JBLE-Eustis Municipal Separate Storm Sewer System (MS4) Program Plan

Purpose and Objective

Joint Base Langley-Eustis – Fort Eustis (JBLE–Eustis), Virginia, holds a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), General Permit #VAR040035, issued by the Commonwealth of Virginia Department of Environmental Quality (VDEQ) on 1 November 2023 (the Permit). In accordance with provisions outlined in this permit, JBLE–Eustis has developed and implemented a comprehensive stormwater management program designed to prevent or reduce the discharge of sediment and other pollutants into the installation's stormwater conveyance system.

In addition to the MS4 Permit # VAR040035, the facility also holds a Virginia Pollutant Discharge Elimination System (VPDES) Permit #VA0025216, issued in 2022. Activities conducted at JBLE–Eustis can be categorized as either industrial or non-industrial. Industrial activities include those activities that are conducted in support of water, land, and air transportation operations at the base or those activities that are designated by industrial SIC codes (e.g., recycling, hazardous waste storage). Non-industrial activities are regulated by the MS4 permit, and include those activities that support base operations but are not associated with water, land, or air transportation operations (e.g., Auto Hobby Shop, Golf Course Maintenance, construction activities, etc.)

General Permit #VAR040035 Section I.D.1 requires JBLE–Eustis to evaluate the MS4 program on an annual basis to assess program compliance, the appropriateness of the identified best management practices (BMPs), and progress towards achieving the identified measurable goals. JBLE Eustis has prepared this MS4 program plan to outline the steps that are taken by the facility to remain in compliance with the permit. The objective of this document is to serve as the primary reference for implementation of the MS4 program and requirements outlined in General Permit #VAR040035 including the six (6) minimum control measures (MCM) and two (2) special conditions related to water quality conditions.

Site Description

JBLE–Eustis is located adjacent to the City of Newport News, Virginia which is part of the Hampton Roads metropolitan area. The installation is located on Mulberry Island, a small peninsula bordered by the James River to the west, Warwick River to the east, and Skiffes Creek toward the north. Smaller waterbodies on or bordering the installation include Jail Creek, Morrison's Creek, Island Creek, Bailey Creek, and Eustis Lake. The installation occupies approximately 8,000 acres and houses a variety of military organizations and support activities. Most of the development is located at the northern end of the installation, while the southern portion of the peninsula remains largely undeveloped, supporting military training areas. A golf course and an airfield are located near the center of the installation.

The installation is the home of the headquarters of the United States Army Training and Doctrine Command (TRADOC), the Army Training Support Center (ATSC), and the 7th Transportation Brigade (Expeditionary). TRADOC is responsible for developing, educating, and training soldiers and civilians; supporting unit training; and designing, building, and integrating capabilities, formations, and equipment. The ATSC is responsible for managing the Army Training Support Enterprise (TSE), which provides oversight for programs that enable development, delivery, and sustainment of training and education support capabilities. The 7th Transportation Brigade (Expeditionary) provides logistics support around the world for port, terminal, and watercraft units conducting expeditionary operations in support of land operations. Other units on the installation include the Army Aviation Logistics School, Non-commissioned Officer's (NCO) Academy, Aviation Applied Technology Directorate, and the James River Reserve Fleet (JRRF). The JRRF, a tenant managed by the Maritime Administration (MARAD), leases land on the installation and maintains several vessels moored in the James River.

The total population of the installation is approximately 12,900, comprised of approximately 6,200 military personnel and 2,800 dependents living on installation, as well as approximately 3,900 civilian non-residents who commute to the installation daily.

MS4 Permit Implementation Responsibilities

The Stormwater Program Manager at JBLE–Eustis oversees the Stormwater Program as prescribed in General Permit #VAR040035. All questions and comments regarding the implementation of the installation Stormwater Program should be directed to the following contact:

Suzanne Dyba, Stormwater Program Manager
733d Civil Engineering Division
1407 Washington Blvd.
JBLE–Eustis, VA 23604
Phone: (757) 878-5218
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Environmental Management System Cross Functional Team Water Quality Working Group

As part of VPDES Permit #VA0025216, JBLE–Eustis has identified a team of individuals that help to develop, implement, maintain, and revise the installation industrial stormwater pollution prevention plan (SWPPP). In addition to these responsibilities, JBLE–Eustis has incorporated this Environmental Management System (EMS) Cross Functional Team (CFT) Water Quality Working Group into the MS4 Program to help implement the individual MCM programs. The 733rd Civil Engineer Squadron/ Environmental Element (733d CES/CEIE) Stormwater Program Manager acts as the Water Quality Working Group Team Leader.

Table 1. EMS CFT Water Quality Working Group and Responsibilities, JBLE-Eustis

Title	Responsibilities
CE Environmental Flight Stormwater Program Manager	• Prepares MS4 Program Plan updates and modifications. • Coordinates implementation of the MS4 Program Plan. • Monitors compliance with Program Plan activities. • Conducts or contracts the annual inspections. • Monitors activity operations for changes that may affect the MS4 Program Plan. • Reviews and updates the SWPPP and MS4 Program Plan at least once per year. • Develops an MS4 Program Annual Report and completes an assessment of the program implementation for the reporting period. • Coordinates with VDEQ regarding spills and mitigation measures. • Arranges appropriate MS4 required training for base personnel.
CE Environmental Flight Training Coordinator	• Arranges for additional training for facility personnel as needed on good housekeeping and procedural BMPs (e.g., drip pans and vehicle/equipment washing).
CE Engineering Flight Chief and CE Operations Flight Chief	• Plans, manages, directs, and coordinates the operation and maintenance activities of the municipal utility systems (i.e., water, wastewater, and stormwater).
Air Force Civil Engineer Center (AFCEC) Installation Support Section (ISS) Water Programs Support	• Contracts for the annual inspection and certification of non-stormwater dry weather discharges (i.e., illicit discharge dry weather screening) MS4 outfalls, if required. • Programs funding for stormwater-related services to support municipal stormwater compliance.
733d Civil Engineering Squadron / Engineering Flight Portfolio Optimization (733d CES/CENP)	• Responsible for planning and programming military construction, alteration, and improvement projects. • Responsible for oversight of contractors and Erosion and Sediment Control (ESC) measures during construction projects.
Water/Land/Air Sector Maintenance Units	• Performs facility inspections. • Implements BMPs for site-specific industrial activities.
733d Civil Engineering Division / Engineering Flight Project Management (733d CES/CENM)	• The 733d CES/CENM is responsible for professional engineering and architectural services to encompass the design and design review of facilities, including new construction, alteration, and repair projects.

MCM 1: Outreach and Education

Requirement

JBLE–Eustis implements a public education and outreach program that targets active duty and civilian personnel, contractors, and residents. The public education and outreach MCM is designed to increase the public's knowledge of how to reduce stormwater pollution, especially as it pertains to impaired waters and other local water pollution issues. The outreach program also aims to increase the public's knowledge of hazards associated with illegal discharges and improper waste disposal. The education and outreach program uses diverse strategies that are targeted toward individuals or groups that are most likely to have significant stormwater impacts.

