input on planned SMFs.
Permit Ref.	Part I.E.5 (4)-(5): Confirmation Statements	-	
Provide confirmation of VDEQ BMP Warehouse Submission.	The electronically reported BMPs were submitted to the VDEQ for inclusion in the BMP Warehouse in accordance with Part I.E.5.g in September 2020. Confirmation of inclusion by VDEQ was provided on 01 October 2021.	Annual	Send electronically-reported BMPs to VDEQ BMP Warehouse as needed.

#### MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations

The base is required to develop and implement a program to address pollution prevention and good housekeeping procedures, including a training program for base personnel and the community. JBLE–Langley has taken steps to implement the program BMPs as specified in Part I.E.6 of the permit.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part 1.E.6.q(1): Develop and implement daily opera	ational procedures	
Implement Environmental Management System (EMS)	JBLE–Langley utilizes an Environmental Management System (EMS) that conforms to International Organization for Standardization (ISO) 14001:2004, to manage environmental program requirements.	Ongoing	Continue to implement an EMS that conforms to ISO 14001:2004.
Maintain Environmental Policy Statement.	JBLE–Langley has issued an <i>Environmental Policy</i> <i>Statement</i> and has published it on their website (https://www.jble.af.mil/About-Us/Units/Langley- AFB/Langley-Environmental/).	Ongoing	Continue to host the Environmental Policy Statement on the JBLE– Langley environmental website.
Implement Good Housekeeping Procedures and training materials	<ol> <li>JBLE–Langley is implementing good housekeeping procedures and training materials relevant to stormwater for the following areas:         <ul> <li>a. Road, Street and Parking Lot Maintenance</li> <li>b. Equipment Maintenance</li> <li>c. Application, Storage, Transport and Disposal of Pesticides and Fertilizers</li> <li>d. IDDE Procedure Manual</li> </ul> </li> </ol>	Ongoing	<ol> <li>Develop additional P2 and good housekeeping plans as needed for newly identified municipal operation areas.</li> </ol>

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part 1.E.6.q(1): Develop and implement daily opera	ational procedures (Con	tinued)
Implement Good Housekeeping Procedures and training materials. (continued)	<ol> <li>Copies of the above training material are available upon request.</li> </ol>	Ongoing	<ol> <li>Post procedures on the JBLE–Langley Environmental website and advertise them on the JBLE–Langley Facebook pages.</li> <li>Provide hands-on training for the procedures to JBLE–Langley personnel, upload training to TEACH, shift all remote training to trackable SharePoint online hub or individual emails with response required.</li> <li>Created and currently implementing a new written training plan per Part I.E.6.m to better track training.</li> </ol>
Permit Ref.	Part 1.E.6.q (2)-(3): Develop and implement require	ed Stormwater Pollution	Prevention Plans (SWPPP)
Implement Comprehensive SWPPP.	JBLE–Langley implements its comprehensive SWPPP, designed to satisfy MS4 and industrial permit requirements.	Ongoing	Continue to update the comprehensive SWPPP with MS4 high priority facilities as needed.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations			
Α	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part 1.E.6.q (2)-(3): Develop and implement require (Continued)	ed Stormwater Pollution	Prevention Plans (SWPPP)
Implement High Priority SWPPPs.	<ol> <li>JBLE–Langley has a list of high priority non- industrial facilities and has implemented the SWPPPs for high priority MS4 facilities (Auto Hobby Shop and POV Wash Rack, AAFES Mini Mall and Car Wash, Base Exchange, Commissary, Langley Marina, Eaglewood Golf Course, LFH Maintenance Facility, and Government Vehicle Fueling Facility [GVFF]).</li> <li>Continued to review and update the list of municipal/non-industrial high priority facilities and determine if they require a SWPPP.</li> </ol>	Ongoing	<ol> <li>Conduct the annual CSCE of the high-priority non- industrial areas.</li> <li>Continue to review and update the list of municipal/non-industrial high priority facilities and determine if they require a SWPPP in PY4.</li> <li>Create additional SWPPPs if new municipal/non- industrial high priority facilities are identified.</li> </ol>
Permit Ref.	Part 1.E.6.q (4): Develop and implement turf and la	ndscape nutrient manaç	gement plans (NMP)
Implement Eaglewood Golf Course NMP.	<ol> <li>Acres: 119.2 acres</li> <li>Valid through 12 June 2022</li> </ol>	Ongoing	Continue to implement the Eaglewood Golf Course NMP.
Implement Athletic Fields NMP.	<ol> <li>Acres: 11.9 acres</li> <li>Valid through 08 November 2023</li> </ol>	Ongoing	Continue to implement the Athletic Fields NMP.
Implement Langley Family Housing (LFH) NMP.	<ol> <li>Acres: 21.2 acres</li> <li>Valid through 08 November 2023</li> </ol>	Ongoing	Continue to implement the LFH NMP.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations			
А	В	С	D
Required Action(s)	PY3 Measurable Goal(s)	Schedule for Implementation	Initiatives Planned for PY4
Permit Ref.	Part 1.E.6.q (5): Training events conducted in acco	rdance with Part I E 6 m	
Provide stormwater awareness training.	Stormwater awareness courses were provided in an online format through the TEACH website. The online training portal is currently unable to provide data with specific enrollment/completion numbers. New initiatives will phase out tracking through TEACH as we switch to in-person and trackable remote hubs.	Ongoing	<ol> <li>Conduct stormwater pollution prevention training and track base personnel that have received training.</li> <li>Upload good housekeeping procedure training course materials to TEACH, and shift all remote training to trackable SharePoint online hub or individual emails with response required.</li> </ol>
Provide environmental related courses.	Additional relevant environmental courses were available to personnel on TEACH. These courses cover the following environmental topics: water; wastewater; spill response; and petroleum, oils and lubricant management.	Ongoing	Continue to provide environmental courses on TEACH. Duplicate all training to SharePoint or other trackable online hub.

## Section 5: TMDL Action Plans

#### SC1: TMDL Special Conditions Compliance for the Chesapeake Bay TMDL

JBLE–Langley's Draft Phase II Chesapeake Bay TMDL Action Plan was developed and submitted with the MS4 Permit Registration Statement. The Action Plan presented a discussion of the compliance requirements for JBLE–Langley.

The Action Plan presents the JBLE–Langley estimated load contribution, required load reductions and pollutant reduction credits. The plan also reported progress made toward meeting the 40% cumulative pollutant reduction requirement for the first and second permit cycles.

The Chesapeake Bay TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY3 and is included as Attachment 7. Implementation will continue in PY4.

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

Part II.B. of MS4 Permit No. VAR040140 requires the base to maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants allocated to the MS4 in an approved TMDL.

As part of maintaining its MS4 Program Plan, JBLE–Langley has developed the Bacteria TMDL Action Plan to address bacteria impairment in those waterbodies. The MS4 Program Plan currently has incorporated the TMDL Action Plans that identify 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 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. Implementation continued in PY3 and will continue in PY4. The Bacteria TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY3 and is included as Attachment 8. Attachment 1: IDDE Maps





Attachment 2: Stormwater Management Educational Brochures

#### **Material Storage**

Outdoor storage of materials can also pollute stormwater runoff.

Here are some material storage Best Management Practices:

1. Store materials indoors or under cover where feasible



- Keep outdoor materials stored away from storm drains and high traffic areas
- 3. Store materials on pallets to keep dry
- 4. Use silt fences to filter sediment



 Install berm for secondary containment of sand and gravel or cover with a tarp. Why Is Stormwater Pollution Prevention So Important?



Our unique location: The Chesapeake Bay Watershed

## Federal and State Laws

- Clean Water Act
- Virginia Pollutant Discharge Elimination
   System (VPDES) regulations
- Municipal Separate Storm Sewer System (MS4) regulations

For more information, call the Stormwater Program Manager (757) 764-1141 Joint Base Langley Eustis -Langley

633d CES/CEIE



# Stormwater Pollution Prevention

Small amounts of contaminants from all over the base add up and cause pollution in our water.

Yes, even the little things matter. YOU will make a difference, no matter how small.

#### The Many Sources of Pollution

- Paint
- Fertilizer
- Pet Waste
- Pesticides
- Grass Clippings
- Tires
- Metal Corrosion
- Litter

These materials enter storm drains every day, making stormwater a major contributor to water pollution in our area.

If the pollutants entering each drain can be reduced, so will the pollution in surrounding waterways.

## **Common Sources of Pollution Due** to Base Operations

- **De-icing Operations** •
- Construction Debris ٠
- Sedimentation
- Air Pollution

Auto Exhaust Motor Oil

Leaves

- Lubricants
- Gas
- Plastics
- **Eroded Soil**

**Best Management Practices** 

#### (BMPs)

#### Vehicle/Equipment

Overfills, leaks and spills are usually picked up by rain and snow, then carried to a storm sewer system. Here are some BMPs:

- 1. Do not top off fuel tanks
- 2. Immediately clean spills with absorbents
- 3. Check for leaks on all equipment
- 4. Use drip pans when fluid transfer occurs at any location



- 5. Use drip pans beneath parked vehicles
- 6. Use designated wash racks to clean vehicles and equipment
- 7. Do NOT wash where soapy water will flow into a storm drain



#### **Pavements**

Pollution sources from streets are also picked up by rain and snow. Pavement runoff is carried more quickly to a storm sewer system. Here are some pavement BMPs:

- 1. Sweep up debris and sediment
- 2. Reduce deicing materials by using the manufacturer's recommended rates
- 3. Use products that pollute less
- Store materials indoors 4.
- 5. Allow nature to melt snow and ice
- 6. Maintain your vehicle to prevent fluid leaks



## **Street sweeping reduces** pollution by 80%

Hazardous Waste

•

Erosion

Spills

These sources of pollution reduce oxygen levels in the water, killing aquatic animals and covering aquatic plant life.
## Tips

Picking up pet waste is no one's favorite job.

## Hopefully the tips below will make the job a little less icky.

• You can turn pet waste collection baggies inside out over your hand to use the bag as a glove when picking up the waste.

• Many pet owners prefer to double bag the collected pet waste.

• After collection, you can tie the baggies onto the leash so that you do not have to hold or put the full baggie in your pocket.

• Long handled pet waste scoopers are available at pet stores to assist with waste collection.

• Although you can purchase baggies specifically for pet waste at pet stores, you can also re-use other bags including newspaper bags, bread bags, or sandwich baggies.

• Pet waste digesters are available for purchase at pet stores.



## Additional Information

For more information, contact a Joint Base Langley Eustis Water Program Manager at 757-878-5218 (Fort Eustis) or 757-764-1141 (Langley AFB).

Additional information is available at:

#### **EPA Pet Waste Management:**

https://cfpub.epa.gov/npstbx/files/Pet%20Care%20Fact% 20Sheet.pdf

City of Hampton

http://www.hampton.gov/DocumentCenter/View/9075

#### Hampton Roads

www.hrpdcva.gov/departments/water-resources/ stormwater-management

http://askhrgreen.org/scoop-the-poop/

Water Environment Federation

www.wef.org/AWK/pages\_cs.aspx?id=6392

Pet waste is a health risk to people, other pets, and the environment. Bacteria in pet waste can make people sick. When not disposed of properly, pet waste is washed into storm drains and ends up in local waterways.

Always bag pet waste and dispose of it properly.





## Preventing Pollution from Pet Waste



Reviewed March 2021

## The Problem

Pet waste is not only smelly and unsightly, but also is a health risk to pets, people, and our local water bodies.

You may think that pet waste left on a lawn or sidewalk fertilizes the soil. However, in most cases the waste is washed into storm drains that lead directly into nearby waterways without being treated first.

The problem is that pet waste contains harmful bacteria such as E. coli and fecal coliform, making the water unfit for irrigation, recreation (such as swimming, fishing, or tubing), and other uses.

Pet waste contains parasites and bacteria that can spread gastrointestinal illnesses in humans such as Giardia and Salmonella.

These pollutants are harmful to the thousands of species of plants and animals (including fish, crabs and shellfish, birds, grasses, mammals, reptiles, and amphibians). People who eat food from contaminated water can get very sick.

Furthermore, pet waste also contains nutrients that can cause excessive algae growth in water, leading to fish kills and disrupting the water's natural ecology.

## The Facts

Pet waste contains contaminants that are harmful to people, pets, wildlife, and the environment.

Some of the harmful effects of pet waste include:

• When pet waste decays, it uses up dissolved oxygen and releases compounds that are harmful to fish and other aquatic life.

• On average nationally, there are 0.58 dogs per household.

• Each dog produces approximately 0.42 pounds of fecal waste per day, or about 150 pounds per year. Just think how much waste is produced by the pets in your neighborhood!

• A single gram of pet waste contains an average of 23 million fecal coliform bacteria that can cause disease in humans.

• A single day's waste from one large dog can contain 7.8 billion fecal coliform bacteria—enough to close 15 acres of shellfish beds.

• EPA estimates that 2 to 3 days of pet waste from a population of 100 dogs would contribute enough bacteria and nutrients to temporarily close an entire bay for swimming and shellfishing..

Source: EPA 1993





## The Solution

Be responsible and clean up after your pets. It is as easy as 1-2-3:

I. Bring a bag.



#### 2. Use a bag to pick up pet the waste.



3. Dispose of the bag properly in the trash...



## The Impact of Car Washing on Our Rivers and Bay...

When we wash the grime off our cars, it flows down the street and into the storm drain. This runoff carries soap, sediment, oil, and grease. Once the runoff gets into the storm drainage piping system, it directly discharges without treatment into the nearest lake, river, harbor, or bay.



## ...and Why It Matters

Polluted stormwater can harm fish, wildlife, and plants, and it can even contaminate drinking water. The U. S. EPA estimates that at least 50% of our nation's water pollution is caused by polluted stormwater runoff. If every vehicle (some 2.3 million) in the U.S. was washed once a month with 25 gallons of water (5 buckets), over 70.5 billion gallons of polluted water could enter the stormwater system every year. You can help. Use the tips provided in this brochure to help ensure that our waterways remain clean.

## The Law

Joint Base Langley Eustis is required to obtain a stormwater permit under the Virginia Pollutant Discharge Elimination System, or VPDES. The goal of this permit is to reduce pollutants found in storm water runoff from urbanized areas to the "maximum extent practicable."

Joint Base Langley Eustis has prepared this educational brochure to meet a requirement of their VPDES permit administered by the Virginia Department of Environmental Quality.

## **Contact Information**

For more information, contact a Joint Base Langley Eustis Water Media Manager at 757-878-5218 (Fort Eustis) or 757-764-1141 (Langley AFB).

For additional information, see the Commonwealth of Virginia's VPDES Permits, Fees and Regulations website at:

http://www.deq.virginia.gov/Portals/0/DEQ/Water/ PollutionDischargeElimination/ VAG75FactSheet2012.pdf

Environmental Protection Agency's information on vehicle washing:

https://cfpub.epa.gov/npstbx/files/ KSMO\_CarWashing.pdf

Florida DEP's Best Practices for Mobile Vehicle Washing:

http://www.dep.state.fl.us/water/wastewater/iw/ docs/bmps4mobile-vehicle-washing.pdf



## Outdoor Vehicle Washing



## Mobile Car Washes: Legal Requirements

Discharges from mobile car washes to the storm sewer system are not allowed at Joint Base Langley Eustis. Owners of mobile vehicle washes may apply for coverage under a permit issued by the Virginia Department of Environmental Quality; however the usual mode of operation for these operations is to prevent the discharge of wash waters to surface waters or the storm sewers. Permit coverage as a mobile operator would require each discharge location to be identified on the registration statement as a separate outfall.

JBLE and DEQ urge mobile car wash owners to avoid a discharge to state waters or storm drains by applying technologies to collect wash water and dispose of it properly, recycle it, or use best management practices (evaporation, blocking storm drain entrances, use of permeable surfaces, etc.). Many ideas to avoid a discharge are covered in this brochure and available online.



## Car Washing at Home and for Charity

Washing personal vehicles at home or at a volunteer/ charity event is not regulated. Thus, runoff from these activities does not need to be captured by recycling or catchment devices. Even so, there are several easy ways to help reduce stormwater pollution while you work:

- If possible, use a commercial car wash.
- Commercial car washes have recycling systems or discharge to the sanitary sewer system, which goes to a treatment plant.
- Wash your car on gravel, grass, or other permeable surfaces. These surfaces serve as a filter or a sponge, trapping pollutants from the wash water.
- Block off the storm drain inlets during charity car wash events or use an inlet insert to catch wash water.
- Divert soapy water from car washes into a sanitary sewer drain. If this is not feasible, divert car wash water onto grass or landscaping to provide filtration.
- Use hoses with nozzles that automatically turn off when left unattended.
- Use only biodegradable soaps.

Using these simple rules at home and for charity events helps keep a clean and healthy living environment. This is not only good for us and future generations, it makes for a healthy ecosystem.