The Warwick River and Skiffes Creek which surround the base are listed as impaired for fecal coliform bacteria, in violation of the Virginia Administrative Code (VAC) 9VAC25-260-160 and 9VAC25-260-170A water quality standard. In 2008, the United States Environmental Protection Agency (EPA) approved Total Maximum Daily Loads (TMDL) for Warwick River and Skiffes Creek to address excess fecal coliform bacteria in these waterbodies (VDEQ, 2007). The TMDL report assigned individual wasteload allocations (WLA) for bacteria to the city of Newport News, York County, and JBLE–Eustis. A TMDL is the maximum amount of a pollutant that a waterbody can assimilate and still support its designated use(s). JBLE-Eustis maintains the *JBLE-Eustis Warwick River and Skiffes Creek Bacteria Total Maximum Daily Load Action Plan*, last updated 30 September 2021, which is the plan for addressing bacterial pollutants in stormwater runoff from the installation. It is updated as needed and is available for viewing on the JBLE Environmental website and incorporated into this plan by reference (see Appendix A).

BMPs/Strategies that Demonstrate Compliance

Utilization of websites and social media (media materials) – The installation utilizes both internal and external websites as well as social media (i.e., Facebook) to provide training and awareness to installation personnel and residents. JBLE–Eustis maintains these websites and updates them with current information to educate the public about stormwater pollution and pollution prevention practices. In addition, 733d CES/CEIE staff regularly develop outreach messages related to the three high-priority water quality issues and post these messages on the installation environmental Facebook page.

Informational emails (media materials) – 733d CES personnel also utilize mass emails, including installation-wide, select organizations on installation, and specific job groups (e.g., Activity Environmental Coordinator [AEC]) to communicate messages to large, targeted groups of installation personnel. JBLE-Eustis has an office that coordinates and releases operation orders (OPORDs) from the 733 Mission Support Group Operations Sections (733 MSG/OPS). Mass email messages communicate guidance on stormwater related topics that apply specifically to the target audience. In addition, the Military Family Housing (MFH) privatization contractor also

sends stormwater related informational emails provided by 733d CES/CEIE to residents through their own email listservs.

Handouts/educational materials (curriculum/training materials) – 733d CES/CEIE develops handouts and educational materials related to the high-priority water quality conditions identified in this program plan and distributes them at locations where members of the target audience are anticipated to be (e.g., Earth Week/Day events, World Water Day, Force Support Squadron (FSS) sponsored events). Handouts include pamphlets, children's activity books, or one-page informational sheets that present information and provide a means to contact the Stormwater Program Manager with any questions or comments. Additional education materials include flyers and posters that can be utilized during events such as Earth Week/Day or MFH resident meetings.

Public events (speaking engagements/curriculum/training materials) – 733d CES/CEIE participates in public events throughout the year, including Earth Week/Day, and monthly newcomer orientation briefings. The CEIE staff provides promo items related to the high-priority water quality items (i.e. pet waste bags) at locations where events are being held and engage with the public. When possible, Staff also presents stormwater pollution prevention information to groups of schoolchildren at General Sanford Elementary or engages in other public speaking events.

Joint Base Langley-Eustis is the latest Air Force-led installation to engage in the Conservation Law Enforcement Partnership (CLEP) with the U.S. Fish and Wildlife Service. The CLEP officers work within the CES/CEIE office and support security improvement and public safety while also promoting resource conservation. These federal wildlife officers provide natural resources and water quality outreach to the installation and the community, by engaging with elementary school students in classrooms and the community, training installation personnel on wildlife laws and regulations, and participating in various community events.

Standard Operating Procedure/Policies

The Air Force has established an environmental, safety, and occupational health policy, AF Policy Directive 90-8, Environment, Safety & Occupational Health Management and Risk Management. The JBLE Environmental Policy Statement supplements this policy with installation-specific requirements and concerns, in accordance with DoDI 4715.17, Environmental Management Systems. The purpose of this procedure is to define the JBLE-Eustis Environmental Policy Statement to protect built and natural infrastructure, protect the environment where 733 MSG and Mission Partners live and work, and ensure sustainability of the missions of the 733 MSG and Mission Partners.

The JBLE Policy Statement is the driver for managing the JBLE-Eustis activities that impact the environment. The scope of the JBLE Environmental Policy Statement states JBLE-Eustis' commitment to maintain compliance, prevent pollution, execute plans for energy, environmental, safety and occupational health objectives and targets, continually improvement, and communicate environmental commitments to all organizations and local community.

JBLE- Eustis Environmental Policy Statement:

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

1. Comply – We will comply with all environmental regulations and all other requirements while reducing compliance costs and liabilities.
2. 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.
3. 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).
4. Achieve improvements - We will continuously improve our programs and processes through the use of effective management and planning.
5. Notify - We will communicate our environmental commitments and performance to all levels of our organization and local community.

Measurable Goals for BMP Evaluation

JBLE–Eustis annually reviews the education and outreach program effectiveness for MCM1. Items reviewed include:

- The appropriateness of the high priority water quality issues, including the need to change them for the next permit year
- The appropriateness of the previously identified target audiences for each high priority water quality issue
- The effectiveness of the outreach messages as well as the method used to deliver the messages for each of the issues to the public

Persons Responsible for Implementation

733d CES/CEIE Staff and Personnel

HIGH-PRIORITY STORMWATER ISSUES

JBLE–Eustis implements a public education and outreach program to comply with the Permit requirements to educate the base community regarding the impacts of stormwater discharges on receiving waters, as well as measures that the community can take to reduce pollutants to the stormwater drainage system. Three high-priority water issues have been identified to meet the goal of educating the public in accordance with the Permit. JBLE–Eustis 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 in Permit #VAR040035 Part I.E.1.d, Table 1 - Strategies for Public Education and Outreach.

Each of the high-priority water quality issues are discussed below.

High-priority Stormwater Issue #1: Curb illegal fats, oils, and grease disposal at food service establishments, food trucks, and family housing to the stormwater drainage system.

Rationale for Selection:

Improper Fats, Oils, and Grease (FOG) disposal can lead to sanitary sewer overflows (SSOs) by causing blockages from FOG build-up in pipes. This can lead to an illicit discharge of wastewater into the storm sewer system.

Public Audience:

Dining facility managers and operators, FSE operators and employees, food truck operators, and Housing occupants.

Strategies:

This includes trainings to kitchen staff through annual trainings such as HRFOG as well as distribution of materials and social media to MFH residents on proper FOG disposal. Signage is posted in kitchens regarding FOG BMPs and grease management. Dining facility staff are trained in FOG management using the training provided by Hampton Roads Planning District Commission (HRPDC) at www.hrfog.com. Information and premium items are made available to housing residents at various events throughout the year.

Time Periods:

Ongoing throughout the year.

High-priority Stormwater Issue #2: Curb illegal dumping within family housing and the dormitories

Rationale for Selection:

The frequency of resident turnover creates the potential for illegal dumping due to differing policies and procedures at different installations and short time periods between relocation notification and time of move. As such, there is a need to provide information related to illegal

dumping (e.g., littering, car wash water, and disposal of household chemicals) and the proper ways to dispose of specific items.

Public Audience:

Installation residents, including both Family Housing and the dormitories.

Strategies:

Through education and outreach, base personnel and their families can reduce and/or eliminate illegal dumping around the dormitories and MFH areas by properly disposing of unwanted items. This includes proper disposal of unwanted items associated with Permanent Change of Station (PCS). This also includes proper disposal of any byproducts of automotive maintenance such as motor oil, fluids, and tires. Proper disposal of such items can be made more convenient by conducting vehicle maintenance at the auto hobby shop. Performing vehicle maintenance in any MFH area is prohibited by the Fort Eustis Residence Guide distributed by the privatization contractor to new residents.

Time Periods:

Continuously throughout the year. As new residents arrive to either MFH or Main Base housing areas, they are provided with information regarding illegal dumping and illicit discharges. This includes Environmental Management Awareness and Competency (EMAC) training, which is required to be completed on The Environmental Awareness Course Hub (TEACH) within 30 days of arrival. Education and outreach efforts are also conducted around Earth Day/Week, World Water Day, and America Recycles Day.

<u>High-priority Stormwater Issue #3:</u> Responsible Pet Ownership/Picking up Pet Waste

Rationale for Selection:

The Warwick River and Skiffes Creek which surround the base are listed as impaired for fecal coliform bacteria, as noted in the approved Total Maximum Daily Loads (TMDL) for Warwick River and Skiffes Creek. It is the responsibility of all members of the JBLE-Eustis community to work together to reduce bacterial pollutants in stormwater runoff. Public education on the importance of responsible pet ownership in regard to pet waste is a component of the *JBLE-Eustis Warwick River and Skiffes Creek Bacteria Total Maximum Daily Load Action Plan.*

Reminding residents to clean up after their pets is an on-going challenge for many communities, including JBLE-Eustis. As a dog-friendly community, the installation unfortunately continues to see dog waste in common areas. The frequency of resident turnover creates the need for constant reminders of responsible dog ownership.

Public Audience:

Installation residents, primarily at Family Housing, and at the outdoor recreation area.

Strategies:

JBLE–Eustis develops educational materials related to responsible pet ownership and picking up after dogs and distributes them at locations where members of the target audience are anticipated to be (e.g., Earth Week/Day, dog parks, military family housing [MFH], and Halloween events). Handouts also provide a means to contact the Stormwater Program Manager with any questions or comments. Additional education materials include pet waste bags/ bag holders which are provided at many areas on the installation for pet owners to utilize. Education and outreach information is also conveyed through the installation's website.

Time Periods:

Continuously throughout the year. As new residents arrive to either MFH or Main Base housing areas, they are provided with information regarding responsible dog ownership and the requirement to pick after their dogs.

MCM 2: Public Involvement and Participation

Requirement

The base cultivates a public involvement and participation program with the objective to engage with installation personnel and residents in a meaningful way, and to provide a platform for the public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns, and provide input on JBLE-Eustis' MS4 program plan, TMDL plans, or the stormwater program in general. JBLE–Eustis has taken steps to implement the program BMPs as specified in Part I.E.2 of the Permit.

BMPs/Strategies that Demonstrate Compliance

CES/CEIE communicates with installation personnel and residents via internal and external websites, Operation Orders (installation-wide personnel emails that come from the 733 Mission Support Group Operations Sections), as well as regular interactions and education events with various community groups (e.g., the Department of Game and Inland Fisheries, Hampton Roads Sanitation District (HRSD), the York County Extension Office, and the Newport News Recycling office).

The installation participates in local events through either promotion, sponsorship, or other involvement on an annual basis. The activities selected for participation focus on the reduction of stormwater pollutants being discharged to the receiving water, improvement of water quality, and support of local restoration and clean-up initiatives. JBLE–Eustis participates in at least four public involvement and participation activities throughout the year. The installation promotes the following types of events during each permit year:

- Clean the Bay Day (Restoration)

- America Recycles Day (Disposal/Collection Events)
- Earth Day/Week (Education/Pollution Prevention/Restoration)
- Annual installation spring/fall clean-up (Disposal/Collection)
- Illicit discharge reporting hotline (Monitoring/Pollution Prevention)
- Stormwater pollution prevention education via social media applications (Education/Pollution Prevention)
- Household hazardous chemicals collection (Disposal/Collection)

Participation in the Air Force's Community Partnership Initiative, or Public-Public; Public-Private (P4) Partnership Initiative. The P4 Partnership Initiative seeks to identify and develop opportunities to share resources, increase efficiency, and improve effectiveness of operational, educational, and recreational programs. The JBLE–Eustis P4 Partnership is currently focused on the Virginia peninsula and includes a partnership with the City of Newport News to pick up and dispose of yard waste from JBLE–Eustis, and to accept recycling and household hazardous material from Fort Eustis residents.

These events are promoted through posts on the installation and environmental Facebook pages, as well as with articles in the newspaper, mass community emails, flyers, and announcements on marquees located on the installation.

These activities are regularly considered and evaluated to be sure that the public is being appropriately engaged.

Standard Operating Procedure/Policies

See JBLE- Eustis Environmental Policy Statement in MCM1 information.

JBLE-Eustis utilizes a webpage address where mechanisms for the public to report (i) potential illicit discharges, improper disposal, or spills to the MS4, (ii) complaints regarding land disturbing activities, or (iii) other potential stormwater pollution concerns. The webpage also contains the methods for how the public can provide input on the permittee's MS4 program and TMDL action plans; It can be found at: https://www.jble.af.mil/Units/Army/Eustis-Enviromental/. All public input on the installation's program plan is available on the website and is responded to in a timely manner. An administrative record of all public correspondence is kept on the installation's internal SharePoint site.

Measurable Goals for BMP Evaluation

Goals for program evaluation include:

- Have meaningful communications annually with >100 civilians, soldiers, and/or families about pollution prevention.
- At least 20 volunteers can plant native plants and/or a pollinator garden annually.
- At least 20 volunteers can participate in a clean-up event annually.

Persons Responsible for Implementation

CES/CEIE plans and reviews outreach events and participation goals annually. Outreach events provide opportunities for people to get involved in the installation's good housekeeping efforts. Annual review of the program plan allows environmental staff to alter these measurable goals as necessary.

MCM 3: Illicit Discharge Detection and Elimination

Requirement

Personnel who work and live at JBLE-Eustis must be able to detect, identify, and address unauthorized non-stormwater discharges. This activity is conducted through the installation's Illicit Discharge Detection and Elimination procedures. This section of the program requires a comprehensive and accurate MS4 map within a geodatabase, a Geographic Information Systems-compatible shapefile for submission to regulatory agencies, and an information table for the storm sewer system map and outfall inventory. If any outfalls affect any downstream adjacent MS4 permit holders, they are to be notified as required.