## The Best Option

Outdoor car washing has the potential to result in high loads of nutrients, metals and hydrocarbons during dry weather conditions in many watersheds, as the detergent-rich water used to wash the grime off our cars flows down the street and into the storm drain.

Car washing is a common routine for residents and a popular way for organizations such as scout troops, schools, and sports teams to raise funds. This activity is not limited by geographic region, but its impact on water quality will be greatest in more urban areas with higher concentrations of automobiles.

Always consider using a commercial car wash as your first alternative. A properly designed car wash is connected to a sanitary sewer that carries the dirty water to a wastewater treatment plant. Trading a few dollars for a healthy stormwater system is one deal that everyone can live with.



Why is Pollution Prevention so Important?

#### Leaks and Drips

A small leak from your vehicle may not seem like a big deal, but when each car in a large parking lot drips just one drop of fluid, the cumulative negative effects on water quality can be enormous.

Fluid spills and improper disposal of materials result in pollutants, heavy metals and toxic materials that are picked up by stormwater and carried to the nearest storm drain. Anything that enters the storm drain system flows untreated into our streams and creeks and ends up in our lakes and rivers. By following the guidelines in this brochure, you can help prevent stormwater pollution.



Our unique location impacts the Chesapeake Bay Watershed



- Federal and State Laws
- \* Clean Water Act
- \* Virginia Pollutant Discharge Elimination System (VPDES) regulations

\* Municipal Separate Storm Sewer System (MS4) regulations

For more information, contact the Stormwater Program Manager at (757) 764-1141 or the Pollution Prevention Program Manager at (757) 764-1130 Joint Base Langley Eustis -Langley 633 CES



Car Maintenance and Pollution Prevention

Small amounts of contaminants add up and cause pollution in our water.

Yes, even the little things matter.

YOU will make a difference, no matter how small.

#### Care and Maintenance

Care and maintenance of vehicles is important in keeping them in good working order.



### How You Can Help

Your part might seem small, but every little bit adds up to make a big difference:

- \* Repair leaks on your vehicles
- \* Use funnels when pouring liquids
- \* Use pans to catch drips/spills
- \* Use the facilities available on base for maintenance needs
- \* Recycle used oil & oil filters
- \* Recycle used/unused antifreeze
- \* Recycle automobile batteries



#### You have a choice!

Take your car to Precision Tune or, if you prefer to do it yourself, the Auto Skills Shop has you covered.

#### Antifreeze & Batteries

Recycle old batteries and antifreeze at Precision Tune Auto Care.

#### **Used Oil & Filters**

Take filled containers and used oil filters to Precision Tune Auto Care or the Auto Skills Shop or for recycling.

YOU DUMP IT YOU DRINK IT



If you have a spill or see one, please report it.

Report spills to the Fire Department at (757) 764-4222

#### **Locations**

Auto Skills Shop 35 Ash Ave, Bldg. 224 Hours: Mon-Fri, 0800-1700; Sat-Sun, 1000-1500 (757) 764-4607



Precision Tune Auto Care 61 Tuskegee Airman Blvd., Bldg. 245 Hours: Mon-Fri, 0630-1800; Sat 0800-1600 (757) 709-7822









## OIL and ANTIFREEZE:

- 1. <u>Engine Oil</u> can be re-refined, processed into fuel oils and reused as raw materials
  - A. No fee to recycle at JBLE-Langley facilities
  - B. Precision Tune Auto Care (757) 709-7822
  - C. Auto Skills Shop (757) 764-4607

\*If you perform engine maintenance at home, stay clear of storm drains and take precautions to avoid any spills.







- <u>Antifreeze</u> recycled by filtering any metals or oil and adding additional chemicals
  - A. No fee to recycling at JBLE-Langley facilities
  - B. Precision Tune Auto Care (757) 709-7822

\*For more information, contact Ms. Sherry M. Johnson at 764-1130 or by email at sherry.johnson.4@us.af.mil

#### **Furniture**

Furniture issued by the government and in serviceable condition must be turned into DLA in Norfolk, VA. Damaged furniture can be recycled but metal, wood, and plastic must be separated from any other materials before it is turned into the scrap yard. *DO NOT* place in dumpster!

#### **Batteries**

Lead acid-batteries should not be placed in dumpsters or containers. They can be recycled at facilities or stores that sell them (i.e. auto parts store; Battery Plus at 3412 W. Mercury in Hampton). Alkaline batteries can be disposed of as regular trash. Lithium, nickel-cadmium, and mercury batteries are to treated as *universal waste*. Separate them into different containers and place a Universal Waste label on the container (obtained through the 633 CES). These can also be recycled at Battery Plus.

#### **<u>Fire Extinguishers</u>**

Take expired fire extinguishers to the Virginia Industries for the Blind Store (Bldg 330). Recertified extinguishers can be purchased here.



Material	Where does it go?	
Paper Products		
Office White Paper	Specified "White Paper" bin	
Colored Paper, Mag's, Newspaper, etc.	Specified "commingles" bin	
Cardboard	Specified cardboard only container	
Wood		
Pallets Scrap Yard		
Furniture		
Serviceable/Old Furniture	DLA in Norfolk, VA POC: 445-2412/2398	
Damaged Furniture	Specified roll-off bins; POC: Contract Services 764-1419	
Liquids		
Oil and Antifreeze	Hobby Shop/auto shop	
Batteries		
Lead-Acid	Battery Plus/auto parts store	
Lithium, Nickel cadmium, mercury	Collect as Universal Waste in separate containers; Label info: 764-1133/1130 Schedule Pick Up: 225-5808	
E-Waste		
Electronics (TVs, computers, cords, etc)	1) 633 CS: 764-7936 2) DLA: 445-2412/2398	
Other		
#1 and #2 Plastics	Specified "commingles" bin	
Bulbs	Collect as Universal Waste;	
	Schedule Pick Up: 225-5808	
Glass (green, brown, or clear	Schedule Pick Up: 225-5808 Specified "commingles" bin	
Glass (green, brown, or clear Plastic shopping Bags	Schedule Pick Up: 225-5808 Specified "commingles" bin Inside Commissary	

## JBLE - Langley

## 633 CES



## Recycling Program

QRP Manager: Sherry M. Johnson Comm: 764-1130 DSN: 574-1130 <u>sherry.johnson.4@us.af.mil</u>

*"JBLE-Langley supports a strong pollution prevention program which emphasizes the importance of source reduction, reuse, and <u>recycling</u>. "* 

Reviewed March 2021

#### <u>Recycling Program</u> <u>Overview</u>

In order to promote pollution prevention, JBLE-Langlev utilizes a program that incorporates reuse, reduction, recycling, energy recovery (incineration), and land filling. Recycling is a program encouraged base wide with a specific area at each facility meant as a collection area for most recyclables. Other facilities such as the scrap yard and Defense Logistics Agency-Disposition Services (DLA) are available to aid in the recycling of materials that cannot be put into the collection bins. If you need to dispose of an item not mentioned in this brochure, please contact the QRP Manager for assistance.



#### **Commingled Materials**

Materials such as newspapers, colored paper, magazines, #1 and #2 plastics, cans and glass (clear, brown, and green) should be placed into the same container. A bin for these mixed items is located in the facility's recycling area.

White Office Paper Specific containers for white office paper only are placed in each facility's recycling areas. Shredded office paper must be put in a clear plastic bag and tied. Loose sheets of paper are also allowed in the bin.

#### <u>Cardboard</u>

Cardboard has its own separate beige bins. Breakdown the boxes before placing them in the bin and do not place cardboard contaminated with food (i.e. pizza boxes) in the container.

#### Ink Cartridges

<u>1-3</u> toner cartridges are to be placed in a clear plastic bag, tied off, and placed next to (not inside) the white office paper bin. <u>Quantities larger than 3</u> should be taken to the scrap yard.

<u>Plastic Shopping Bags</u> Recycling bins are located inside the Commissary at the entrance and exit. DO NOT place in commingled bin.

### Oil & Antifreeze

Motor oil and antifreeze must be taken to the Hobby Shop or an auto shop in order to be disposed of and recycled.

## <u>Metal</u>

All types of metal are accepted for recycling at the scrap yard located behind Bldg 331 (M, W, F 1300-1500). Any liquids such as oils or refrigerants and other material such as plastic must be removed prior to turning in.

### Pallets/Wood

Serviceable or broken pallets should be taken to the scrap yard to be recycled. *DO NOT place by solid waste dumpster. Abandoned pallets will not be collected.* 

### E-Waste

Contact 633 CS Asset Management to verify items are clear for disposal. Then, contact DLA to dispose of all governmental electronics. *DO NOT place any electronics in solid waste dumpsters or recycling bins*. If the screens to these devices are broken, contact your Facility Manager for proper procedures to dispose of hazardous waste. Non-governmental appliances in good working condition may be donated to organizations such as Goodwill or the Salvation Army.

### C & D Debris

These are materials resulting from construction and demolition including: wood, drywall, plastics, roofing, rubble, brick and glass. The contractors are responsible for the management and removal of these materials. Nonrecyclable materials will be disposed of at the Bethel Sanitary Landfill.



December 2016

This page left blank.

## **Table of Contents**

1. Introduction	1
1.1 Background	1
1.2 The HMMP Team	1
1.3 The Enterprise Environmental, Safety, and Occupational Health Management Information (EESOH-MIS)	on System 1
1.4 Hazmat Tracking Activities (HTAs)	2
1.5 Resources and Policy	
2. How Can I tell a Hazardous Material?	5
2.1 Hazmat Definition	5
2.2 Are There Exemptions?	5
2.3 So it's not exempt Nuts!	7
3. Ozone Depleting Substances (ODS)	7
4. The Authorization Process	7
4.1 Material Stock Numbers	
4.2 Process Authorizations	9
4.3 Local Process Name	
4.4 Mother May I?	
4.5 The Review Grind	
4.6 Paper or Plastic?	
4.7 Contractors	
4.8 Exceptions-to-da-Rules	
5. Ordering, Purchasing and Receiving HAZMATs	
5.1 Ordering	
5.2 Understanding How Much is Too Much or "Max on Hand"	14
5.3 Receiving and Issuing	15
5.4 GPC – Carte Blanche?	15
5.5 GPC and Services	
5.6 GPCs and Private Vehicles	
5.7 Closing the deal - Go Directly to Your HTA!	
5.8 Other "Sneaky" Contracting	
5.9 Authorization Summary	
6. Shop use of HAZMATs	

7. Proper Storage of HAZMATs
7.1 Hazard Classes
7.2 Incompatibles21
7.3 Hazmat Storage Lockers
8. The BIG Picture (Environmental Management System)
9. Managing Shelf Life
9.1 Shelf-Life Policy Stuff24
9.2 Updating Shelf-Life Material25
10. Left-Overs
10.1 Getting Rid of Left-overs
10.2 Free-Issue
10.3 Open Containers
10.4 Waste Streams
10.5 Oops – Spill Management
10.6 Bar-coding
11. The Hazard Communication Standard
12. Shop Pollution Prevention (P2)
13. Training
14. Reports
15. To Infinity and Beyond!

Figure 1 - eDash Hazardous Material Page Showing Shop-Level Hazmat Page Access	4
Figure 2 - Process Centric Flow Chart	9
Figure 3 - EESOH-MIS Issue Receipt	15
Figure 4 - Authorization to Purchase Hazardous Material with a Government Purchase Card Report	16
Figure 5 - DoD Shelf-Life Program Web Site	24
Figure 6 - DD Form 2477, Shelf-Life Extension Notice Label	25
Table 1- Hazmat Related Policy Reference	4-4
Table 2 – Typical Process Authorization Routing	8
Table 3 - Paint the Plane Processes	10
Attachment 1 – EESOH-MIS Reports	
Attachment 2 – Process Authorization EESOH-MIS Field Instructions	

- Attachment 3 Process Codes
- Attachment 4 IH Controls in EESOH-MIS

#### FREQUENTLY ASKED QUESTIONS CONT.

#### Sampling - When do I need to get something sampled?

Most often a waste stream will have to be sampled if it is new, the process has changed or the waste is an unknown. (40 CFR 262.11; JBLE-Langley Hazardous Waste Management Plan)

Sampling - Who do I call to get something sampled or my waste characterized?

You should call 633 CES/CEIE 764-1133.

Universal Waste -What waste streams are considered Universal Waste?

Batteries, except flashlight & lead-acid batteries; pesticides: mercury thermostats, and fluorescent lamps. Other items are under consideration, for inclusion in the Universal Waste Rule. You can call the HW program manager at 764-1133, if you have any questions (40 CFR 273.3-4.)

Universal Waste - Can I mix my Universal Waste batteries together?

No., You must collect like batteries together in separate containers, i.e. Ni -Cad with Ni-Cad, Lithium with Lithium.

#### Universal Waste - How must I mark my Universal Waste container?

You must mark the universal waste to identify the type of universal waste is in the container, i.e. Universal Waste lamps, Universal Waste batteries (Lithium), (Ni-Cad) Universal Waste pesticides.

A start date must be marked on the container. The start date must indicate the date the first item went into the container. This is the date the ten month accumulation period begins. (40 CFR 273.34; JBLE-Langley Hazardous Waste Management Plan).

#### Universal Waste - How long can I store my universal waste?

Federal regulation allows the installation one year to accumulate Universal Waste. At Langley AFB you are only allowed 10 months to accumulate your Universal Waste at the IAP because it takes the program managers two months to process the waste for disposal off the base. (40 CFR 273.35 (a):

Universal Waste – How do I dispose of lead-acid batteries or alkaline batteries that are not considered Universal Waste?

We recommend one for one purchase of the Lead acid battery. To dispose of small amount email 633.CES.HAZ@us.af.mil We recommend you contact Battery Outlet 867-8280 in Tabb/Yorktown or Battery Plus 874-7090 in Newport news.

#### Who shall I contact to have my waste picked up?

Email: 633.CES.HAZ@us.af.mil Call 225-5808.

#### THE HAZARDOUS WASTE GOLDEN RULE !

#### DO NOT GUESS!

<u>IF YOU ARE EVER IN DOUBT PLEASE DO NOT</u> <u>HESTITATE TO CONTACT YOUR GROUP</u> <u>ENVIRONMETAL MANAGER (GEM), UNIT</u> <u>ENVIORNMENTAL COORDINATOR (UEC) OR THE</u> HAZARDOUS WASTE MANAGER

KENNETH DUNN AT 764-1133 OR kenneth.dunn.6@us.af.mil

#### UNIVERSAL WASTE DISPOSAL CHEAT SHEET

All Universal Waste Lamps will be collected and turned into the Central Accumulation Point (CAP). No lamps are allowed to be thrown into the trash as of 1 Aug 17. This includes all green tip and green writing lamps.

#### Please refer to the MEMORANDUM FOR UNI-VERSAL WASTE dated 01 Aug 17 for proper management and disposal.

NOTE: Universal Waste can only be stored for <u>10 month</u> regardless if container is filled.

## JBLE-Langley Air Force Base

## 633 CES/CEIE



Hazardous Waste Frequently Asked Questions and Guide

Hazardous Waste Team is responsible for ensuring the day to day compliance of Federal, State, and Air Force regulations.

#### HAZARDOUS WASTE PROGRAM OVERVIEW

#### Responsible for:

Ensuring the day-to-day compliance of federal, state, local and Air Force regulations concerning hazardous waste generation and management; "cradle to grave".



-Hazardous Waste (HW)

WASTE —Un

-Universal Waste (UW) Management



-Non-Regulated Waste Management



Container Management-



-Central & Initial Accumulation Point management







Assessment & Inspection —





Waste Reduction Efforts

-Review & Authorize Chemical & HazMat Usage



Hazwaste Mgmt Plan Revisions-



#### FREQUENTLY ASKED QUESTIONS

#### Evaporators -Who trains on use and cleaning of the evaporators?

1 MXG operates three scrubber water evaporators. One is managed by the AGE shop 4-2888, Corrosion Control, 4-5281, and MXS, 4-3346. Contact those offices for training. Contact the CAP at 225-5808 for cleaning of the evaporators.

#### Initial Accumulation Point (IAP) - I have a new waste, how do I set up an IAP?

Once a new waste stream has been identified the shop environmental coordinator initiates communication with the Squadron Unit Environmental Coordinator. One of those two will generate a letter requesting authorization to accumulate the waste. The letter indicates the location of the accumulation point, the waste accumulated there and the names and contact information for the primary and alternate accumulation managers. The letter, signed by the unit or section commander, must include coordination by the Group Environmental Manager, Wing Safety, (SEG) Bio-environmental Engineering Fire Department (CEF) and Civil Engineering Environmental Management Element (CEIE). (*JBLE-Langley Hazardous Waste Management Plan*).

#### IAP - Who can do the weekly inspection of the initial accumulation point?

Air Force guidance requires a weekly inspection of all IAPs. The IAP can be inspected by anyone who is trained and proficient in hazardous waste management. In most cases this will be the primary or alternate IAP manager.