It is necessary for the JBLE-Eustis to have policies and standard operating procedures in place that prohibit unauthorized non-stormwater discharges into the storm sewer system. In addition, the installation is required to have written illicit discharge detection and elimination (IDDE) procedures designed to detect, identify, and address unauthorized non-stormwater discharges.

BMPs/Strategies that Demonstrate Compliance

The MS4 map and information table required by Part I.E.3.a of the Permit are updated at least annually by CES staff and is readily available for review, and are incorporated into this MS4 program plan by reference (see Appendix A).

JBLE-Eustis utilizes the *JBLE-Eustis Illicit Discharge Detection and Elimination Procedures* (see Appendix B) which can be found on the JBLE environmental website at https://www.jble.af.mil/Units/Army/Eustis-Enviromental/.

733d CES/CEIE encourages installation personnel and residents to report illicit discharges and/or illegal dumping activities and works with the MFH privatization company to distribute information to residents about the IDDE program and how to report illicit discharges. Methods used include Facebook posts, mass emails, and posts to the JBLE–Eustis Environmental website. All newcomers receive a wallet card with IDDE reporting instructions including the JBLE–Eustis Fire and Emergency Services telephone number for spill reporting during newcomer orientation.

Standard Operating Procedure/Policies

JBLE-Eustis prohibits unauthorized non-stormwater discharges into the storm sewer system. The Environmental Management Procedures (EMP) Program is a memorandum signed by the Headquarters 633D Air Base Wing Vice-Commander which enables JBLE-Eustis' compliance

with Federal, State, Department of Defense, and Air Force regulations, directives, instructions, and manuals, and are specific to JBLE-Eustis. EMPs assign responsibilities and provide instruction and guidance for appropriate management of environmental programs to ensure regulatory compliance.

Environmental Management Procedure (EMP) 4.4.6.2 establishes the procedures to implement policy to control and decrease wastewater and stormwater pollution. The EMP applies to all activities and personnel, including military, civilians, vendors, suppliers, and contractor personnel who enter JBLE-Eustis.

Qualified CES/CEIE staff conduct dry weather field screenings annually. The IDDE Procedure has outlined the dry weather screening process, including an inspection schedule for each permit year. JBLE–Eustis uses this process to implement required dry weather screening.

There are no known physical interconnections with other MS4s. 733d CES/CEIE continues to monitor for interconnections with other MS4s.

Measurable Goals for BMP Evaluation

Goals for program evaluation include JBLE–Eustis stormwater mapping completeness and accuracy. The GIS and available records are reviewed annually and updated as needed.

Illicit discharge detection and elimination is a constant goal of this organization. Personnel follows the regulations concerning IDDE and follow-through to assure that spills do not harm local waterways. The installation personnel will continue to maintain the level of quick spill response and proper training to be certain that spills do not increase.

Persons Responsible for Implementation

Community reporting – The installation currently utilizes the JBLE–Eustis Fire and Emergency Services telephone number (757-878-1008 or 4281; Defense Switched Network [DSN] 826; or 911) is used as the primary hotline for reporting illicit discharges. This hotline is manned 24 hours per day, seven days per week. This number is advertised as part of the community outreach effort to educate the installation regarding illicit discharges. Additional numbers that are available for installation personnel and residents include the 733d CES/CEIE staff (757-878-4123) and/or Housing Management staff (757-369-8344).

Dry weather field screening – 733d CES/CEIE identified 83 MS4 outfalls and two (2) comingled (i.e., industrial and MS4 activities) outfalls that discharge to various receiving water bodies. The Permit requires a minimum of 50 outfalls be screened each year during dry weather. The IDDE Procedure has outlined the dry weather screening process, including an inspection schedule for each permit year. JBLE–Eustis CES/CEIE uses this process to implement required dry weather screening.

Illicit discharge investigation – Illicit discharge investigations are the responsibility of 733d CES/CEIE staff. Investigations may be performed by installation personnel or by outside

consultants hired by the installation; however, all investigation results are reviewed by 733d CES/CEIE staff. The IDDE Procedure has outlined the illicit discharge investigation process. JBLE–Eustis uses this process to implement required illicit discharge investigation procedures.

Maintain information table associated with storm sewer system map – An information table is continually maintained with information regarding each outfall or point of discharge. The table is maintained by CES staff.

Illicit discharge elimination – Illicit discharges are generally the result of either structural issues or operational deficiencies. The mechanism for eliminating a discharge depends on the discharge type. Initiating and verifying the elimination of an illicit discharge is the responsibility of 733d CES/CEIE. 733d CES/CEIE staff provides educational materials and advocate for funding when needed to eliminate illicit discharges. Depending on the location and type of discharges, specific elimination actions may be conducted by other organizations including AECs and UECs, Housing Management staff, the installation maintenance contractor (Global Management Services [GMS]), the installation wastewater privatization contractor (Old Dominion Utility Services [ODUS]), or other outside contractors hired by JBLE–Eustis. Regardless of the entities involved in eliminating an illicit discharge, 733d CES/CEIE is responsible for following-up on the corrective actions to verify the illicit discharge has been resolved. JBLE–Eustis uses this process to implement required illicit discharge elimination procedures.

Spill duty rotation – 733d CES/CEIE personnel are constantly on a rotation of spill duty which consists of regular training, reporting, and manning the spill phone. Staff responds to spills anytime it is necessary, 24-hours per day. OSHA's Hazardous Waste and Emergency Response standard (HAZWOPER) requires that workers be trained to perform their anticipated job duties without endangering themselves or others. All spill responders in CES/CEIE have HAZMAT certification and continue to be trained with current 8-hour HAZWOPER training annually.

MCM 4: Construction Site Stormwater Runoff Control

Requirement

JBLE-Eustis utilizes its legal authority to address discharges that may be entering the MS4 from regulated construction site stormwater runoff. The purpose of this MCM is to develop, implement, and enforce a program to reduce the pollutants (e.g., total suspended solids [TSS], total phosphorus [TP], and total nitrogen [TN]) related to land-disturbing activities including clearing, grading, or excavation that results in a land disturbance activity of 10,000 square feet or greater.

BMPs/Strategies that Demonstrate Compliance

Wastewater/Stormwater Management Environmental Management Procedure (EMP) 4.4.6.2 assigns responsibilities, and provides instruction and guidance for appropriate management of the Erosion and Sediment Control program to ensure the installations regulatory compliance. The installation utilizes this legal authority to address discharges entering the MS4 from regulated

construction site stormwater runoff. JBLE–Eustis falls under Section I.E.4.a.4 as a federal entity that has not developed standards and specifications. As such, all inspections are conducted in accordance with the Virginia Erosion and Sediment Control Law (§ 62. 1-44.15:51 et seq. of the Code of Virginia) and Virginia Erosion and Sediment Control Regulations (9VAC25-840).

Standard Operating Procedure/Policies

JBLE-Eustis controls construction site stormwater runoff as described and mandated in EMP 4.4.6.2. Virginia Department of Environmental Quality (VDEQ) certified CES staff inspects all land disturbing activities as defined in § 62.1-44.15:51 of the Code of Virginia.