#### IAP - How can I get containers or other supplies for my waste?

Containers for accumulating wastes are the responsibility of the unit to obtain through supply channels or by using the GPC. CES Environmental Management can provide vendor information for research and purchase.

#### IAP - Where do I get labels for my containers?

Labels for your containers can be obtained from your Unit Environmental Coordinator, Group Environmental Manager, or CES Environmental Management.

#### IAP - Who do I call when the containers are full?

When a container becomes full, federal regulation requires that the container be picked up within 3 days of becoming full. The user is required to email or call the pick up contractor as soon as the container becomes full at 633.CES.HAZ@us.af.mil; or 225-5808. Call the HW program manager if the container is not picked up in a timely manner (before end of second day). (40 CFR 262.34(c)(2); JBLE-Langley HW Management Plan, pg. 30, section 7.5 IAP Management)

#### IAP - How often do I need IAP training?

Facility personnel identified as required to obtain training must take part in an annual review of the training program. For new personnel, training must be successfully completed prior to their assignment to a position involving the handling or management of hazardous waste. Until that time, untrained personnel must not perform any task involving hazardous waste management unless trained personnel supervise them. (40 CFR 265.16(c); JBLE-Langley HW Management Plan pg. 15, section 5.1)

#### IAP - Who needs IAP training?

Hazardous waste management training is required for any personnel who handle hazardous waste at facilities or more specifically: work at a 90-day hazardous waste accumulation facility, manage a hazardous waste initial accumulation points, or conduct emergency response to a hazardous waste incident. You may also be required to obtain initial accumulation point training if you carry out any of the tasks or supervise anyone performing the following tasks:

- Decide which wastes are hazardous waste
- Add hazardous waste into accumulation containers at accumulation points;
  Remove hazardous waste from accumulation tanks or containers;

#### FREQUENTLY ASKED QUESTIONS CONT.

#### IAP - Who needs IAP training (Cont.)?

All personnel whose work involves HW, and their immediate supervisors, must successfully complete HW training appropriate to their job responsibilities - (40 CFR 265.16; JBLE-Langley Hazardous Waste Management Plan, pg 15)..

#### Collection Area (CA) - What is it?

A CA is used to collect non-regulated waste, Universal Waste (UW), recyclable materials and other materials that are not Hazardous Waste. CA's are managed similar to IAP's but are not as strict. Inspections are done every 30 days instead of 7 days. CA's help provide a area to manage non-Hazardous Waste in one area instead of multiple.

#### Guidance –

Most Hazardous Waste related guidance can be found on Langley's e-DASH Hazardous Waste web page:

 $https://cs2.eis.af.mil/sites/10623/JBLE/_layouts/15/start.aspx\#/SitePages/Home.aspx$ 

There you will find information on: Aerosol cans, Sealants, Fluorescent Lamps, Floor Scrubber Water, Absorbent Pad drums

#### Used Oil - Who shall I call to get used oil pumped?

You should call 633 CES/CEIE at 764-1130.

#### Aerosol procedures—How do I manage Aerosol cans?

Place aerosols cans (paint, oil, solvents) into a closed 5, 20, or 30 gallon container with a green label as re-issue,/reuse, or recycled. The container must remain close except when adding to the container. The shops are not required to make the reuse or recycle determination; this is the responsibility of the pick-up contractor.

#### Hazardous Materials - What is the difference between Hazardous Materials and Hazardous Waste?

A hazardous material is one that presents a physical or health hazard and requires an SDS. HAZMAT includes all items (including medical supply items, but excluding drugs in their finished form and pharmaceuticals in individually-issued items) covered under the EPCRA tracking requirement, the OSHA HAZCOM Standard, and all Class I and Class II ODS. It does not include munitions or HW.

Hazardous Waste is defined in 40 CFR 261.3. It is a solid waste that is not excluded from regulation and meets any of the following characteristics; exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity. The waste may also be on a list found in 40 CFR 261.

#### Where can I get a copy of the Hazardous Waste Management Plan?

The Langley Hazardous Waste Management Plan is located on the eDASH website: https://cs2.eis.af.mil/sites/10623/JBLE/\_layouts/15/start.aspx#/ SitePages/Home.aspx



Providing the world's best combat Air Forces – Delivering rapid, decisive, sustainable

#### **633d Air Base Wing** Setting the Standard In Air Supremacy



Arial shot of LAFB

Protection of the natural resources under its stewardship is an integral part of the Air Force mission. This brochure highlights some of the important natural resources found on JBLE-Langley in the hope that it will foster general interest in and awareness of their values.

#### Did you know...

In 1969, the Air Force National Resources Activity was reassigned from the Office of the Inspector General (Assistant for Natural Resources) to the Office of the Director, Civil Engineering, HQ USAF. An Assistant for Natural Resources position was established for coordinating all Air Force natural resources programs, such as forestry, fish and wildlife conservation, air and water pollution, noise, soil management, solid wastes, pesticide problems, and bird/aircraft strike hazards (BASH). The following year, the Directorate of Civil Engineering was designated the OPR for all Air Force environmental protection matters. Previously, CE shared this responsibility with the Air Force Surgeon General. To increase the effectiveness of the pollution control programs and to upgrade the importance of environmental considerations, the late General Guy H. Goddard (Director of Civil Engineering, 1968-1971) established the Environmental Protection Group in July 1970. This was the forerunner of today's Environmental Division in the Office of The Civil Engineer.

#### JBLE-Langley

For more information, contact the Civil Engineering, Environmental Flight, Natural Resources Section at (757) 764-1090

## JBLE-Langley

## 633CES/CEIE



## Natural Resources

In 1916 Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA). JBLE-Langley is now the oldest continuously active air base in the United States.

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. Since that time Langley has become part of . Joint Base Langley Eustis and home to the Air Combat Command Headquarters and the 1<sup>st</sup> Fighter Wing. About 12,000 active personnel are stationed at JBLE-Langley.

Langley AFB wishes to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of the Natural Resources Program. There are many ways to enjoy and appreciate the abundant amount of flora and fauna, including those listed in this brochure. Take time to learn about the many available avenues for enjoying the natural resources at Langley Air Force Base.

#### Shellbank Area

The Shellbank Area is the southwest area of Langley that also includes the B-52 Memorial. The memorial is located by Langley's front gate and is excellent place to

watch local wildlife. The B-52 debuted in 1965 and continues to be the backbone in bombing planes for the U.S. Air Force. The Shellbank area is a prime spot to observe the wildlife and the



serene environment here on the base.



#### Native Flora

There are over 100 different species of floral known to occur at JBLE-Langley. The Trumpet flower, shown to the right, is one of the many colorful flowers that are scattered across the base.



#### Native Fauna

Native wildlife includes a wide variety of game and fur-bearing species, small mammals, raptors, waterfowl, songbirds, amphibians, reptiles, and fish. The Chesapeake Bay attracts a variety of wildlife to the Langley Area. Twelve species of protected, or candidate, birds, vertebrates, invertebrates and plants have been identified to potentially occur within a 50mile radius of the base.

Osprey (right) Heron (below) Birds and airplanes share the air in and around Langley Air Force Base.





#### Indigenous Wildlife

- \* Eagles
- \* Deer
- \* Cottontail
- \* Blue Crabs
- \* Scallops
- \* Oysters
- \* Fin Fishes



A **Speckled Turtle** (above) relaxes on a log in the reservoir at Bethel Park.

- \* Herons
- \* Blue Jays
- \* Seagulls
- \* Ospreys
- . . . .
- \* Mockingbirds
- Red-winged Blackbirds

Mallards/Ducks

#### **Bethel Park**

Bethel Park is a 284-acre park that provides facilities for the public to enjoy. Base



improvements over the years have included upgrading piers, adding picnic shelters, recreational trails, and the FAMCAMP. Fishing, boating, and picnic areas with

In

stunning views of the reservoir are all entertainment opportunities that are available to the community. At the Dickman Recreational Area, located at Bethel Park, one can take a boat out to admire the native forest and shrub species while observing the

indigenous wildlife. 2004, an estimated 40,000 people utilized the Bethel Park area.

#### Boardwalk



A 1680 foot boardwalk was built in 1992 through one of Langley's wetland areas. Local Boy Scouts along with other volunteers donated time and energy to create the boardwalk to be a place

where people can convene to enjoy nature. The 60,000 square foot marsh that surrounds the boardwalk was created in 1987 to replace other wetlands that had been filled at other locations on Langley. The marsh is home to many variations of

wildlife including the Blue Heron and the Fiddler Crab. The tidal waters rise twice a day to fill the area.



## The Chesapeake Bay Estuary and Watershed

The Chesapeake Bay is the nation's premier estuary supporting a commercial seafood industry, shipping for commerce, natural habitat for wildlife, and recreational opportunities for residents and visitor's alike.

The watershed, comprising some 64,000 sq. mi.



in six states, receives about half its water from the ocean and the remaining half from rainfall. Approximately 16 million people live within the Chesapeake Bay water shed.

The people living within the watershed, including personnel at JBLE-Langley, play an important role in this ecosystem and the actions we take have direct consequences on the Bay.

#### To Learn More About Chesapeake Bay

Chesapeake Bay Program (800) YOUR BAY, www.chesapeakebay.net

Chesapeake Bay Gateways Network (866) 229-9297, www.baygateways.net

Virginia Dept. Conservation & Recreation (804) 786-1712, www.dcr.state.va.us

#### Natural Resources at JBLE-Langley

In 1916, Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA). JBLE-Langley is now the oldest continuously active air base in the United States.

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. The base is now home to HQ ACC and the 1st FW. About 12,000 active personnel are stationed at JBLE-Langley. NASA's Langley Research Centerthe oldest NASA facility- is located next door.

Conservation of the natural resources under its stewardship is an integral part of the Air Force mission. The 1st Fighter Wing makes the maximum effort practicable, consistent with its mission, to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of its Natural Resources Program.

While there are many ways to access and enjoy the natural resources at JBLE-Langley, the purpose of this brochure is to highlight those resources near the newly-restored Nature Walk in the hope that it will foster general interest in and awareness of their values.

For more information concerning the natural resource assets or natural resources program at JBLE-Langley, please contact:

633d Civil Engineering Squadron (633 CES), Environmental Management Flight (CEAN), Natural Resources/Conservation Element at (757) 764-3906

## JBLE-Langley 633 CES/CEAN



Nature Walk & Trail Informational Brochure



#### The Langley Nature Walk

At 1680-ft , the Langley Nature Walk is the longest wooden structure on the base. Part of a larger nature trail system in the North Base Support Area, it provides base personnel, and the general public, an opportunity to access and enjoy a largely pristine natural area - largely undisturbed since colonization.

Originally constructed in 1992 using volunteer labor and \$30,000 of DoD Legacy Program funds to pay for the lumber, the walk is a place



where people can convene to watch wildlife, enjoy nature, relax and take in the scenic views.

The Nature Walk was destroyed in 2003 - a casualty of the flooding wrought by Hurricane Isabel. In 2006, the Nature Walk was rebuilt, using contract labor, under the Wing's hurricane recovery program.

Today, the Nature Walk is back and users can enjoy scenic views, and observe the plants and wildlife in bottomland hardwoods (forest) and wetland (marsh) habitats as well as a constructed wetland.

#### The Langley Nature Trail



Complementing the Nature Walk is a short Nature Trail. The entrance to the Langley Nature Trail is located behind the Base Ed Center across from the entrance to the R/V

storage area. The Trail extends through bottomland hardwoods which form the transition between wetland areas and the higher elevations landward. Located at intervals along the Trail, interpretive signs illustrate the more common plants and animals who benefit from the habitat afforded by the trees.

#### **Bottomland Hardwoods**

The forested area around the Nature Walk and Trail is also called a bottomland with a distinct suite of hardwood trees such as oak, sweetgum, maple, and ash together with the minor hardwoods Black Cherry, Mulberry and Hackberry. These areas are typically found within the floodplain of rivers and creeks and flood periodically so that the soil is saturated for some part of the year.

These areas also filter pollution in storm water runoff, and prevent soil erosion. Bottomland habitat is rapidly disappearing nationwide - succumbing to the pressures of development. Protecting the remaining habitat is important.



Wildlife potentially visible from the Trail includes: Opossum, Grey Squirrel, Muskrat, Bobwhite, Raccoon, White-tailed Deer. Plant species visible along the trail include: Sassafras, Sumac and Poison Ivy.

#### Wetlands

Wetlands are combinations of land and water. The plants and animals living there are specially adapted to the twice daily changes of the tide. As you enter the Walk, the habitat transitions from Bottomland (forested area), to the high marsh zone (flooded by extremely high tides) to the low marsh zone (flooded by every high tide).



The dominant plant type in the low marsh zone is smooth cordgrass, whereas saltmeadow cordgrass, black needlerush, and saltgrass (marsh elder) prevail in the high marsh

zone. The high marsh is threatened by the weed Phragmites australis, but the Air Force has initiated a multi-year effort to control its spread.

Birds you may see from the Nature Walk include: colonial water birds (terns and herons), waterfowl (ducks), and raptors (osprey and bald eagles). The tidal wetlands visible from the Walk also provide wintering homes for migratory birds and other wildlife, including non-migratory birds. Fish and shell fish (including the Blue Crab), use the wetlands as spawning grounds.

Besides habitat, wetlands provide other valuable

services to the base including: absorbing excess water, protect uplands from storm damage of wind and waves, filter storm water and mix oxygen into the water.



Economically, wetlands provide opportunities for fishing, crabbing and hunting. Other recreational activities include hiking, bird watching, photography and wildlife study.

#### Constructed Wetland

Just inside the north

entrance to the Nature Walk, if you look to your left - towards NASA and the MSA, is a constructed wetland. This 60,000 sq. ft. rectangular marsh was carved out of the surrounding wooded area in 1987 to compensate for the impacts earlier construction projects had on wetlands elsewhere on the base.

This wetland is a shining example of the Air Force and 1st Fighter Wing commitment to natural resource conservation management.



#### AIR FORCE RESOURCE MANAGEMENT

The United States Air Force has the responsibility of managing more than nine million acres of valuable public lands. To ensure success, the Air Force has developed a network of dedicated professionals who work in coordination with local, regional and national authorities. Their challenge is to find a balance in requirements for military mission, security and environmental habitat protection. This effort requires the cooperation and support of the Air Force and its neighbors. The



primary goal is to guarantee the quality of public lands under Air Force stewardship.

Conservation programs on Air Force bases include fish and wild life conservation, forestry, agricultural land lease, habitat management and outdoor recreation. Air Force Resource Managers, and nearby com muni ties, working together, have made great strides i n fostering environmental awareness through education and cooperation.

The Air force supports partnerships with many resource groups; Neotropical Migratory Bird Conservation, Ducks Unlimited, North American Waterfowl Management Plan, Wetlands Protection and Enhancement and the National Watchable Wildlife program. You are invited to visit Air Force lands. Come see how we are doing with our part of America.

#### Natural Resources at Langley AFB

JBLE-Langley is the oldest continuously active air base in the United States. In 1916 Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA).

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. The base is now home to HQ ACC and the 1st FW. About 12,000 active personnel are stationed at Langley AFB. NASA's Langley Research Centerthe oldest NASA facility- is located next door.

Conservation of the natural resources under its stewardship is an integral part of the Air Force mission. The 633 Air Base Wing makes the maximum effort practicable, consistent with its mission, to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of its Natural Resources Program.

While there are many ways to access and enjoy the natural resources at JBLE-Langley, the purpose of this brochure is to highlight and document observed bird species.