These inspections occur:

(a) During or immediately following initial installation of erosion and sediment controls.
(b) At least once per every two-week period.
(c) Within 48 hours following any runoff producing storm event; and
(d) At the completion of the project prior to the release of any performance bond.

Inspections take place during regular work hours at the discretion of the CES. Inspections may follow up with a report of findings, which may require corrective action. The CES inspector reserves the right to require ESC is adequately installed and maintained and can authorize stop work authority if necessary.

Measurable Goals for BMP Evaluation

JBLE–Eustis will continue to:

- Follow the policies and procedures described in the Virginia Erosion and Sediment Control Regulations and the most recent version of the *Virginia Stormwater Management Handbook (VDEQ).*
- Complete land-disturbing activity inspections immediately following the initial installation of ESC measures, at least once during every two-week period, within 48-hours of any runoff-producing storm event, and upon completion of the project.
- Include ESC topics and issues in required training for installation personnel.

Persons Responsible for Implementation

The 733d CES/CEIE Water Quality Program Manager maintains the required certifications and trainings consistent with Virginia Erosion and Sediment Control Regulations (9VAC25-840) for plan review and inspection as part of the installation’s ESC Program.

MCM 5: Post-Construction Stormwater Management

Requirement

JBLE-Eustis is required to develop, implement, and enforce a program in new development and development on prior developed lands which address post-construction stormwater runoff that enters the MS4 from land disturbing activities by implementing a post-construction stormwater runoff management program. Because JBLE-Eustis is a federal entity and has not developed standards and specifications in accordance with the Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and Virginia Stormwater Management Regulations (9VAC25-870), the installation implements a post-construction stormwater runoff control program through compliance with 9VAC25-870 and with the implementation of a maintenance and inspection program consistent with Part I.E.5.b of the Permit.

BMPs/Strategies that Demonstrate Compliance

Wastewater/Stormwater Management Environmental Management Procedure (EMP) 4.4.6.2 assigns responsibilities and provides instruction and guidance for appropriate management of the BMP maintenance and Post-Construction BMP Management Program to ensure regulatory compliance.

CES/CEIE has a robust BMP inspection process. The installation has developed and regularly maintains written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of its stormwater management facilities. VDEQ certified inspectors conduct annual inspections of structural BMPs on the installation and the CES/CEIE provides the CES/CEO of required maintenance needs.

A report is developed annually with the summary of the BMP inspections completed during the reporting year, as well as the actions taken to ensure long term maintenance. The report is utilized by CES Operations to determine a prioritized work schedule of non-routine maintenance needs for each structural BMP facility.

CES/CEIE maintains a spreadsheet of all known permittee-owned and permittee-operated facilities that discharge into the MS4. The spreadsheet also includes all BMPs implemented by the permittee to meet the Chesapeake Bay TMDL load reduction as required in Part II A of the Permit. The electronic database is updated no later than 30 days after a new stormwater management facility is brought online. This database populates the BMP Warehouse which is maintained by VADEQ. By October 1 of each year, CES/CEIE staff electronically reports the stormwater management facilities and BMPs implemented between July 1 and June 30 of each year using the VADEQ BMP Warehouse and associated reporting template for any practices not reported in accordance with Part I E 5 f including stormwater management facilities installed to control post-development stormwater runoff from land disturbing activities less than one acre and for which a General VPDES Permit for Discharges of Stormwater from Construction Activities was not required.

Standard Operating Procedure/Policies

Air Force Policy Directive (AFPD) 32-10, Installations and Facilities (20 July 2020) – AFPD 32-10 establishes policy for Air Force installations and facilities to employ a sustainable asset management approach.

Air Force Policy Directive (AFPD) 32-70, Environmental Considerations in Air Force Programs and Activities (30 July 2018) establishes policy for systematic environmental planning and program development.

The inspection and maintenance program for BMPs owned and operated by the permittee that discharge to the MS4 utilizes the *JBLE-Eustis Structural BMP Inspection and Management Plan*, which is submitted here by reference (see Appendix A) and is updated annually. The inspection and maintenance program requirements include the following:

- Develop and maintain written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of structural BMPs.
- Inspect BMPs owned and operated by the installation no less than annually.
- If, during the inspections, it is determined that maintenance is required, maintenance must be conducted in accordance with the written procedures outlined in the *JBLE-Eustis Structural BMP Inspection and Management Plan* and the Virginia BMP Clearinghouse.

Each of the BMPs owned and operated by JBLE-Eustis has individual maintenance plans that utilize information about the design of the BMP and on-going maintenance requirements and schedules. These maintenance plans have been developed utilizing the as-built plans, including the planting plans where applicable, the Virginia BMP Clearinghouse, the VDEQ *Virginia Stormwater Management Handbook* and Air Force engineering technical letters (ETL).

Measurable Goals for BMP Evaluation

Complete the annual BMP inspections (performed by a VDEQ-certified inspector or PE-licensed engineer).

Track all installation BMPs that discharge to the MS4. The tracking documentation is maintained by 733d CES/CEIE and includes the following:

- The BMP type
- The location as latitude and longitude
- The acres treated by the BMP (i.e., total, pervious, and impervious)
- The date the BMP was brought online (MM/YYYY). If the date is not known, a date of 30 June 2009 will be used as the date brought online for all previously existing BMPs.
- The 6th order HUC for the watershed in which the BMP is located

- If the BMP is part of the installation Chesapeake Bay TMDL action plan required in Part II A or local TMDL action plan required in Part II B, or both.

Persons Responsible for Implementation

BMP Inspection records are utilized by 733d Civil Engineer Squadron/Operations (733d CES/CEO) flight to assess the existing operations contract or award new contracts to perform required maintenance.

Privately owned/maintained BMPs located on JBLE-Eustis, specifically MFH, which are maintained by the MFH privatization contractor, are inspected by the 733d CES/CEIE or VDEQ-certified contractor in conjunction with the rest of the installation's annual BMP inspections. The 733d CES/CEIE Stormwater Program Manager provides the inspection reports and maintenance requirements as necessary to the MFH contracted office personnel for follow-up and inclusion with their maintenance processes.

JBLE-Eustis utilizes the EMS CFT Water Quality Working Group to implement the MCM in accordance with Part I.E.5.h(5) of the Permit, as described in Table 1. The EMS CFT Water Quality Working Group consists of 733d CES Engineering Flight, Operations Flight, Fire and Emergency Services Flight, Installation Management Flight, 733d CES/CEIE, AECs for high priority facilities, PAO, and the Judge Advocate Office. The team meets quarterly to discuss the MS4 program and review the goals outlined in the program plan. The EMS CFT Water Quality Working Group responsibilities are outlined in EMP 4.4.6.2.2, Stormwater Management. They include:

- Implementation of the MS4 program plan requirements
- Defining and agreeing upon updated goals for the MS4 program
- Being aware of updates to the MS4 requirements and determining if changes must be made to maintain compliance
- Maintaining a clear line of communication with installation leadership, including utilization of the CFTs

MCM 6: Pollution Prevention and Good Housekeeping

JBLE-Eustis maintains a robust pollution prevention program. Activities are driven by the Permit, but also Air Force mandates such as the Memorandum for Distribution signed by Colonel Hung, 15 SEP 21 which enforces compliance with the EMP program.