For more information concerning the natural resource assets or natural resources program at Langley Air Force Base, please contact:

633d Civil Engineering Squadron (633 CES), Environmental Management Flight (CEIE), Natural Resources at (757) 764-1090

## JBLE-Langley Bird Count

633 CES/CEIE



#### JBLE-Langley Bird Count

Date: \_\_\_\_\_

Avifauna Species	# Observed	Total
Bittern, American		
Bluebird		
Bluejay		
Bobolink		
Brant		
Bufflehead		
Bunting, Snow		
Canvasback		
Catbird		
Chat		
Coot, American		
Cormorant, Double-		
crested		
Creeper, Brown		
Crow, American		
Crow, Fish		
Dove, Mourning		
Dove, Pigeon		
Dove, Rock		
Dowitcher, Long-billed		
Duck, Black		
Duck, Long-tailed		
Dunlin		
Eagle, Bald		
Egret, Cattle		
Egret, Great		
Egret, Snowy		
Finch, House		
Gadwall		
Gnatcatcher, Blue-gray		
Gnatcatcher, Bluegrey		
Goldeneye, Common		
Goldfinch		
Goose, Snow		

Avifauna Species	# Observed	Total
Grackle, Common		
Grebe, Horned		
Grebe, Pied-billed		
Grebe, Red-necked		
Gull, Boneparte's		
Gull, Great Black-backed		
Gull, Herring		
Gull, Laughing		
Gull, Ring-billed		
Harrier, Northern		
Hawk, Coopers		
Hawk, Red-shouldered		
Hawk, Red-tailed		
Hawk, Sharp-shinned		
Heron, Great Blue		
Hummingbird, species		
Ibis, Glossy		
Jay, Blue		
Junco		
Kestrel		
Killdeer		
Kingbird, Eastern		
Kinglet, Golden-crowned		
Kinglet, Ruby-crowned		
Lark, Horned		
Longspur, Lapland		
Loon, Red-throated		
Mallard		
Martin, Purple		
Merganser, Common		
Merganser, Hooded		
Merganser, Red-breasted		
Merlin		
Mockingbird		
Night-heron, Black-crowned		
Nuthatch, Red Breasted		_
Oriole, Northern		
Oriole, Orchard		
Osprey		

## JBLE-Langley Significant Aspects 2017

ASPECT	IMPACT
Hazardous Waste	Human Health, Fines, Public Perception
Water Quality	Degradation of water- ways and aquatic eco- systems
Natural Resources	Land use, Destruction or degradation of natu- ral resources
Energy	Cost, Emissions
가 만난 한 글 관람이 다.	· 2010년 전 - 2010년 전 2011년 - 2012년 전 2011년 - 201

#### **JBLE-Langley EMS Policy**

The 633d Air Base Wing sets the standard in services and support for Team JBLE-Langley. Our ability to conduct our mission requires daily operations in the land, sea and air environments. Protecting these environments is an integral part of accomplishing this mission.

We are committed to sustaining Team Langley missions through a C.L.E.A.N. approach:

- Comply with requirements− We will comply with all environmental regulations while reducing compliance cost and liabilities
- ⇒Limit impact- We will prevent pollution and minimize waste while cleaning up past sites of environmental concern and making efforts to achieve Chesapeake Bay conservation
- ⇒ Execute Plans– We will identify and attain energy, environment, safety and occupational health objectives and targets through planning that is Specific, Measurable, Achievable, Realistic and Timely (SMART)
- ⇒Achieve Improvements- We will continuously improve programs and processes through the use of effective management and planning
- State of the second second

It is the responsibility of all military personnel, civilian employees and support contractors to perform their duties in a manner that prevents pollution, protects the environment and conserves natural resources.

By making these commitments, we will ensure the continual improvement of our environmental systems and the overall accomplishment of our core mission

## JBLE-Langley Air Force Base



G330 AIR BASE WING

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Contact: Kenneth Dunn EMS Coordinator 764-1133, kenneth.dunn.6@us.af.mil EMS Manual located: https://cs1.eis.af.mil/sites/edash -ins1/jble/SitePages/Home.aspx

## WHAT IS EMS?

#### ENVIRONMENTAL

- Weaves existing environmental programs and mission management processes into a coherent system

- Enables an installation to control the environmental impact of its activities, products, and services

- Uses the Plan-Do-Check-Act methodology

- Provides a systematic framework for environmental mission sustainment

### -MANAGEMENT

- Ensures commitment by top leaders
- Improves mission performance

- Evaluates all aspects of environmental programs

### System

- Requires formal infrastructure

- Integrates distinct programs

- Strives for continual improvement through self assessment

#### What an EMS can do

- Reduce operational impact, better environmental and overall organizational performance and mission sustainability

- An EMS provides an opportunity to assess how your unit manages environmental risks and to find better and more cost effective solutions

- It unites existing environmental programs in a single framework

## WHY HAVE AN EMS?

#### EMS is mandated at the Executive, DoD and AF levels

-2015, EO 13693, *Planning for Federal Sustainability in the Next Decade*. The main focus of this EO is to reduce greenhouse gas emissions. Utilizing an EMS to accomplish the goals of EO 13693 is supported.

- **DoDI 4715.17**, *Environmental Management System*; Establishes policy, assigns responsibilities, and prescribes procedures for achieving conformance with Environmental Management Systems (EMS).

-AFI 32-7001, *Environmental Quality Program*; establishes the framework for an Environmental Management System (EMS).

## THE EMS CYCLE

Begins with formulation of an EMS Policy Statement that includes commitments to continual improvement, pollution prevention and environmental compliance

Based on ISO 14001, 2015 framework

### PLAN

#### Planning

- Environmental Aspects & Impacts
- Legal & Other Requirements
- Objectives & Targets
- Environmental Management Plans
   DO

#### Implementation & Operation

- Structure & Responsibility
- Training, Awareness & Competence
- EMS Documentation
- Operational Control
- Emergency Preparedness & Response

## CHECK

#### **Checking & Corrective Action**

- Monitoring & Measurement
- Nonconformance, Corrective & Preventive Action

ACT

Management Review



#### DEPARTMENT OF THE AIR FORCE HEADQUARTERS 633D AIR BASE WING JOINT BASE LANGLEY-EUSTIS VA

#### OFFICE OF THE COMMANDER

24 Oct 19

#### MEMORANDUM FOR ALL JOINT BASE LANGLEY-EUSTIS PERSONNEL

SUBJECT: Environmental Policy Statement

1. Our ability as Joint Base Langley-Eustis (JBLE) to conduct our mission requires daily operations in the land, sea and air environments. Protecting each is an integral and mandatory part of accomplishing our mission.

2. We are committed to sustaining JBLE through a C.L.E.A.N. approach:

•	Comply	We will comply with all environmental regulations and all other requirements while reducing compliance costs and liabilities.
•	Limit impact	We will prevent pollution and minimize waste while cleaning up past sites of environmental concern and making efforts to achieve Chesapeake Bay conservation.
•	Execute plans	We will identify and attain energy, environment, safety and occupational health objectives and targets through planning that is Specific, Measurable, Achievable, Realistic, and Timely (SMART).
•	Achieve improvements	We will continuously improve our programs and processes through the use of effective management and planning.
•	Notify	We will communicate our environmental commitments and performance to all levels of our organization and local community.

3. It is the responsibility of all military personnel, civilian employees and support contractors to perform their duties in a manner that prevents pollution, protects the environment and conserves natural resources.

4. We will ensure the continual improvement of our environmental systems and the overall accomplishment of our core mission by following these commitments. Please address any questions or concerns to JBLE-Langley at 764-3906 or JBLE-Eustis at 878-7378.

ROSS.CLINTON.AN Digitally signed by DREW.1123977404 404 Date: 2019.10.25 14:58:52 -04100 CLINTON A. ROSS, Colonel, USAF Commander

Global Power For America

Attachment 3: Public Involvement/Participation Documentation

## 22 March 21 is WORLD WATER DAY

ହ

Free Swag

P(0)(0)

Bag

What: Pick up a free JBLE-Langley Doggie Waste Bag Holder and Bags
Where: Langley AFB Main Exchange: Inside Entrance 61 Spaatz Dr, Hampton, VA 23665
When: 22 March 2021, 10:00 am - 2:00 pm
Who: For you! Or grab one for a neighbor who needs a gentle reminder.

**Why:** The BACK RIVER surrounding JBLE-Langley is considered an *impaired water* due to high levels of **fecal bacteria**. When dog poo isn't picked up, bacteria will wash into the Back River and add to the contamination. This bacteria concentrates in shellfish, making them inedible.

Oysters do not want to eat poo and we do not want to eat oysters who eat poo.





## **2021 Earth Week Events**



Date	Time	Event	Location
Mon, 19 April	Self Paced	FRONTLINE: Poisoned Waters	Online documentary (see flyer)
	Self Paced	Recommended Earth Week Films	Online (see flyer)
Tue, 20 April	1000-1400 Self Paced	Nature Trail Preservation Audubon Society of VA: Create Helpful Habitat with Native Planting	Nature Trail at Worley Road Online webinar (see flyer)
Wed, 21 April	1200-1500	Community Litter Clean Up	Meet at the Bethel Fire Station
	Self Paced	Plastics and Microplastics	Online webinar (see flyer)
Thu, 22 April	0900-1500	Environmental Info Fair	Inside Base Exchange (Bldg 290)
	FINAL DAY	Trex Challenge	Four drop off locations (see flyer)
Fri, 23 April	Self Paced 1000-1030	Smithsonian National Zoo: Reptile Discovery Center Arbor Day Ceremony	Online webinar (see flyer) Bateman Library (Bldg 161)



Earth Week Coordinator: Sherry M. Johnson: <u>sherry.johnson.4@us.af.mil</u> or leave a message at 764-1130.

## **FRONTLINE: Poisoned Waters**

Join us on Monday, 19 April 2021, to kick off JBLE-Langley Earth Week by viewing a documentary on the health of Puget Sound in Washington. This documentary investigates how an unhealthy and polluted waterway can affect the environment on a macro and micro level and provides an example of how pollution can endanger all of us. Access the video at the following link on your personal device: https://youtu.be/cm1lbwz3Dz8. For more information, contact Sherry Johnson at sherry.johnson.4@us.af.mil.





## **Recommended Earth Week Films**

- Before the Flood (2016)
- Dark Waters (2019)
- Chasing Coral (2017)
- Grizzly Man (2005)
- Oceans (2009)
- Growing Up Wild (2016)
- A Plastic Ocean (2016)
- Artic Tale (2007)
- The 11<sup>th</sup> Hour (2007)
- How to Change the World (2015)
- March of the Penguins (2005)

- An Inconvenient Truth (2006)
- The River (1938)
- Koyaanisqatsi (1982)
- Gorillas in the Mist (1988)
- Money Kingdom (2015)
- Winged Migration (2001)
- Bee Movie (2007)
- Semper Fi: Always Faithful (2011)
- Toxic Legacy (2006)
- Trashed (2012)
- David Attenborough: A Life on Our Planet (2020)





## JBLE VOLUNTEER EVENT Nature Trail Preservation



The 633d Civil Engineer Squadron is seeking volunteers to carry out annual maintenance on the JBLE-Langley nature trail on *Tuesday, 20 April 2021 from 1000 - 1400*. Volunteers will help clean up debris, rake trails, repair the boardwalk, and remove invasive weeds. Volunteers are encouraged to bring a rake, shovel, work gloves, water, and wear clothing appropriate for working outdoors (i.e. long pants and old running shoes, hiking boots, or rubber boots). Extra tools, work gloves, and water will be available. There is a limit of 15 volunteers needed.

This is a great opportunity to get involved in the JBLE-Langley community and appreciate our natural resources.



The Air Force is committed to acting as a responsible steward of its natural resources because it is the right thing to do for our Airmen and their families today and for future generations tomorrow.



REGISTER NOW: Email: <u>alicia.garcia.4@us.af.mil</u> Date: 20 April 2021 Time: 1000 – 1400 Location: Worley Rd across from the Horse Stables

Please RSVP early.

# Create Helpful Habitat with Native Planting



Join us on <u>Tuesday, 20 April 2021</u>, to learn how to improve our local environment by creating wildlife friendly habitat. The Audubon Society of Northern Virginia produced a helpful video to both guide interested property owners and inform concerned citizens. To view the presentation, follow the link: <u>https://vimeo.com/412969837</u>. For more information, contact Sherry Johnson at <u>sherry.johnson.4@us.af.mil</u>.

## Community Litter Clean Up at Bethel Family Housing

The 633d Civil Engineer Squadron is seeking volunteers to help remove debris and litter in off-base Langley Family Housing on <u>Wednesday, 21 April 2021 from 1200-1500</u>. Volunteers will meet at the <u>Bethel Fire Station</u> located across from the Express Shoppette. Volunteers are encouraged to bring work gloves and wear sturdy footwear. There is a limit of 40 volunteers needed. Register early to save your spot!



REGISTER NOW: Email: sherry.johnson.4@us.af.mil Date: 21 April 2021 Time: 1200 -1500 Location: Off-base Langley Family Housing, Bethel Fire Station <u>Please park at the Express</u> <u>Shoppette.</u>

# Plastics and Microplastics-An Emerging Global Issue



CHESAPEAKE BAY FOUNDATION Saving a National Treasure

Join us on Wednesday, 21 April 2021, for an informative webinar created by the Chesapeake Bay Foundation that discusses plastic and microplastic pollution in the environment and how plastics threaten ocean life and wildlife. Access the webinar by using the following link on your personal device: <u>https://youtu.be/DI6LotIp3qM</u>. For more information, contact Sherry Johnson at <u>sherry.johnson.4@us.af.mil</u>.

## Environmental Education Fair Inside the BX on Earth Day, 22 April 2021, from 0900-1500

**Opportunities include:** 

- Take home activities for kids
- Environmental program brochures
- Recycling bins for electronic waste (excludes cathode-ray tube tvs)
  - Free JBLE-Langley Environmental gear

For more information, contact Sherry Johnson at sherry.johnson.4@us.af.mil.


# Smithsonian National Zoo and Museum of National History Reptile Discovery Center



Join us on <u>Friday, 23 April 2021</u>, for a virtual tour of the Reptile Discovery Center with Animal Keeper, Kyle Miller. This webinar introduces you to some of the lizards that are cared for at the National Zoo. Please note, the Smithsonian National Zoological Park has been closed under COVID-19. This is an opportunity to view these rare amphibians. Connect to the webinar at the following link: <u>https://naturalhistory.si.edu/education/teaching-resources/life-science/webinar-reptile-discovery-center-virtual-tour-kyle-miller</u>. For more information, contact Sherry Johnson at <u>sherry.johnson.4@us.af.mil</u>.



## JBLE EARTH WEEK 2021 EVENT Arbor Day



The **633d Civil Engineer Squadron**, is hosting a tree planting ceremony on Friday, 23 April from 1030-1100 in front of the *JBLE-Langley Bateman Library*, *Bldg 161*. The ceremony will celebrate JBLE-Langley's 21<sup>st</sup> year as a Tree City USA community and 22<sup>th</sup> annual Arbor Day Celebration.

RSVP to **Alicia M. Garcia** at 757-764-1090 <u>alicia.garcia.4@us.af.mil</u>







#### Lingley, Benjamin

From:	SAUNDERS, JEFFREY R GS-12 USAF ACC 633 CES/CEIE < jeffrey.saunders.9@us.af.mil>
Sent:	Tuesday, April 13, 2021 10:17 AM
To:	Lingley, Benjamin
Subject:	[EXTERNAL] FW: INFO//Earth Week 2021 Events - 19-23 April 2021
Attachments:	JBLE-Langley Earth Week Schedule and Events - 19-23 April 2021.pdf

From: JACQUES, TIFFANI K 1st Lt USAF ACC 633 CES/CCQ <tiffani.jacques@us.af.mil> Sent: Thursday, April 8, 2021 9:09 AM To: 633 CES All Enlisted <633CESAllEnlisted@us.af.mil>; 633 CES All Officers <633CESOfficers@us.af.mil>; 633 CES All Contractors <633CESAllContractors@us.af.mil>; 633 CES All Civilians <633CESAllCivilians@us.af.mil> Subject: INFO//Earth Week 2021 Events - 19-23 April 2021

MEMORANDUM FOR JBLE PERSONNEL

FROM: 633 CES/CD

SUBJECT: Earth Week 2021 Events

1. In honor of the beautiful environment that surrounds us, JBLE has designated 19-23 Apr 21 as Earth Week, marking the 51st anniversary of the first Earth Day back in 1970. There are several events scheduled at JBLE-Langley during this year's Earth Week to show our continued support of environmental sustainability and to educate about the importance of year-long environmental protection. Throughout the year, we work diligently to educate the workforce and community on environmental awareness, sustainability and the importance of following environmental policies. This week helps the JBLE family come together and create a more eco-friendly place to work and live.

2. Events throughout the week include several self-paced online resources, volunteer opportunities, an environmental educational fair, and an Arbor Day tree planting event outside the Bateman Library. Volunteer opportunities include a community clean-up in Langley Family Housing and trail preservation at the Nature Trail. JBLE-Langley will also celebrate Earth Day with the completion of the JBLE-Langley Trex Challenge, a plastic bag, film, wrap and packaging collection event. Details are provided on the attachment. Commanders and Directors are encouraged to allow their personnel to participate.

3. To volunteer for Earth Week events, or if you have any additional questions, please send an email to Sherry M. Johnson at <u>sherry.johnson.4@us.af.mil</u> with your name, organization, phone number and the event(s) you will like to participate in. You can also contact Ms. Johnson by leaving a message at 764-1130 with your information. Please sign up early to save your spot.

//SIGNED, bwc, 5 Apr 21// BRENDA W. COOK Deputy Base Civil Engineer

Attachment Earth Week Schedule and Events



### Clean the Bay Week 2021: FAQ and Guidelines

Every year the Chesapeake Bay community gathers for an annual clean-up the first Saturday in June. This Clean the Bay event was formed 33 years ago by the Chesapeake Bay Foundation.

This year due to COVID-19 restrictions, participation has been extended to a week-long event June 1<sup>st</sup> through June 5<sup>th</sup>. Get out and enjoy the amazing Virginia weather while picking up trash and debris polluting our beautiful waterways. It is our responsibility to be good stewards of this exceptional area.

As an official Clean the Bay Day partner, JBLE-Langley organizes our own cleanup and reports participation to the Chesapeake Bay Foundation.

JBLE-Langley Volunteer sign-up link: <u>Clean the Bay Volunteer Sign-up</u> https://forms.osi.apps.mil/Pages/ResponsePage.aspx?id=jbExg4ct70ijX6yIG0v5tA9x42yqBANMjId950HqmSxUQUJMT0VaMUFWRkMwM1ozWFIZUUE00Ug1Wi4u

#### Clean the Bay Week Statement from the Chesapeake Bay Foundation

Every day, each of us can do our part to make the Chesapeake even more beautiful by preventing and picking up litter. Clean the Bay Day—a long-standing Virginia tradition 33 years in the making—inspires us to do just that. This annual event also introduces participants to some of the greater, unseen problems the Bay watershed faces such as <u>degraded</u> <u>habitat</u>, <u>polluted runoff</u>, and <u>nitrogen and phosphorus pollution</u>. Clean the Bay Day shows us that we all can be environmental stewards of our waters. We hope you will join us in our mission to Save the Bay by learning more about the <u>Chesapeake Clean Water Blueprint</u> and work to restore and protect the Bay and its rivers and streams. (<u>https://www.cbf.org/events/clean-the-bay-day/index.html</u>)

#### Q1. When is Clean the Bay Week? When do I need to sign-up?

		Ju	ne 20	)21			
SU	мо	TU	WE	тн	FR	SA	
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	1	2	3	
4	5	6	7	8	9	10	

Dates 1<sup>st</sup> June – 5<sup>th</sup> June Time 9 am- Noon *each day* (w/ 8:45 am check-in) Due to COVID restrictions only 100 people are allowed to volunteer per day.

We request everyone who wants to volunteer sign-up by close of business day on 21<sup>st</sup> May.

We may ask some people to move to other days to ensure every area is adequately covered.

#### Q2. Where are we cleaning? How do I know my Zone?

Each day will have a specific zone to clean. Six cleanup zones are outlined on the Zone Map PDF, and listed below.

- Zone 1: Langley Inn Bay View Towers to ACC Trail Footbridge at Wind Tunnel Road
- Zone 2: ACC Trail Footbridge at Wind Tunnel Road to Langley Marina until Bulkhead
- Zone 3: King Street Bridge to Eagle Park Tennis Courts before walking bridge
- Zone 4: Past Eagle Park walking bridge to end of fence before Visitor Center
- Zone 5: Base waterway from Sweeney Blvd and W Flight Line Road to Commissary
- Zone 6: Bethel Housing Brick Kiln Creek Drainage

Zones 1-5 are around the JBLE-Langley base, and Zone 6 is along the creek at Bethel Housing.

Zones will be assigned based on the date you are volunteering to ensure the zones that need the most work have the most helping hands and, due to COVID restrictions, only 100 people are allowed to volunteer per day.

Zones will be assigned by 24<sup>st</sup> May the week prior to the event.

#### Q3. What will I be doing on my volunteer day? How can I prepare?

After signing up to attend before 21<sup>st</sup> May, then receiving a date and zone confirmation email, volunteers will help clean up litter around the shores and waterways in their assigned zone from 9 am – Noon. This is a great opportunity to engage with your base community and experience the shorelines and waterways that surround JBLE-Langley.

You are responsible for organizing transportation and parking to and from your zone at 0845 for checkin and until cleanup is complete. Each day will end around 1200 after all debris has been counted and materials are collected. If you need to leave early, please let your zone captain know at the event.

You are responsible for preparing yourself for volunteer working conditions and obeying COVID-19 guidelines. This includes wearing closed-toed shoes, bringing adequate hydration, using sun and insect protection, bringing sturdy work gloves, and using a face mask and social distancing as required. You will be provided with some materials by your zone captain like trash bags, grabbers, rubber gloves, and drinks.

Use your best judgement to decide how close to get to the shoreline, and how far to clean into the base along your zone with your time to maximize trash collection. Avoid stepping in wetland habitat areas and entering restricted areas. Please be respectful of wildlife.

#### Q4. Who may volunteer?

Military Personnel, Civilians, and Family members with valid ID cards and base access may attend. Pets may not attend.

During sign-up, please include family members within the group of a volunteer with a valid .mil email address.

#### Q5. Can I volunteer with a group?

Yes! To ensure that you volunteer with your group or family, choose one person with a valid .mil email address to register all participants in your group using the sign-up link. Other group members will not need to register individually.

#### Q6. Do I have to pre-register? What if I missed the 21<sup>st</sup> May deadline?

Yes. Sign up before 21<sup>st</sup> May. Space is limited and this is a popular event. Priority for date preference is given to earlier registrants.

If you have missed the deadline, contact Mr. Saunders (info below) to see if there is room on any day.

To register use the following link: <u>Clean the Bay Volunteer Sign Up</u> or email/call the CEI Environmental Water Program Manager, Mr. Jeffrey Saunders jeffrey.saunders.9@us.af.mil 757-764-1141

### Q7. When do I find out what day I am assigned? What if there is bad weather on my day?

You will be assigned a day based on your availability. The earlier you register, the more likely you will be assigned your first-choice date. Final dates and zones will be assigned 24<sup>th</sup> May.

If bad weather will clear up in the afternoon and enough volunteers are able, cleanup will shift to the afternoon from 0100-0300. Otherwise, the cleanup with be moved to another day as space allows with Covid restrictions.

The call to move the time slot or change dates will be made by 0800 each day and announced by email.

#### Q8. What is a Zone Captain? How can I be one?

Each zone will have a captain that will be the POC for that day. The captain will take attendance, ensure social distancing, be the contact for any emergencies, and estimate the weight of trash picked up using a provided estimation sheet. All the captains will meet with the CEI Environmental Team prior to Clean the Bay Week to go over assigned duties.

You can volunteer to be a captain during your volunteer sign-up by using the provided link and responding affirmatively to the "*Would you like to be a Zone Captain?*" Question. If we have multiple volunteers we will go by first come first serve.

For all additional questions, email or call the CEI Environmental Water Program Manager, Mr. Jeffrey Saunders:

jeffrey.saunders.9@us.af.mil 757-764-1141

Attachment 4: Illicit Discharge Investigation Details

#### Illicit Discharge Tracking Record, JBLE - Langley

			Section 1. Detect	tion			Section 2. Inv	estigation		Section 3. Fliminat
	Date Reported or Identified	Reported / Identified by:	Location of Discharge	Description of Discharge	Additional Investigation Required?	Date(s) of Investigation	Results of Investigation	Corrective Action to be Taken	Scheduled Date of Corrective Action	Description of Corrective Action Taken
Discharge ID No.	Enter date discharge was reported or identified	Provide name and contact number of reporting personnel	Provide address, Outfall ID, nearby Iandmark, etc.	Provide description of the potential illicit discharge (e.g. dumping, wash water, suds, oil, etc.). Include characterization from Section 6 of the outfall inspection form if applicable.	(Yes/No)	Enter date of investigation	Describe investigation results. Was the source found? Was this an illicit discharge? What is the source? What is the frequency of the discharge (continuous, intermittent, or transitory)?	Specify what will be done to eliminate the illicit discharge and by whom	Enter the estimated date for completion of corrective actions	How was the illicit discharge resolved?
8	9/28/2020	Dawn Christian 757 764-1141	Outfall 32 Dental Clinic	19,080 gallons of contaminated stormwater from the hospital construction site was discharged to the storm sewer. The water discharged to outfall 32.	Yes	9/28/2020	Source was found and yes it was an illicit discharge of from dewatering a pit of corrosive material	Contractors were re-trainined to understand the requirements for full compliance with State, Federal and JBLE-specic permits	N/A	Contractor used a Vac truck to remediate site and repair piping

ic	n		Section 4. Follow-Up
	Date Corrected	Date of Verification	
	Enter date of resolution	Enter date of follow-up investigation to verify illicit discharge has been eliminated	Additional Notes
•	9/29/2020	9/29/2020	

Attachment 5: NASA Interconnectivity Notification From: Van Dyke, Peter R. (LARC-D406) <peter.vandyke@nasa.gov>
Sent: Friday, February 15, 2019 10:10 AM
To: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>
Cc: Salcedo-Bauza, Alexandra (LARC-D406)[Herndon Solutions Group] <alexandra.salcedo-bauza@nasa.gov>
Subject: [Non-DoD Source] JBLE MS4 Interconnection Notice

Hello Dawn,

I hope all is well. NASA's MS4 permit requires that we provide notification to any downstream MS4 of known physical interconnection. This email serves as a notification that NASA Langley has known interconnections to JBLE's MS4. The primary connection points are the ditch by the Durand gate and the ditch running parallel to our taxiway onto JBLE. I know this is not new news to you, but this is a procedural requirement for us. If you have any questions please let me know.

Also, Ande Remington has moved on to another position. I want to introduce you to Alexandra Salcedo-Bauza (CC'd) who is now supporting the water program.

#### Thanks,

Peter Van Dyke National Aeronautics and Space Administration, Langley Research Center Standard Practice and Environmental Engineering Branch B1195, Room 2030 office: (757) 864-7517 cell: (757) 751-4308 email: peter.vandyke@nasa.gov

Customer satisfaction survey: <u>https://codnet.ndc.nasa.gov/TinyUrl.cfm?ID=8</u> Directorate Website: <u>http://cod.larc.nasa.gov/</u> Attachment 6: Stormwater Management Facility Inventory Tracking Spreadsheet

Date Installed	Practice Name	Practice Description	Total Acres	IMP Acres	Runoff Treated	Measurement Unit	Report Applied Amount	Latitude	Longitude	HU6/HUC12/ Facility Nam	e Inspect Date	Maint Date	Contact Name	Agency Name	Year Funded	SCM Cost
		Dry extended detention (FD) basins are depressions created by excavation or berm		= • • •					5	HAHU6				5 5 5		
Jan 2007	ExtDryPonds	construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 1	7.92	2.08	0.166	Systems	1	37.098044	-76.355630	020801/ JBLE-Langle 020801080102/ CB22	12/10/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 2	0.38	0.36	0.029	Systems	1	37.095267	-76.358796	020801/ JBLE-Langle 020801080102/ CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 3	0.26	0.25	0.020	Systems	1	37.095243	-76.358593	020801/ JBLE-Langle 020801080102/ CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 4	0.26	0.24	0.019	Systems	1	37.095218	-76.358388	020801/ JBLE-Langle 020801080102 CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 5	0.26	0.23	0.018	Systems	1	37.095197	-76.358187	020801/ JBLE-Langle 020801080102 CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 6	0.23	0.21	0.017	Systems	1	37.095174	-76.357982	020801/ JBLE-Langle 020801080102 CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 7	0.23	0.20	0.016	Systems	1	37.095154	-76.357777	020801/ JBLE-Langle 020801080102 CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 8	0.19	0.11	0.009	Systems	1	37.095134	-76.357578	020801/ JBLE-Langle 020801080102 CB22	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 9	3.48	0.64	0.051	Systems	1	37.095992	-76.359729	020801/ JBLE-Langle 020801080102 CB22	12/10/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87

Date Installed	Practice Name	Practice Description	Total Acres	IMP Acros	Runoff Treated	Measurement Unit	Report Applied Amount	latituda	Longitude		Facility Namo	Inspect Date	Maint Date	Contact Name	Agency Name	Voar Funded	SCM Cost
Date_Installeu	Flactice_Name	Produce_Description	TUtal Acres	IIVIF_ACIES	Kulloll_lleateu	Weasurement_Onit	Report_Applied_Amount	Latitude	Longitude	VAHUE	raciiity_ivaine	Inspect_Date	IVIAIIII_Date	contact_Name	Agency_Name	Teal_Tunueu	30101_0031
		construction that temporarily store runoff and release it clowly via surface flow or								VANOU							
		groundwater infiltration following storms - Dry ED basins are designed to dry out between															
		groundwater initiation following storms. Dry ED basins are designed to dry out between															
Jun2008	ExtDryPonds	such they are similar in contrast with wet ponus, which contain standing water permanentity. As	0.45	0.27	0.022	Systems	1	37.094149	-76.361885	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormuster is designed to be longer, theoretically improving								020801080102							
		treatment effectiveness								CB22							
		COMID: 10															
		SCIVI ID: 10															
		by extended detention (ED) basins are depressions created by excavation of berni															
		construction that temporarily store runon and release it slowly via surface now of															
		groundwater initiation following storms. Dry ED basins are designed to dry out between															
Jun 2008	ExtDryPonds	such they are similar in contrast with wet ponus, which contain standing water permanentity. As	0.41	0.22	0.018	Systems	1	37.094116	-76.361686	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		such, they are similar in construction and function to dry detention basins, except that the								020801080102							
		treatment effectiveness								CB22							
		SCM ID: 11															
		Scivitib. 11															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms _ Dry ED basins are designed to dry out between															
		storm events in contrast with wet ponds, which contain standing water permanently. As															
Jun 2008	ExtDryPonds	such they are similar in construction and function to dry detention bacing event that the	0.17	0.14	0.011	Systems	1	37.093990	-76.361925	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer theoretically improving								020801080102							
		treatment effectiveness								CB22							
		SCM ID: 12															
		Dry extended detention (FD) basins are depressions created by excavation or herm															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms Dry FD hasins are designed to dry out between															
		storm events in contrast with wet ponds, which contain standing water permanently. As															
Jun 2008	ExtDryPonds	such they are similar in construction and function to dry detention basins excent that the	0.15	0.14	0.011	Systems	1	37.093955	-76.361728	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								020801080102							
		treatment effectiveness								CB22							
		SCM ID: 13															
-		Dry extended detention (FD) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms Dry ED basins are designed to dry out between															
		storm events in contrast with wet ponds which contain standing water permanently. As															
Jun 2008	ExtDryPonds	such they are similar in construction and function to dry detention basins excent that the	0.23	0.16	0.013	Systems	1	37.093831	-76.361970	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer theoretically improving								020801080102							
		treatment effectiveness								CB22							
		SCM ID: 14															
-		Dry extended detention (ED) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
		storm events in contrast with wet ponds which contain standing water permanently. As															
Jun 2008	ExtDryPonds	such they are similar in construction and function to dry detention basins excent that the	0.16	0.10	0.008	Systems	1	37.093797	-76.361769	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer theoretically improving								020801080102							
		treatment effectiveness								CB22							
		SCM ID: 15															
		Dry extended detention (FD) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
		storm events, in contrast with wet ponds, which contain standing water permanently. As															
Jun2008	ExtDryPonds	such, they are similar in construction and function to dry detention basins, except that the	0.21	0.18	0.015	Systems	1	37.096668	-76.361608	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								020801080102							
1		treatment effectiveness.								CDZZ							
		SCM ID: 16															
		Dry extended detention (ED) basins are depressions created by excavation or berm						l									
		construction that temporarily store runoff and release it slowly via surface flow or															
1		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
Jun 2009	F-+DD	storm events, in contrast with wet ponds, which contain standing water permanently. As	0.10	0.17	0.014	C		27.000570	76 364074	020801/		12/0/2020		loff Cours 1	Dent -{ D-f	2000	6227 07
Juli 2008	ExtDryPonds	such, they are similar in construction and function to dry detention basins, except that the	0.19	0.17	0.014	Systems	1	37.096578	-/6.3619/1	020801/	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								CB22							
		treatment effectiveness.								CD22							
		SCM ID: 17															
		Dry extended detention (ED) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
lun 2000	Eutor Parada	storm events, in contrast with wet ponds, which contain standing water permanently. As	0.20	0.27	0.022	Cunterre	1	27.006465	76 202202	020801/		12/8/2020		loff Courselant	Dont of Deferre	2000	6227.07
Jun 2008	ExturyPonas	such, they are similar in construction and function to dry detention basins, except that the	0.30	0.27	0.022	systems	1	37.090465	-/0.362363	020801/	JRFF-raudieA	12/8/2020	-	Jett Saunders	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								CB22							
1		treatment effectiveness.															
	<u> </u>	SCM ID: 18															
1		Dry extended detention (ED) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
1		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
Jun 2008	ExtDryPonds	storm events, in contrast with wet ponds, which contain standing water permanently. As	0.24	0.25	0.019	Suctome	1	37 096343	-76 363700	020801/	IBI E-Landou	12/8/2020	_	leff Saundors	Dent of Defonce	2008	\$337 07
3411 2000	ExcoryPolius	such, they are similar in construction and function to dry detention basins, except that the	0.24	0.25	0.010	Systems	±	37.030342	-/0.302/33	020801080102	JDLL-Langley	12/0/2020	-	Jen Jaunuers	Dept of Defense	2000	١٥،١،٠٠
1		duration of detention of stormwater is designed to be longer, theoretically improving								CB22							
		treatment effectiveness.															
		SCM ID: 19			1	1						1					