This minimum control measure has four main parts for JBLE-Eustis which will be discussed in detail in the following pages:

1. Good Housekeeping Procedures

2. High Priority Area Facilities SWPPPs
3. Nutrient Management Plans
4. Pollution Prevention Training

1. Good Housekeeping Standard Operating Procedures

Requirement

JBLE-Eustis maintains and implements written procedures designed to prevent illicit discharges, ensure all landscape wastes are disposed of properly, prevent unauthorized wash or wastewater, and minimize pollutants in stormwater runoff, and prevent pollutant discharge from daily operations (e.g., road, street, and parking lot maintenance; equipment maintenance; and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers). These written good housekeeping procedures are fundamental within the training program at JBLE-Eustis and are provided within the Environmental Management Policies (EMPs).

BMPs/Strategies that Demonstrate Compliance

Cleanup of Paved Surfaces (Street Sweeping) – Street sweepers are utilized by JBLE–Eustis to remove debris and solids accumulation from streets and parking lots throughout the installation. The installation operation contractor performs street sweeping throughout the installation. The current street sweeping schedule includes regular sweeping once every one to two weeks based on the agreed upon schedule included in the contract. The contracted company utilizes a vacuum-assisted sweeper and material is weighed and disposed of.

Cleanup of Shops, Work Areas, and Storage Areas – Routine cleanup is scheduled for shops, work areas, and storage areas in order to minimize hazardous conditions to the installation employees and/or environment. Work areas are maintained in accordance with the Air Force Occupation Safety and Health (AFOSH) requirements. Personnel are provided appropriate training related to good housekeeping and safety procedures.

Snow and Ice Removal – The 633/733d Joint Base Langley-Eustis (JBLE) Snow and Ice Control (S&IC) Plan 32-104 dated 2 Feb 2023 and AFI 32-1001dated 4 Oct 2019 are two directives that the installation utilizes to effectively run any de-icing operations. Annual training for personnel for snow and ice control techniques and management procedures is provided through the Department of the Air Force's (DAF) Training Network.

POV Washing – JBLE–Eustis operates a POV car wash that residents are encouraged to use to wash vehicles. Balfour Beatty, the independent company who managed military family housing areas, prohibits washing cars in roadways and resident's driveways and encourages reporting to their hotline (757-369-8335). Government owned vehicle (GOV) washing is currently performed in designated areas and are covered under a separate industrial VPDES permit (Permit No. VA0025216).

Internal Assessments – EMP 4.5.2, Activity and Facility Inspections, requires that all activities (e.g., food service establishments, loading docks, golf course and other maintenance areas) conduct inspection of their facilities for compliance with all environmental media areas on a quarterly basis. In addition, it requires annual assessments of facilities for good housekeeping and pollution prevention compliance. Internal assessments are required to be completed no later than 1 December of each year. Results from the assessments are compiled and used to brief senior installation management at semi-annual Environmental Safety and Occupational Health (ESOH) council meetings.

Environmental Management Procedures – JBLE-Eustis maintains pollution prevention procedures for installation facilities through the EMPs, including the *Pollution Prevention Environmental Management Procedure* (EMP) 4.4.6.5. This EMP establishes the procedures to implement the policy for pollution prevention and methods to integrate pollution prevention into the functional framework of the installation. The goal of the procedures is designed to:

- Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations
- Prevent illicit discharges
- Ensure the proper disposal of waste materials, including landscape wastes
- Prevent the discharge of wastewater or vehicle wash or both into the MS4 without authorization under a separate VPDES permit
- Require implementation of BMPs when discharging water pumped from utility construction and maintenance activities
- Minimize the pollutants in stormwater runoff from bulk storage areas (e.g., salt storage and topsoil stockpiles)
- Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendation
- Prevent pollutant discharge into the MS4 from leaking POVs and equipment

Standard Operating Procedure/Policies

Activities and the associated EMPs which describe all good housekeeping standard operating procedures are as follows:

Activities	Associated EMPs
Prevention of illicit discharges	EMP 4.4.7 Spill Prevention and Response EMP 4.4.6.2 Wastewater-Stormwater Management
Preventing the discharge of wastewater or permittee vehicle wash water or both	EMP 4.4.6.2 Wastewater-Stormwater Management
Ensuring the proper disposal of waste materials, including landscape wastes	Hazardous Waste Management Plan EMP 4.4.6.7 Solid Waste and Recycling Management Solid Waste and Recycling Disposition Guide JBLE-Eustis Recycling Program Brochure EMP 4.4.6.2 Wastewater-Stormwater Management
Requiring implementation of best management practices when discharging water pumped from utility construction and maintenance activities	EMP 4.4.6.2 Wastewater-Stormwater Management
Minimizing the pollutants in stormwater runoff from bulk storage areas	EMP 4.4.6.2 Wastewater-Stormwater Management EMP 4.4.6.5 Pollution Prevention EMP 4.4.6.16 Contracting JBLE-Eustis Environmental Special Conditions EMP 4.5.2 Activity Inspections
Preventing pollutant discharge into the MS4 from leaking municipal automobiles and equipment	EMP 4.4.6.2 Wastewater-Stormwater Management EMP 4.4.6.5 Pollution Prevention EMP 4.4.6.16 Contracting JBLE-Eustis Environmental Special Conditions EMP 4.5.2 Activity Inspections
Ensuring that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations	EMP 4.4.6.10 Natural Resource Management EMP 4.4.6.12 Integrated Pest Management – IPM EMP 4.4.6.2 Wastewater-Stormwater Management

EMP 4.4.6.16 *Contracting JBLE-Eustis Environmental Special Conditions* contains a summary of mechanisms the JBLE - Eustis uses to ensure contractors working on behalf of the permittees

implement the necessary good housekeeping and pollution prevention procedures, and stormwater pollution plans as appropriate.

Good Housekeeping Procedures – Written procedures for specific activities on the installation are available on the website and are attached to the EMP 4.4.6.2 Wastewater-Stormwater Management for enforcement. These include:

- JBLE-Eustis Good Housekeeping Procedures: Exterior Surfaces and Pressure Washing Activities
- JBLE-Eustis Good Housekeeping Procedures: Water Disposal from Dewatering Activities
- JBLE-Eustis Good Housekeeping Procedures: Road, Street, Sidewalk, and Parking Lot Maintenance and Repair
- JBLE-Eustis Good Housekeeping Procedures: Pesticides, Herbicides, and Fertilizer Application
- JBLE-Eustis Good Housekeeping Procedures: Vehicle and Equipment Maintenance
- JBLE-Eustis Good Housekeeping Procedures: Storage of Landscaping Material

Measurable Goals for BMP Evaluation:

These EMPs are evaluated and updated as necessary on an annual basis as per the Memorandum for Distribution signed by Colonel Hung, 15 Sep 21.