Date Installed	Practice Name	Practice Description	Total Acres	IMP Acres	Runoff Treated	Measurement Unit	Report Applied Amount	Latitude	Longitude	HU6/HUC12	acility Name	Inspect Date	Maint Date Contact Name	Agency Name	Year Funded	1 SCM Cost
Dute_mstaneu	The cice_marine	Dry extended detention (ED) basins are depressions created by excavation or herm	Total Acres		Itanon_neated	Weddarennent_onit	Report_Apprica_Amount	Lutitude	Longitude	VAHU6	denity_Name	mspeet_bute		/igency_indifie	rear_ranaca	50M_003t
		construction that temporarily store runoff and release it slowly via surface flow or														
		aroundwater infiltration following storms. Dry ED basins are designed to dry out between														
		groundwater inflitration following storms. Dry ED basins are designed to dry out between														
Jun 2008	ExtDryPonds	storm events, in contrast with wet ponds, which contain standing water permanently. As	0.99	0.72	0.058	Systems	1	37.096375	-76.361974	020801/	JBLE-Langley	12/8/2020	<ul> <li>Jeff Saunders</li> </ul>	Dept of Defense	2008	\$337.87
		such, they are similar in construction and function to dry detention basins, except that the				•				020801080102	υ,					
		duration of detention of stormwater is designed to be longer, theoretically improving								CB22						
		treatment effectiveness.														
		SCM ID: 20														
		Dry extended detention (ED) basins are depressions created by excavation or berm														
		construction that temporarily store runoff and release it slowly via surface flow or														
		groundwater infiltration following storms. Dry ED basins are designed to dry out between														
lup 2008	ExtDorBonds	storm events, in contrast with wet ponds, which contain standing water permanently. As	0.45	0.26	0.020	Suctome	1	27 006009	76 262506	020801/		12/8/2020	loff Soundars	Dont of Defense	2008	¢227.97
Juli 2008	ExcoryPolius	such, they are similar in construction and function to dry detention basins, except that the	0.43	0.50	0.029	Systems	1	37.090008	-70.302300	020801/	JPTT-rangles	12/0/2020	- Jen Saunders	Dept of Defense	2008	Ş337.07
		duration of detention of stormwater is designed to be longer, theoretically improving								CB22						
		treatment effectiveness.								0022						
		SCM ID: 21														
		Dry extended detention (ED) basins are depressions created by excavation or berm														
		construction that temporarily store runoff and release it slowly via surface flow or														
		groundwater infiltration following storms. Dry ED basins are designed to dry out between														
		storm events in contrast with wet nonds, which contain standing water nermanently. As														
Jun 2008	ExtDryPonds	such they are similar in construction and function to dry detention basins, excent that the	0.60	0.49	0.039	Systems	1	37.096216	-76.361782	020801080102	JBLE-Langley	12/8/2020	<ul> <li>Jeff Saunders</li> </ul>	Dept of Defense	2008	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								CB22						
		treatment of detention of stormwater is designed to be longer, theoretically improving														
1		SCM ID: 22														
		A water impoundment structure that intercents stermwater runoff then releases it to an												++		
		A water impoundment structure that intercepts stormwater runor their releases it to an														
		open water system at a specified flow rate. I nese structures retain a permanent pool and														1
		usually have retention times sufficient to allow settlement of some portion of the														
Jun 2008	WetlandRestore	intercepted sediments and attached nutrients/toxics. Until recently, these practices were	2.51	1.39	0.111	Systems	1	37.095545	-76.362447	020801/	JBLE-Langlev	12/8/2020	- Jeff Saunders	Dept of Defense	2008	\$364.45
		designed specifically to meet water quantity, not water quality objectives. There is little or			-	-,				020801080102		, , , , ,				
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22						
		areas prior to open water release. Nitrogen reduction is minimal.														
		SCM ID: 23														
		A water impoundment structure that intercepts stormwater runoff then releases it to an														
		open water system at a specified flow rate. These structures retain a permanent pool and														
		usually have retention times sufficient to allow settlement of some portion of the														
		intercepted sediments and attached nutrients/toxics. Until recently, these practices were		. = .								/ . /				
Jun 2008	WetlandRestore	designed specifically to meet water quantity, not water quality objectives. There is little or	4.38	1.78	0.142	Systems	1	37.094784	-76.362808	020801/	JBLE-Langley	12/8/2020	- Jeff Saunders	Dept of Defense	2008	\$364.45
		no vegetation living within the pooled area nor are outfalls directed through vegetated								020801080102						
		areas prior to open water release. Nitrogen reduction is minimal.								CB22						
		SCM ID: 24														
		Open channels are practices that convey stormwater runoff and provide treatment as the												-		
		water is conveyed includes bioswales. Runoff passes through either vegetation in the														
Mar 2008	VegOnChanNoLIDCD	channel subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	1 57	0.70	0.056	Systems	1	37 100139	-76 378244	020801/	IBI E-Langley	3/1/2021	- leff Saunders	Dent of Defense	2008	\$502.48
11101 2000	Vegopenanitoobeb	underdrain and is in C or D soil	1.57	0.70	0.050	Systems	1	57.100155	-70.578244	020801/	JDLL-Langley	5/1/2021	- Jen Saunders	Dept of Defense	2008	<b>\$302.40</b>
										CB22						
		A water impoundment structure that intereents stermuster runoff then releases it to an												++		
		A water impoundment structure that intercepts stormwater runon then releases it to an														
		open water system at a specified flow rate. These structures retain a permanent pool and														
		usually have retention times sufficient to allow settlement of some portion of the														
Jun 1977	WetlandRestore	intercepted sediments and attached nutrients/toxics. Until recently, these practices were	9.27	0.13	0.010	Systems	1	37.094030	-76.367133	020801/	JBLE-Langley	12/10/2020	<ul> <li>Jeff Saunders</li> </ul>	Dept of Defense	1977	\$45.55
		designed specifically to meet water quantity, not water quality objectives. There is little or								020801080102						
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22						
		areas prior to open water release. Nitrogen reduction is minimal.														
		SCM ID: 26														/
		A water impoundment structure that intercepts stormwater runoff then releases it to an														1
		open water system at a specified flow rate. These structures retain a permanent pool and														
1		usually have retention times sufficient to allow settlement of some portion of the														
lup 1077	WatlandBactora	intercepted sediments and attached nutrients/toxics. Until recently, these practices were	17.65	0.00	0.072	Suctome	1	27 002274	76 260012	020801/		12/10/2020	loff Soundars	Dont of Defense	1077	¢210.00
Juli 1977	WetlandKestore	designed specifically to meet water quantity, not water quality objectives. There is little or	17.05	0.90	0.072	Systems	1	37.053374	-70.308813	020801/	JPTT-rangles	12/10/2020	- Jen Saunders	Dept of Defense	1977	\$510.05
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22						
		areas prior to open water release. Nitrogen reduction is minimal.								0022						
		SCM ID: 27														
		A water impoundment structure that intercepts stormwater runoff then releases it to an														
1		open water system at a specified flow rate. These structures retain a permanent pool and														- I - I
		usually have retention times sufficient to allow settlement of some portion of the														
1		intercepted sediments and attached nutrients/toxics. Until recently, these practices were														1.
Jun 1977	WetlandRestore	designed specifically to meet water quantity, not water quality objectives. There is little or	14.31	0.87	0.070	Systems	1	37.090823	-76.369517	020801/	JBLE-Langley	12/10/2020	<ul> <li>Jeff Saunders</li> </ul>	Dept of Defense	1977	\$318.89
1		no vegetation living within the nooled area nor are outfalls directed through vegetated								020801080102						
		areas prior to open water release. Nitrogen reduction is minimal								CB22						I I
		areas prior to open water release. Initiogen reduction is minimal.														1
		SUMID. 20								+ +				++		+
1		water impoundment structure that intercepts stormwater runoff then releases it to an														
		open water system at a specified flow rate. These structures retain a permanent pool and														1
		usually have retention times sufficient to allow settlement of some portion of the														1
Jun 1977	WetlandRestore	intercepted sediments and attached nutrients/toxics. Until recently, these practices were	13.11	1.40	0.112	Systems	1	37.088444	-76.368606	020801/	JBLE-Langley	12/8/2020	- Jeff Saunders	Dept of Defense	1977	\$510.23
	-	designed specifically to meet water quantity, not water quality objectives. There is little or								020801080102	5-1					
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22						1
		areas prior to open water release. Nitrogen reduction is minimal.														
1		SCM ID: 29							1			1				

Date Installed	Practice Name	Practice Description	Total Acres	IMP Acres	Runoff Treated	Measurement Unit	Report Applied Amount	Latitude	Longitude	HU6/HUC12	Facility Name	Inspect Date	Maint Date	Contact Name	Agency Name	Year Funded	SCM Cost
		A water impoundment structure that intercepts stormwater runoff then releases it to an							j	VAHU6							
		open water system at a specified flow rate. These structures retain a permanent pool and													1		
		usually have retention times sufficient to allow settlement of some portion of the													1		
lun 1977	WetlandRestore	intercepted sediments and attached nutrients/toxics. Until recently, these practices were	8 26	0.10	0.008	Systems	1	37 086498	-76 365593	020801/	IBI F-Langley	12/10/2020	_	leff Saunders	Dept of Defense	1977	\$45.55
5411 1577	wenanakestore	designed specifically to meet water quantity, not water quality objectives. There is little or	0.20	0.10	0.000	Systems	-	57.000450	70.505555	020801080102	JULE Lungicy	12, 10, 2020		Jen Juniers	Dept of Defense	1577	Ş43.55
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22					1		
		areas prior to open water release. Nitrogen reduction is minimal.													1		
		SUMID: 30 A water impoundment structure that intercents stermwater runoff then releases it to an	ł							-					∣		
		A water impoundment structure that intercepts stormwater runon them eleases it to an													1		
		usually have retention times sufficient to allow settlement of some portion of the													1		
		intercepted sediments and attached nutrients/toxics. Until recently, these practices were													1		
Jun 1977	WetlandRestore	designed specifically to meet water quantity, not water quality objectives. There is little or	7.24	0.05	0.004	Systems	1	37.086428	-76.363477	020801/	JBLE-Langley	12/10/2020	-	Jeff Saunders	Dept of Defense	1977	\$18.22
		no vegetation living within the pooled area nor are outfalls directed through vegetated								CB22					1		
		areas prior to open water release. Nitrogen reduction is minimal.								0022					1		
		SCM ID: 31													L		
		Open channels are practices that convey stormwater runoff and provide treatment as the													1		
6 2016		water is conveyed, includes bioswales. Runoff passes through either vegetation in the					_								1		
Sep 2016	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	2.42	0.20	0.016	Systems	1	37.075067	-/6.38162/	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2016	\$502.48
		COM ID: 22								CB23					1		
		Dry Detention Ponds are depressions or basins created by excavation or berm construction															
		that temporarily store runoff and release it slowly via surface flow or groundwater													1		
Sep 2016	DryPonds	infiltration following storms.	5.95	0.62	0.049	Systems	1	37.074495	-76.380903	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2016	\$848.00
		SCM ID: 33								020801080103 CB23					1		
		Open channels are practices that convey stormwater runoff and provide treatment as the													1		
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the													1		
Sep 2016	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	1.24	0.44	0.035	Systems	1	37.075376	-76.381025	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2016	\$502.48
		underdrain and is in C or D soil.								020801080103					1		
		SCM ID: 34								CB23					L		
		Open channels are practices that convey stormwater runoff and provide treatment as the													1		
Sep 2016	VagOnchanNellDCD	water is conveyed, includes bioswales. Runoff passes through either vegetation in the	0.64	0.10	0.016	Sustama	1	27.074460	76 278804	020801/	IBIE Longlou	12/8/2020		Loff Coundars	Dont of Defense	2016	¢502.48
5ep 2010	VegOpChanNoODCD	underdrain and is in C or D soil	0.64	0.19	0.016	Systems	1	37.074400	-70.376694	020801/	JPTE-FalibleA	12/8/2020	-	Jell Sauliders	Dept of Defense	2016	\$502.48
										CB23					1		
		Open channels are practices that convey stormwater runoff and provide treatment as the								-		1	1		r +		
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the													1		
Sep 2016	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	5.16	0.22	0.017	Systems	1	37.075170	-76.380560	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2016	\$502.48
		underdrain and is in C or D soil.								020801080103					1		
		SCM ID: 36								CB23					L		
		Open channels are practices that convey stormwater runoff and provide treatment as the													1		
Com 2016		water is conveyed, includes bioswales. Runoff passes through either vegetation in the					_										
Sep 2016	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	3.54	0.73	0.059	Systems	1	37.077942	-/6.3821/1	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2016	\$502.48
		SCM ID: 37								CB23					1		
		Open chappels are practices that convey stormwater runoff and provide treatment as the															
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the													1		
May 2000	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	3.14	1.05	0.084	Systems	1	37.082615	-76.374694	020801/	JBLE-Langley	1/11/2021	-	Jeff Saunders	Dept of Defense	2000	\$565.29
		underdrain and is in C or D soil.								020801080103					1		
		SCM ID: 38								CB23					L		
		Dry Detention Ponds are depressions or basins created by excavation or berm construction								020801/					1		
Mar 2012	DrvPonds	that temporarily store runoff and release it slowly via surface flow or groundwater	2.71	2.16	0.173	Systems	1	37.074474	-76.366869	020801/	JBLE-Langlev	1/11/2021	-	Jeff Saunders	Dept of Defense	2012	\$848.00
		infiltration following storms.								020801080103 CB23	0,				1		-
		SUM ID: 39								CD25							
		construction that temporarily store runoff and release it slowly via surface flow or													1		
		groundwater infiltration following storms. Dry ED basins are designed to dry out between													1		
		storm events, in contrast with wet ponds, which contain standing water permanently. As		0.00	0.054	c ·		37.0000-5	70 000000	020201/	1015	10/0/0000		1-#C :	Dart (D.)	200-	6007.07
Sep 2005	ExtDryPonds	such, they are similar in construction and function to dry detention basins, except that the	1.12	0.68	0.054	Systems	1	37.068056	-76.360048	020801/	JBLE-Langley	12/9/2020	-	Jett Saunders	Dept of Defense	2005	\$337.87
		duration of detention of stormwater is designed to be longer, theoretically improving								CB23					1		
		treatment effectiveness.													1		
		SCM ID: 40	ļ												ļ]		
		Open channels are practices that convey stormwater runoff and provide treatment as the													1		
Sep 2005	VagOnCharNellDCD	water is conveyed, includes bioswales. Runoff passes through either vegetation in the	0.27	0.11	0.000	Cust		27.067704	76 250545	020801/		12/0/2020		loff Coursels and	Dont of Deferr	2005	ĆE 00. 40
3CP 2005	vegupunanNoudud	channel, subsoli matrix and/or is inflitrated into the underlying solis. This SCM has no underdrain and is in C or D soil	0.37	0.11	0.009	systems	1	37.00//81	-70.359545	020801/	JBLE-Langley	12/9/2020	-	Jett Saunders	Dept of Defense	2005	\$502.48
										CB23							
		Dry Detention Ponds are depressions or basins created by excavation or berm construction								-			+ +		<del> </del>		1
		that temporarily store runoff and release it slowly via surface flow or groundwater				<b>A</b> .				020801/	1015	40/0/0					da
Sep 2005	DryPonds	infiltration following storms.	0.19	0.06	0.005	Systems	1	37.067830	-76.360984	020801080103	JBLE-Langley	12/9/2020	-	Jett Saunders	Dept of Defense	2005	\$848.00
		SCM ID: 42								CB23							
		Open channels are practices that convey stormwater runoff and provide treatment as the															
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the															
Sep 2005	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	1.13	0.44	0.035	Systems	1	37.067149	-76.359943	020801/	JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense	2005	\$502.48
		underdrain and is in C or D soil.								020801080103 CB23							
		SUM ID: 43	<u> </u>							023			──┤		<b> </b>		1
		open channels are practices that convey scormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the								020801/							
Sep 2011	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	31.51	22.40	1.792	Systems	1	37.071135	-76,358055	020801080103	JBLE-Langley	3/1/2021		Jeff Saunders	Dept of Defense	2011	\$502.18
	-0-F	underdrain and is in C or D soil.				.,	-			CB23		., _, _, _, _, _,					
		SCM ID: 44													1		

Data Installed	Dractico Namo	Dractice Description	Total Acros	IMD Acros	Dupoff Troated	Moosurement Unit	Bapart Applied Amount	Latitudo	Longitudo	HUC/HUC12 Encility	amo Increat Dat	Maint Data	Contact Namo	Agoney Namo	Voor Eundod	SCM Cost
Aug 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness.	2.16	1.45	0.116	Systems	1	37.070600	-76.360535	VAHU6 020801/ JBLE-La 020801080103 CB23	gley 12/9/2020		Jeff Saunders	Dept of Defense	2007	\$337.87
Jun 2013	ExtDryPonds	SCM ID: 45 Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 46	3.70	1.54	0.123	Systems	1	37.066793	-76.366190	020801/ JBLE-La 020801080103 CB23	gley 12/10/2020		Jeff Saunders	Dept of Defense	2013	\$337.87
Jun 2013	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 47	3.30	1.40	0.112	Systems	1	37.067739	-76.365255	020801/ JBLE-La 020801080103 CB23	gley 12/9/2020	-	Jeff Saunders	Dept of Defense	2013	\$464.57
Jun 2013	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 48	3.48	1.14	0.091	Systems	1	37.068257	-76.364621	020801/ 020801080103 CB23	gley 12/9/2020	-	Jeff Saunders	Dept of Defense	2013	\$848.00
Dec 2000	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 49	1.26	0.72	0.058	Systems	1	37.072550	-76.363403	020801/ JBLE-La 020801080103 CB23	gley 12/9/2020	-	Jeff Saunders	Dept of Defense	2000	\$337.87
Dec 2000	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 50	1.35	0.68	0.054	Systems	1	37.072432	-76.364202	020801/ JBLE-La 020801080103	gley 12/9/2020	-	Jeff Saunders	Dept of Defense	2000	\$337.87
Apr 2015	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 51	1.56	0.07	0.006	Systems	1	37.074457	-76.375603	020801/ JBLE-La 020801080103 CB23	gley 12/7/2020	-	Jeff Saunders	Dept of Defense	2015	\$62.81
Feb 2009	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 52	0.95	0.09	0.008	Systems	1	37.099548	-76.355627	020801/ JBLE-La 020801080103 CB23	gley 12/10/2020	-	Jeff Saunders	Dept of Defense	2009	\$45.55
Jun 2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 53	0.67	0.27	0.022	Systems	1	37.097720	-76.356485	020801/ JBLE-La 020801080103 CB23	gley 12/10/2020	-	Jeff Saunders	Dept of Defense	2010	\$848.00
Jun 2013	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 55	1.92	1.43	0.114	Systems	1	37.075794	-76.357982	020801/ JBLE-La 020801080103 CB23	gley 12/9/2020	-	Jeff Saunders	Dept of Defense	2013	\$690.91
Jun 2013	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 56	0.51	0.23	0.018	Systems	1	37.065987	-76.366677	020801/ 020801080103 JBLE-Lai CB23	gley 12/10/2020	-	Jeff Saunders	Dept of Defense	2013	\$212.00
Jun 2006	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal.	1.76	1.16	0.093	Systems	1	37.094402	-76.424570	020801/ JBLE-La 020801080103 CB23	gley 1/12/2021	-	Jeff Saunders	Dept of Defense	2006	\$410.00
Feb 2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 58	8.64	4.35	0.348	Systems	1	37.097141	-76.422678	020801/ 020801080103 JBLE-Lai CB23	gley 1/12/2021	-	Jeff Saunders	Dept of Defense	2010	\$3,710.00

Date Installed	Practice Name	Practice Description	Total Acres	IMP Acres	Runoff Treated	Measurement Unit	Report Applied Amount	Latitude	Longitude	HU6/HUC12 F	Facility Name	Inspect Date	Maint Date	Contact Name	Agency Name	Year Funded	SCM Cost
		Dry Detention Ponds are depressions or basins created by excavation or berm construction							<b>J</b>	VAHU6	)=				J		
		that temporarily store runoff and release it slowly via surface flow or groundwater								020801/							
Feb 2010	DryPonds	infiltration following storms.	7.51	2.67	0.213	Systems	1	37.099519	-76.423363	020801080103	JBLE-Langley	1/12/2021	-	Jeff Saunders	Dept of Defense	2010	\$2,226.00
		SCM ID: 59								CB23							
		Dry Detention Ponds are depressions or basins created by excavation or berm construction											1				
		that temporarily store runoff and release it slowly via surface flow or groundwater								020801/							****
Mar 2009	DryPonds	infiltration following storms.	2.00	0.07	0.006	Systems	1	37.073553	-76.384703	020801080103	JBLE-Langley	1/12/2021	-	Jeff Saunders	Dept of Defense	2007	\$800.00
		SCM ID: 60								CB23							
		Filtering devices are pre-manufactured devices that provide treatment through detention								020801/			1				
Jan 2010	FilteringDevice	and infiltration of stormwater through engineered media.	0.25	0.11	0.008	Systems	1	37.065989	-76.366401	020801080103	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$500.00
	, i i i i i i i i i i i i i i i i i i i	SCM ID: 61								CB23	0,						-
		Open channels are practices that convey stormwater runoff and provide treatment as the															
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the															
Jan 2010	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	0.17	0.02	0.002	Systems	1	37.065807	-76.366288	020801/	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$500.00
		underdrain and is in C or D soil.								020801080103							
		SCM ID: 62								CB23							
		Filtering devices are pre-manufactured devices that provide treatment through detention								020801/							
Jan 2010	FilteringDevice	and infiltration of stormwater through engineered media.	0.36	0.13	0.010	Systems	1	37.065539	-76.366573	020801080103	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$500.00
		SCM ID: 63								CB23							
		Filtering devices are pre-manufactured devices that provide treatment through detention								020801/							
Jan 2010	FilteringDevice	and infiltration of stormwater through engineered media.	0.36	0.10	0.008	Systems	1	37.065280	-76.366189	020801080103	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$500.00
		SCM ID: 64								CB23							
		Open channels are practices that convey stormwater runoff and provide treatment as the															
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the															
Jan 2010	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	0.18	0.14	0.011	Systems	1	37.065169	-76.366164	020801/	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$600.00
		underdrain and is in C or D soil.								020801080103							
		SCM ID: 65				ł		+		CD23			+				
1		Open channels are practices that convey stormwater runoff and provide treatment as the															
1 2010		water is conveyed, includes bioswales. Runoff passes through either vegetation in the	0.10		0.011	<u> </u>		27.004020	76.066440	000004/		42/44/2020				2012	<i></i>
Jan 2010	VegOpChanNoUDCD	channel, subsoil matrix and/or is inflitrated into the underlying soils. This SCM has no	0.18	0.14	0.011	Systems	1	37.064939	-76.366112	020801/	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$600.00
		underdrain and is in C or D soil.								020801080103							
		SUM ID: 66								CB23							
lan 2010	FilteringDovice	Filtering devices are pre-manufactured devices that provide treatment through detention	0.22	0.00	0.007	Sustana	1	27.064791	76 266055	020801/		12/11/2020		Loff Coundars	Dont of Defense	2012	¢500.00
Jan 2010	FilteringDevice	and inflitration of stormwater through engineered media.	0.32	0.09	0.007	Systems	1	37.064781	-76.366055	020801080103	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$500.00
		SUM ID: 67								CB23							
1 2010	Filter de « Devider	Filtering devices are pre-manufactured devices that provide treatment through detention	0.20	0.07	0.005	Custome		27.004004	76 266 440	020801/	IDIE Landau	12/11/2020		Leff Causalana	Deat of Defense	2012	6500.00
Jan 2010	FilteringDevice		0.50	0.07	0.005	Systems	1	57.004801	-70.300419	020801080103	JPTE-rangies	12/11/2020	-	Jell Sauliders	Dept of Defense	2015	\$500.00
		Filtering devices are pre-manufactured devices that provide treatment through detention								CB23 020801/							
lan 2010	FilteringDevice	and infiltration of stormwater through engineered media	0.16	0.002	0.000	Systems	1	37 064842	-76 366405	020801/	IBI E-Langley	12/11/2020		leff Saunders	Dent of Defense	2013	\$400.00
30112010	Thermgbevice	SCM ID: 69	0.10	0.002	0.000	Systems	-	57.004042	70.500405	CB33	JULE LUNGICY	12/11/2020		Jen Saunders	Dept of Defense	2015	Ş400.00
		Filtering devices are pre-manufactured devices that provide treatment through detention								020801/							
Jan 2010	FilteringDevice	and infiltration of stormwater through engineered media.	0.15	0.004	0.000	Systems	1	37.064530	-76.366520	020801/	JBLE-Langlev	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$300.00
		SCM ID: 70				-,	-			CB23	,	,,					
		Filtering devices are pre-manufactured devices that provide treatment through detention								020801/							
Jan 2010	FilteringDevice	and infiltration of stormwater through engineered media.	0.06	0.01	0.000	Systems	1	37.064504	-76.366493	020801/	JBLE-Langley	12/11/2020	-	Jeff Saunders	Dept of Defense	2013	\$200.00
	_	SCM ID: 71								CB23							
		Dry Detention Ponds are depressions or basins created by excavation or berm construction								020801/							
lan 2010	DruDonda	that temporarily store runoff and release it slowly via surface flow or groundwater	0.56	0.16	0.012	Sustana	1	27.064860	76 266244	020001/		12/11/2020		Loff Coundars	Dont of Defense	2012	¢800.00
Jan 2010	DryPonds	infiltration following storms.	0.56	0.16	0.015	Systems	1	57.004800	-70.300344	020801080103	JPTE-rankiek	12/11/2020	-	Jell Sauliders	Dept of Defense	2015	\$800.00
		SCM ID: 72								CB25							
		Dry Detention Ponds are depressions or basins created by excavation or berm construction								020801/							
lan 2010	DryPonds	that temporarily store runoff and release it slowly via surface flow or groundwater	0.36	0.10	0.008	Systems	1	37 065333	-76 366227	020801080103	IBI E-Langley	12/11/2020		leff Sounders	Dent of Defense	2013	\$600.00
50112020	Dişronus	infiltration following storms.	0.50	0.10	0.008	Systems	1	57.005555	-70.300227	CB23	JDLL-Langley	12/11/2020		Jen Jaunders	Dept of Defense	2015	\$000.00
		SCM ID: 73															
		Dry Detention Ponds are depressions or basins created by excavation or berm construction								020801/							
lan 2010	DryPonds	that temporarily store runoff and release it slowly via surface flow or groundwater	0.32	0.09	0.007	Systems	1	37 064723	-76 366030	020801080103	IBI E-Langley	12/11/2020	-	leff Saunders	Dept of Defense	2013	\$650.00
		infiltration following storms.				-,	_			CB23	,	,,					,
		SCM ID: 74															
		Open channels are practices that convey stormwater runoff and provide treatment as the								020801/							
		water is conveyed, includes bioswales. Runoff passes through either vegetation in the															
Apr 2009	VegOpChanNoUDCD	channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no	2.30	0.61	0.049	Systems	1	37.076005	-76.356640	020801080103	JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense	2007	\$500.00
		underdrain and is in C or D soil.								CB23							
			<u> </u>			+	+	+	+			+	+ +			1	
		Dry extended detention (ED) basins are depressions created by excavation or berm															
		construction that temporarily store runoff and release it slowly via surface flow or															
1		groundwater infiltration following storms. Dry ED basins are designed to dry out between															
Jun 2005	ExtDryPonds	storm events, in contrast with wet ponds, which contain standing water permanently. As	1 00	0.57	0.046	Systems	1	37 068155	-76 361436	020801/	IBI E-Langlov	12/0/2020		leff Saunders	Dent of Defense	2007	\$800.00
	EXIDIYFUIIUS	such, they are similar in construction and function to dry detention basins, except that the	1.09	0.57	0.040	Systems	±	37.000133	-70.301430	020801/	Jore-rangley	12/5/2020	-	Jen Jaunders	Dept of Defense	2007	J00000
		duration of detention of stormwater is designed to be longer, theoretically improving								CB23							
1		treatment effectiveness.															
		SCM ID: 76															
		Hydrodynamic Structures are devices designed to improve quality of stormwater using			1	1	1	1	1	+ +		1	+ +		1		
1		features such as swirl concentrators, grit chambers, oil barriers, baffles, micropools and								020801/							
Apr 2004	HydroDynStruc	absorbent pads that are designed to remove sediments, nutrients, metals, organic	0.19	0.15	0.012	Systems	1	37.074325	-76.367334	020801080103	JBLE-Langley	1/11/2021		Jeff Saunders	Dept of Defense	2001	\$400.00
		chemicals, or oil and grease from urban runoff.								CB23							
		SCM ID: 77														1	

Date_Installed	Practice_Name	Practice_Description	<b>Total Acres</b>	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HU6/HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
Oct 2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 78	2.79	1.81	0.145	Systems	1	37.094874	-76.358337	VAHU6 020801/ 020801080102 CB22	JBLE-Langley	12/10/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Jan 2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 79	1.84	0.68	0.054	Systems	1	37.074284	-76.377328	020801/ 020801080103 CB23	JBLE-Langley	12/8/2020	-	Jeff Saunders	Dept of Defense	2007	\$337.87
Feb 2002	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 80	2.31	0.72	0.058	Systems	1	37.070457	-76.367073	020801/ 020801080103 CB23	JBLE-Langley	12/10/2020	-	Jeff Saunders	Dept of Defense	2002	\$500.00
Jul 2009	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 81	0.08	0.01	0.001	Systems	1	37.073480	-76.383011	020801/ 020801080103 CB23	JBLE-Langley	1/12/2021	-	Jeff Saunders	Dept of Defense	2007	\$400.00
Sep 2020	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has an underdrain and filter media. SCM ID: 82				Systems	1	37.076031	-76.365776		JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense		
Sep 2020	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has an underdrain and filter media. SCM ID: 83				Systems	1	37.076500	-76.365866		JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense		
Sep 2020	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has an underdrain and filter media. SCM ID: 84				Systems	1	37.076333	-76.365262		JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense		
Sep 2020	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has an underdrain and filter media. SCM ID: 85				Systems	1	37.084900	-76.340362		JBLE-Langley	12/9/2020	-	Jeff Saunders	Dept of Defense		

Attachment 7: Chesapeake Bay TMDL Action Plan Implementation Status Memo Date: 08 August 2021

#### Subject: Chesapeake Bay Phase II Total Maximum Daily Load (TMDL) Action Plan Implementation Progress for JBLE–Langley

#### **1.0 INTRODUCTION**

In 2010 the United States Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL) to address excess nitrogen, phosphorus and total suspended solids (pollutants of concern or POCs) in the bay (EPA, 2010). A TMDL is the maximum amount of a pollutant that a waterbody can assimilate and still support its designated use. The Chesapeake Bay watershed encompasses over 64,000 square miles across the District of Columbia and large sections of Delaware, Maryland, New York, Pennsylvania, West Virginia and Virginia.

In the Phase I and Phase II Chesapeake Bay Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL, the Commonwealth of Virginia committed to a phased approach to reducing nutrients and suspended solids discharging from Municipal Separate Storm Sewer Systems (MS4). Section I.C of the Joint Base Langley Eustis–Langley (JBLE–Langley) MS4 permit (VAR040140, effective 01 November 2018) requires the base to prepare a Chesapeake Bay TMDL Action Plan that demonstrates future plans to meet the required nutrient and suspended solids reductions for each permit cycle as specified in the 2010 Phase I WIP (VDEQ, 2010).

JBLE–Langley developed a Chesapeake Bay TMDL Action Plan for the installation's MS4 area (JBLE–Langley, 2021). The Action Plan is an annual report on the progress made by the base in meeting the Chesapeake Bay TMDL pollutant reduction requirements, specifically the Level 2 (L2) scoping run as specified in the 2010 Phase I WIP (VDEQ, 2010). The L2 reductions are to be met in phases corresponding to the permit cycles, as outlined in Table 1-1.

Permit Cycle	Timeframe	Cycle Percent Reduction	Cumulative Percent Reduction
1	2013-2018	5%	5%
2	2018-2023	35%	40%
3	2023-2028	60%	100%

 Table 1-1. Pollutant Percent Reduction Requirements by Permit Cycle

The purpose of this memorandum is to document progress toward implementing the Chesapeake Bay TMDL Action Plan. The objectives of this memorandum are to present the required pollutant reduction requirements for the second permit cycle and discuss strategies that have been implemented or will be implemented by the Air Force Civil Engineer Center (AFCEC) and JBLE–Langley to reduce nutrient and sediment loads.

Chesapeake Bay Phase II Total Maximum Daily Load Action Plan Progress for JBLE-Langley August 2021 Page 2 of 8

This memorandum is organized into the following sections:

- Section 1.0 presents the background, purpose and objectives •
- Section 2.0 describes the pollutant load reduction requirements •
- Section 3.0 describes the pollutant credits achieved by the base
- Section 4.0 describes future best management practices (BMP) •
- Section 5.0 presents the progress summary •
- Section 6.0 contains a list of references associated with this memorandum •

#### 2.0 POLLUTANT LOAD REDUCTION REQUIREMENTS

The methodology used to calculate the pollutant loads and credits is based on the VDEQ Guidance Memo No. 20-2003 (Guidance Document) (VDEQ, 2021). The base's pollutant loads for existing sources (contributed by the base as of 30 June 2009) and new sources (contributed by the base between 01 July 2009 and 30 June 2021) were calculated using impervious and pervious land cover area and loading rates for the base's MS4 permit area as specified in the Guidance Document (VDEQ, 2021). The MS4 permit area used to calculate pollutant loads was modified to account for the approximately 356.6 acres of industrial permit VAR052285 area newly incorporated into the MS4 boundary, effective 01 July 2019. Estimated loads for 2009 and 2021 are presented in Table 2-1.