Persons Responsible for Implementation

733 CES/CEIE Personnel

2. High Priority Facilities:

Requirement

High priority facilities are those that have a greater probability for the discharge of pollutants and are not covered under a separate VPDES permit. These facilities may have exposure to stormwater resulting from rain, snow, snowmelt, or runoff. The installation maintains and implements a site-specific stormwater pollution prevention plan (SWPPP) for each facility that is identified. These plans contain good housekeeping best management practices and environmental guidance for the facilities. The facilities are inspected annually for compliance with the plans, and operators at these facilities receive training on these plans. They need to be reviewed no later than 30 days after any unauthorized discharge, release, or spill reported in accordance with Part III G of the Permit, to determine if additional measures are necessary to prevent future unauthorized discharges, releases, or spills. If necessary, the SWPPP shall be updated no later than 90 days after the unauthorized discharge.

BMPs/Strategies that Demonstrate Compliance

The SWPPPs for the high-priority facilities are incorporated into this document by reference (see Appendix A). Each SWPPP includes:

- A site description that includes a map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies
- A description and checklist of potential pollutants and pollutant sources
- A description of all potential non-stormwater discharge
- Written procedures designed to reduce and prevent pollutant discharge
- A description of the applicable training provided per part I.E.6.m of the Permit
- An annual inspection frequency and maintenance requirements for site specific source controls. The date of each inspection and associated findings and follow-up must be logged in each SWPPP.
- A log of each unauthorized discharge, release, or spill incident reported in accordance with Part III.G of the Permit, including:
    - Date of incident
    - Material discharges, released or spilled
    - Estimated quantity discharged, released, or spilled

No later than 30 June of each year, all high-priority MS4 facilities without a SWPPP that are owned or operated by JBLE–Eustis, are evaluated to determine if the facility has a high potential to discharge pollutants to the MS4. If the facility is determined to need a SWPPP, one must be developed no later than 31 December of the same year. If it is determined that the activities at a high-priority facility no longer meet the criteria as a facility with a high potential to discharge pollutants, the facility may be removed from the list of high-priority facilities with a high potential to discharge pollutants.

In the event of an unauthorized discharge, release, or spill, the site-specific SWPPP will be reviewed no later than 30 days after the event. The SWPPP should be reviewed to determine if any additional measures are necessary to prevent future unauthorized discharges, releases, or spills. If necessary, the SWPPP should be updated no later than 90 days after the event.

The site-specific SWPPP is kept at the high-priority facility and utilized as part of personnel training. The SWPPP may be maintained on site as either a hard or electronic copy.

If it is determined that the activities at a high-priority facility no longer meet the criteria as a facility with a high potential to discharge pollutants, the facility may be removed from the list of high-priority facilities with a high potential to discharge pollutants.

Standard Operating Procedure/Policies

- Review previously identified high-priority water quality issues for applicability.

- Identify new water quality issues as needed and provide justification for update in the program plan and annual report.
- Identify the target audience or audience who is most likely to have significant impacts for each high-priority water quality issue.
- Develop relevant messages and associated educational and outreach materials for message distribution to the selected target audiences from Table 1 of the Permit Part I.E.1.d.
- Provide for public participation during public education and outreach program development.
- Annually conduct sufficient education and outreach activities to reach the target audience.
- Assess the education and outreach program, identify any weaknesses or shortcomings, and provide for the adjustment of target audiences and messages including educational materials and delivery mechanisms.
- Update the plan to include:
    - A list of high-priority stormwater issues to be communicated to the public
    - Rationale for selection of the issues
    - Identification of the audience
    - Strategies to be utilized from Table 1 of the Permit Part I.E.1.d.
    - Anticipated time periods for the message

Measurable Goals for BMP Evaluation

To ensure that the most appropriate facilities are the highest priority, a review of previously identified high-priority water quality facilities/issues are conducted. Staff identifies new water quality issues as needed and provide justification for update in the program plan and annual report.

Persons Responsible for Implementation

CEIE personnel in coordination with the WQ Working Group and the Stormwater Program Manager

3. Turf and landscape nutrient management plans (NMP):

Requirement

Turf and landscape nutrient management plans are required to be developed and implemented on all lands where nutrients are applied to a contiguous area greater than one acre.

BMPs/Strategies that Demonstrate Compliance

The Pines Golf Course operates on 70.8 acres of managed greens and is the only facility on the installation that falls under this requirement. The golf course does have a current NMP, approved by the Virginia Department of Conservation (DCR) on 12 Aug 2021. The hardcopy of this plan is

located in the maintenance office at the Pines Golf Course maintenance office. The NMP is kept electronically on the 733d CES/CEIE SharePoint site.

Standard Operating Procedure/Policies

Implement a turf and landscape NMP developed by a certified turf and landscape nutrient management planner in accordance with §10.1-104.2 of the Code of Virginia for all lands owned or operated by the installation where nutrients are applied to a contiguous area greater than one acre. Annually track the total acreage of lands upon which turf and landscape NMPs have been implemented or may be newly required. Renew the Pines Golf Course NMP before the expiration date of 30 Jun 26.

Measurable Goals for BMP Evaluation

Regular verification that staff is utilizing the NMPs.

Persons Responsible for Implementation

CEIE Staff in coordination with the Stormwater Program Manager and golf course managers and staff.

4. Pollution Prevention Training:

Requirement

Training for good housekeeping activities that utilizes the high-priority area SWPPPs is a requirement and is a part of the installation's training plan.

BMPs/Strategies that Demonstrate Compliance

Every month the installation hosts a Newcomers Orientation, and CES/CEIE presents information to new installation personnel about the IDDE program, how to report spills, and how to learn more about the stormwater program at JBLE-Eustis.

All JBLE–Eustis personnel are required to participate in annual training that includes stormwater pollution prevention training. Military and civilian personnel that handle municipal solid wastes, recycling materials, hazardous and non-hazardous wastes, universal wastes, and hazardous substances that have the potential to contaminate the stormwater drainage system at JBLE–Eustis are also required to participate in specialized training developed and maintained by 733d CES/CEIE. Training activities are as follows:

- Environmental Management Awareness and Competency (EMAC)
- Advanced Environmental Management (AEM)

EMAC training is provided in an online format via the TEACH website (https://usaf.learningbuilder.com). This training is required for all military and civilian personnel

within 30 days of arrival and is to be repeated annually. EMAC annual training is geared toward installation personnel working throughout the base that have the potential to respond to spills, handle waste management activities or hazardous materials and hazardous waste.

In addition to the EMAC training courses, AEM training is required all personnel. Activity Environmental Coordinators (AEC)s, Unit Environmental Coordinators (UEC), and Hazardous Waste Coordinators track and verify training in their respective areas of responsibility. The AEM training is also provided online through the TEACH website.

733d CES/CEIE also provides awareness training for the United States Army Transportation Corps (USATC) School Warrant Officers Advanced Course (WOAC) on an as needed basis.