Land Cover (Subsource)	Pollutant	Estimated Total Load as of 30 June 2021 (lbs/yr)	Estimated Total Load as of 30 June 2009 (lbs/yr)	Total Los (lbs	ad Change s/yr)
Regulated Urban Impervious	Nitrogon	4,289.6	4,142.3	147.3	60.6
Regulated Urban Pervious	Nitrogen	9,204.7	9,291.4	-86.7	00.0
Regulated Urban Impervious	Dheanhama	886.1	855.7	30.4	24.6
Regulated Urban Pervious	Phosphorus	613.6	619.4	-5.8	24.0
Regulated Urban Impervious	Total Suspended	267,983.3	258,784.7	9,198.6	9 274 0
Regulated Urban Pervious	Solids	87,570.9	88,395.5	-824.6	8,374.0

Table 2-1. Existing and New Loads and Total Load Change at JBLE-Langley

Note and Acronvm:

Minor calculation discrepancies are accounted for in rounding. lbs/yr - Pounds per year

The Total Load Change is adjusted by any credits earned from BMPs implemented during the 2009–2020 timeframe to arrive at the Net Load Change. BMPs installed after 01 July 2009 were included in this analysis when they were implemented under conditions of redevelopment. The base is required to offset 40% of the *Net Load Change* by the end of the second permit cycle, as shown in Table 2-2.

Pollutant	Total Load Change (lbs/yr)	Reductions from BMPs Installed between 01 July 2009 and 30 June 2020 (lbs/yr)	Net Load Change (lbs/yr)	Required Reduction by End of Second Permit Cycle	Additional Reductions Required between 01 July 2020 and 30 June 2023 (lbs/yr)
Nitrogen	61	179	-119	40%	-47
Phosphorus	25	27	-2.5	40%	-1.0
Total Suspended Solids	8,374	10,805	-2,431	40%	-973

#### Note and Acronym:

Minor calculation discrepancies are accounted for in rounding. lbs/yr – Pounds per year

#### **3.0 LOAD REDUCTION CREDITS ACHIEVED**

This section describes load reduction credits achieved by JBLE–Langley from post-construction BMPs, street sweeping, land use change and shoreline management.

#### 3.1 Existing Post-Construction BMPs (Post-2006)

A geographic information system (GIS) inventory of existing post-construction BMPs present at JBLE–Langley and their drainage areas was developed to help calculate existing credits for the Action Plan. BMPs installed between 01 January 2006 and 30 June 2009 were included in this analysis. BMPs installed prior to 01 January 2006 are not eligible for credit and were thus excluded from consideration for this Action Plan. BMPs installed after 30 June 2009 were tracked separately to facilitate the calculation of new source loads. For BMPs installed after 30 June 2009, only those implemented under conditions of redevelopment were eligible for credits, as described in the Guidance Document (VDEQ, 2015). Summaries of existing BMP types and credits are provided in Table 3-1 and 3-2 respectively.

Table 3-1	. Summary	of Existing	<b>BMP</b> Types
-----------	-----------	-------------	------------------

	Timeframe Implemented		
ВМР Туре	01 Jan 2006 to 30 June 2009	01 July 2009 to 30 June 2020	Total
Dry Detention Pond	0	11	11
Dry Extended Detention Pond	3	1	4
Swale	2	17	19
Wet Pond or Wetland	1	0	1
Filterra Bioretention Systems	0	8	8
Total	6	37	43

		Credits (lbs/yr)			
BMP Timeframe	Number of BMPs	Nitrogen	Phosphorus	Total Suspended Solids	
2006–2009	6.0	22	2.8	1,299	
2009–2019	37	189	28	11,266	

Table 3-2. Summary of Credits from Existing Post-Construction BMPs

Acronym:

lbs/yr - Pounds per year

#### 3.2 Street Sweeping

The base performs vacuum powered street sweeping on primary roads, secondary roads and parking lots on a regular basis. Street sweeping credits are calculated based on the methodology described in *Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices* (Donner et al., 2016). Data on frequency and linear miles of sweeping was provided by the base and is used to calculate load reduction credits. A summary of street sweeping credits is presented in Table 3-3.

Table 3-3. Summary of Annual Street Sweeping Credits

Lane-Miles		Credits (lbs/yr)			
Swept	Acres Swept	Nitrogen	Phosphorus	Total Suspended Solids	
2,325.5	2,818.8	833.4	304.0	404,851.4	

Acronym:

lbs/yr - Pounds per year

#### 3.3 Land Use Change

Two land use change BMP opportunities were identified on the base at Eaglewood Golf Course. At both locations, brush and trees are growing in place of managed turf. The land use change credited at these locations is thus based on the turf to mixed-open land use, and the credit reductions were calculated per Appendix V.H of the Guidance Document. A summary of land use change credits is presented in Table 3-1.

Pollutant	Turf to Mixed Open (acres)	Credit (lbs/yr)
Nitrogen	5.22	32.4
Phosphorus	5.22	5.9
Total Suspended Solids	5.22	0

Table 3.1	Summary	of Land	Use	Change	Credits
1 able 3-1.	Summary	or L'anu	Use	Change	Creans

Acronym:

lbs/yr - Pounds per year

#### 3.4 Shoreline Management

A summary of pollutant load reductions from the 10,841 linear feet of shoreline restoration activities on the base is presented in Table 3-5. Additional details are provided in the TMDL Action Plan.

Shoreline Restoration (ft)	TN Credit (lbs/yr)	TP Credit (lbs/yr)	TSS Credit (lbs/yr)
5,400	118.6	83.8	408,800
3,150	34.6	24.4	119,233
725	1.9	0.4	1,821
1,566	100.1	33.9	152,521

142.5

682,374

255.1

**Table 3-5. Summary of Shoreline Management Reductions** 

Acronyms:

lbs/ft/yr – Pounds per foot per year lbs/yr – Pounds per year

Total

#### 4.0 FUTURE BMPs

Because all of these projects were or will be implemented after 30 June 2020 no credit is being claimed.

The base will continue to investigate the applicability and feasibility of additional BMPs and BMP types in order to meet the pollutant load reduction requirements of the Chesapeake Bay TMDL. Opportunities for effective retrofit options will be explored and prioritized to make the best use of available resources.

#### 5.0 PROGRESS SUMMARY

A summary of the required load reductions is presented in Table 5-1 and the second permit cycle pollutant credits are presented in Table 5-2.

Pollutant	Required Load Reduction by 2018 (lbs/yr)	Required Load Reduction by 2023 (lbs/yr)	Required Load Reduction by 2028 (lbs/yr)
Nitrogen	41	325	812
Phosphorus	9.0	72	179
Total Suspended Solids	2,853	22,824	57,060

#### Table 5-1. Summary of Permit Cycles 1, 2 and 3 Reduction Requirements

Acronym:

lbs/yr - Pounds per year

#### Table 5-2. Summary of Second Permit Cycle Reduction Requirements and Credits

Pollutant	Second Permit Cycle Cumulative Percent Reduction Requirement	Required Load Reduction by 2023 (lbs/yr)	Credits from Existing BMPs (lbs/yr) <sup>1</sup>	Second Permit Cycle Target Met?
Nitrogen	40%	325	1,143	Yes
Phosphorus	40%	72	455	Yes
<b>T</b> 10 11				

Note and Acronym:

<sup>1</sup> Does not include credits related to New Sources that were previously accounted for in Table 2-2.

lbs/yr - Pounds per year

If the BMPs considered in this analysis are maintained and fully functional to provide the design performance, it is the conclusion of this analysis that the base currently meets both its second and third permit cycle reduction requirement goals for all the POCs. The base will continue to investigate the applicability and feasibility of additional BMPs and BMP types in order to continue to meet the future milestone pollutant load reduction requirements of the Chesapeake Bay TMDL.

Chesapeake Bay Phase II Total Maximum Daily Load Action Plan Progress for JBLE–Langley August 2021 Page 7 of 8

#### **6.0 REFERENCES**

- JBLE–Langley. 2021. Draft Chesapeake Bay Phase II Total Maximum Daily Load Action Plan for Joint Base Langley Eustis–Langley. June 2021.
- Donner, S., Frost, B., Goulet, N., Hurd, M., Law, N., Maguire, T., Selbig, B., Shafer, J., Stewart, S. and Tribo, J. 2016. *Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices*. Chesapeake Bay Program Office. Accessed at <u>https://www.chesapeakebay.net/channel\_files/23064/final\_street\_cleaning\_expert\_panel\_report.p</u> <u>df</u>.
- EPA. 2010. Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment. 29 December 2010.
- Forand N., Dubois K., Halka J., Hardaway S., Janek, G., Karrh, G., Koch, E., Linker, L., Mason, P., Morgereth, E., Proctor, D., Smith, K., Stack, B., Stewart, S. and Wolinski, B. 2017. *Recommendations of the Expert Panel to Define Removal Rates for Shoreline Management Projects.* Chesapeake Bay Program Office. Accessed at <u>https://www.chesapeakebay.net/documents/LONG\_SHORELINE\_MGMT\_EPR\_05152018.pdf.</u>
- Virginia Department of Environmental Quality (VDEQ). 2010. Chesapeake Bay TMDL Phase I Watershed Implementation Plan. 29 November 2010.
- VDEQ. 2018. General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, General Permit No. VAR040140. Effective date 01 November 2018.
- VDEQ. 2021. Guidance Memo No. 20-2003. 6 February, 2021.

Chesapeake Bay Phase II Total Maximum Daily Load Action Plan Progress for JBLE–Langley August 2021 Page 8 of 8

#### LIST OF ACRONYMS

AFCEC	Air Force Civil Engineer Center			
BMP	Best Management Practice			
EPA	Environmental Protection Agency			
GIS	Geographic Information System			
JBLE-Langley	Joint Base Langley Eustis-Langley			
lbs/yr	Pounds per year			
MS4	Municipal Separate Storm Sewer System			
POC	Pollutants of Concern			
TMDL	Total Maximum Daily Load			
VDEQ	Virginia Department of Environmental Quality			
WIP	Watershed Implementation Plan			

Attachment 8: Bacteria TMDL Action Plan Implementation Status Memo Date: 08 August 2021

Subject: Back River Bacteria TMDL Action Plan Implementation Progress for JBLE–Langley

#### **1.0 INTRODUCTION**

In 2017, the Virginia Department of Environmental Quality (VDEQ) developed 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 2018), 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 Section II.B.1 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, 2021).

The purpose of this memorandum is to document progress toward implementing the Back River Bacteria TMDL Action Plan (JBLE–Langley, 2021). 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, 2021). 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. If additional controls are needed, prepare a summary of potential controls and identify 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.
- Update the Bacteria TMDL Action Plan to reflect activities performed during the reporting year. Adjust the implementation schedule as needed to reflect the findings from the field and desktop assessments and report on progress annually.

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.

#### 3.0 BACTERIA SOURCE ASSESSMENT

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

Source Category	Source	Percent
	Deer	4.3
Wildlife	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

Table 3-1.	<b>Fecal Bacteria</b>	Source A	Allocations	(%) in th	e Back River	Watershed
	(Source:	VDEQ 2	017, Table	3.7 and <b>T</b>	<b>Table 3.8</b> )	

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 initiated source assessments on base in February 2020. The sources identified, and strategies taken to address these sources are described in Sections 4 and 5.

In April 2021, a follow-up bacteria source investigation was conducted via windshield survey at JBLE– Langley to locate bacteria sources described in Table 3-1 and to identify other potential sources that might be present. In addition, multiple JBLE–Langley personnel involved with activities that may be affecting fecal bacteria loading from the base were interviewed to discuss actions that JBLE–Langley was currently taking to reduce or remove bacteria sources.

#### 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 Action Plan.

#### 4.1 Wildlife

Wildlife is the single largest source contributor of bacteria within the Back River watershed and also the most challenging to control. Migratory birds are the largest wildlife source of bacteria and any reductions in the population of resident bird species can provide a substantial reduction in bacteria loading to the Back River. In managing the base's clear recovery zone, JBLE–Langley works with the United States Department of Agriculture, Natural Resource Conservation Service to relocate deer, coyotes, large birds, cats and other animals. The base also manages lands surrounding the airfields to deter wildlife and reduce bird/animal aircraft strike hazard (BASH) safety concerns.

#### 4.2 Pets

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 privatized staff, 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, 2020).

JBLE–Langley maintains a military/police dog training center and associated dog kennels. 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 2020).

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.

#### 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 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. Potential sources of bacteria in runoff from both the dog training center and horse stable are addressed through stormwater treatment practices and training as described here and in the MS4 Program Plan (JBLE–Langley, 2020).

#### 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. In 2017, JBLE–Langley replaced piping and spent approximately 1.3 million dollars on sanitary sewer repairs to reduce infiltration and inflow. In addition, the primary force main that services most of the base has been redesigned and is planned for construction. These efforts assist in reducing the occurrence of sanitary sewer overflows. Illicit discharge detection and elimination (IDDE) inspections of outfalls were conducted during 2019-2020 to help detect and identify illicit discharges into the stormwater network. Initiatives planned for 2020-2021 included continued inspections of non-industrial outfalls and investigation and reporting of potential illicit discharges (JBLE–Langley, 2020).

The JBLE–Langley marina offers both dry and wet slips available for boat storage. The marina installed a new \$18,000 marine pump out station on 15 September 2017 that is available for users at a cost of \$5.00. During normal operating hours, marina staff will assist visitors with pump out needs thereby

Back River Bacteria TMDL Action Plan Implementation Progress for JBLE–Langley August 2021 Page 5 of 7

helping 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 a number of additional control measures to address sources of fecal coliform on the base. Over the past eight 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 (Figure 5-1). 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 2024-2025. These areas of stabilization increase resilience to major storm events and flooding, provide habit for native animals and plants and reduces erosion and suspension of sediment and associated bacteria in the Back River and Chesapeake Bay.

In June 2017, JBLE–Langley partnered with the Chesapeake Bay Foundation and Booker Elementary school to implement an oyster reef restoration project in the Back River near the base marina. Oyster reefs form a complex ecosystem for filter feeders that filter bacteria and other pollutants from the water column. Through this project, 75 bushels of oyster shells and 2,000 young oyster spat were used to begin building the reef habitat. This project also helped to educate children on the role oysters play in filtering pollutants, improving water quality and providing habitat within the Back River and Chesapeake Bay (Figure 4-8 and Figure 4-9). 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. The class was led by instructors from the Chesapeake Bay Program. Due to COVID restrictions this event could not be conducted in 2020 or 2021; however, a power point presentation on the benefits of oyster reef restoration was provided by the base to Booker Elementary and taught a part of the class curriculum. The base plans on resuming the oyster reef restoration project in future years when COVID restrictions are lifted.

#### 5.0 BACTERIA-REDUCING ACTIVITIES IN PROGRESS (2021-2022)

JBLE–Langley has initiated 2021-2022 actions that are identified in Section 2.0 of this memorandum. In addition, JBLE–Langley is in the process of exploring additional opportunities for public education and outreach to aid in the reduction of bacteria sources. These opportunities are aimed at pet owners, individuals involved with the dog training center, individuals involved with the Langley Saddle Club and base personnel who could potentially identify illicit discharges from the base's sanitary sewer network.

#### 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 Action Plan, including preliminary source investigations and schedule for addressing bacteria sources.
Back River Bacteria TMDL Action Plan Implementation Progress for JBLE–Langley August 2021 Page 6 of 7

- Relocated deer, coyotes, large birds, cats and other animals away from the base and deterred these 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.
- Performed sanitary sewer repairs to reduce infiltration and inflow and redesigned the primary force main that services most of the base.
- 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. Additional shoreline restoration is planned for 2024-2025.
- 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.
- Currently exploring additional opportunities for public education and outreach to aid in the reduction of bacteria sources.

Back River Bacteria TMDL Action Plan Implementation Progress for JBLE–Langley August 2021 Page 7 of 7

## 7.0 REFERENCES

- JBLE–Langley. 2020. Joint Base Langley Eustis–Langley (JBLE–Langley) Municipal Separate Storm Sewer System (MS4) Program Plan. January 2020.
- JBLE–Langley. 2021. Back River Bacteria Total Maximum Daily Load Action Plan for Joint Base Langley Eustis–Langley. Prepared by AECOM Technical Services, Inc. June 2021.
- 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. 21 June 2017. Approved by the U.S. EPA on 9 February 2018.
- VDEQ. 2018. Authorization to discharge under the Virginia Stormwater Management Program and the Virginia Stormwater Management Act. VPDES Permit Number VAR040140. Permit effective 01 November 2018.

## 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