Topics include:

- Material management practices
- Waste Management
- Spill response
- Control Measure Operation and Maintenance

733d CES/CEIE performs annual inspections of facilities to assess the industrial activities (i.e., Routine Facility Inspections) and high priority municipal facilities within the MS4 area (e.g., Base Exchange [BX], Commissary, privately owned vehicle [POV] car wash) where activities are conducted that may contribute pollutants to the stormwater drainage system (e.g., car washing, loading docks, outdoor storage). AECs also conduct quarterly inspections of their facilities. The inspections allow 733d CES/CEIE personnel to highlight implementation of the stormwater management program at specific locations throughout the installation by updating the training materials and tailoring the training experience to highlight installation specific observations, both good and bad. The inspections are also used to aid in supplemental education of the installation personnel regarding stormwater management practices, the JBLE–Eustis program and requirements, as well as any regulatory changes that affect the installation.

Standard Operating Procedure/Policies

EMP 4.4.2, Environmental Awareness and Competency Training requires JBLE–Eustis personnel to take EMAC and AEM training as appropriate based on personnel assignments within 30 days of arrival at the installation. Refresher training is required on an annual basis.

The installation Integrated Contingency Plan (ICP), Emergency Response Action Plan (ERAP), and Spill Prevention Control and Countermeasures (SPCC) Plan, incorporated into this plan by reference (see Appendix A), are included in additional training that is available to installation personnel.

JBLE–Eustis personnel that may be involved in spill response are required to maintain the required training specified in AFI 10-2501 and the installation ICP.

Installation personnel that may be handling POL must be trained in the maintenance of equipment to prevent discharges. Training courses related to discharge procedure protocols, applicable pollution control regulations, general facility operations, and the contents of the installation SPCC Plan are maintained by 733d CED/CEIE and provided to personnel via the TEACH website.

Measurable Goals for BMP Evaluation

Secure training for 1,000 personnel annually.

Persons Responsible for Implementation

733d CES/CEIE

Appendix A
JBLE – Eustis Documents Incorporated into the MS4 Program Plan by Reference

List of Documents Incorporated into the JBLE – Eustis Program Plan by Reference

Document Name	Date Updated	Location
Storm system Map	Updated regularly	JBLE – Eustis GIS geodatabase
Information table associated with the storm system map	Updated regularly	JBLE – Eustis GIS geodatabase
JBLE Eustis Aafes Shoppette and Car Wash SWPPP	April 2024	Physical copy: the Aafes Gas Station and Car Wash office Electronic copy: 733d CES/CEIE SharePoint site
JBLE Eustis Golf Course Maintenance SWPPP	April 2024	Physical copy: The Pines Golf Course maintenance office Electronic copy: 733d CES/CEIE SharePoint site
JBLE-Eustis Warwick River and Skiffes Creek Bacteria Total Maximum Daily Load Action Plan	Sept 2021	https://www.jble.af.mil/Units/Army/Eustis-Enviromental/
Joint Base Langley-Eustis Snow and Ice Control Plan 32-104	Feb 2023	733d CES/CEIE SharePoint site
AFI 32-1001: Civil Engineer Operations	Oct 2019	733d CES/CEIE SharePoint site and available online
Integrated Pest Management Plan	May 2020	733d CES/CEIE SharePoint site
JBLE-Eustis Integrated Contingency Plan	June 2021	733d CES/CEIE SharePoint site
Spill Prevention Control and Countermeasures	Aug 2020	733d CES/CEIE SharePoint site
Emergency Response Action Plan	June 2021	733d CES/CEIE SharePoint site

Appendix B

JBLE – Eustis IDDE Procedures

JBLE-Eustis Illicit Discharge Detection and Elimination Procedures

Purpose and Objective

Stormwater runoff from developed land can harm surface water resources by changing natural hydrologic patterns and elevating pollutant concentrations and loadings. Stormwater runoff may contain or mobilize high levels of contaminants, such as sediment, suspended solids, nutrients, heavy metals, and pathogens. To address this problem, the U.S. Environmental Protection Agency (EPA) established stormwater regulations as part of the National Pollutant Discharge Elimination System (NPDES) permits program under the Clean Water Act (CWA), which are implemented through NPDES permits.

Joint Base Langley-Eustis – Fort Eustis (JBLE–Eustis), Virginia, holds a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040035, issued by the Commonwealth of Virginia Department of Environmental Quality (DEQ) on 1 November 2023. In accordance with provisions outlined in this permit, JBLE–Eustis has developed and implements a comprehensive stormwater management program designed to prevent or reduce the discharge of sediment and other pollutants into the installation's stormwater conveyance system.

In addition to the (MS4) Permit number VAR040035, the facility also holds a Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater Permit, number VA0025216, issued September 2022, and expires in 2027. Activities conducted at JBLE–Eustis can be categorized as either Industrial or Non- Industrial. Industrial activities include those activities that are conducted in support of water, land, and air transportation operations, or those activities that are designated by industrial SIC codes (e.g., recycling, hazardous waste storage). Non-industrial activities are regulated by the MS4 permit, and include those activities that support base operations but are not associated with industrial operations (e.g., the Auto Hobby Shop, golf course maintenance, construction activities, etc.)

These procedures have been prepared to support compliance with Section II.B.3.c of the MS4 permit, which requires JBLE–Eustis to "develop, implement, and update, when appropriate, written procedures to detect, identify and address unauthorized non-stormwater discharges, including illegal dumping, to the small MS4". To ensure compliance with the Illicit Discharge Detection and Elimination (IDDE) requirements of the MS4 Permit, JBLE–Eustis follows the procedures outlined in this document.

The JBLE–Eustis MS4 program is managed by the 733d Civil Engineer Squadron/Environmental Element (733d CES/CEIE). For any questions regarding the MS4 program or illicit discharges please contact:

Stormwater Program Manager
733d Civil Engineer Squadron
1407 Washington Blvd.
Fort Eustis, VA 23604
Telephone: (757) 878-5213

Site Description

JBLE–Eustis is located adjacent to the City of Newport News, Virginia which is part of the Norfolk, Hampton, and Newport News metropolitan area. The installation is located on Mulberry Island, a small peninsula bordered by the James River to the west, Warwick River to the east, and Skiffes Creek toward the north. Smaller waterbodies on or bordering the installation include Jail Creek, Morrison's Creek, Island Creek, Bailey Creek, and Eustis Lake. The installation occupies approximately 8,000 acres and houses a variety of military organizations and support activities. Most of the development is located at the northern end of the installation, while the southern portion of the peninsula remains largely undeveloped and functions as training land. A golf course and an airfield are located near the center of the installation.

The installation is the home of the Headquarters United States Army Training and Doctrine Command (TRADOC), the Army Training Support Center (ATSC), and the 7th Transportation Brigade (Expeditionary). TRADOC is responsible for developing, educating, and training soldiers and civilians; supporting unit training; and designing, building, and integrating capabilities, formations, and equipment. The ATSC is responsible for managing the Army Training Support Enterprise (TSE), which provides oversight for programs that enable development, delivery, and sustainment of training and education support capabilities. The 7th Transportation Brigade (Expeditionary) provides logistics support around the world for port, terminal, and watercraft units conducting expeditionary operations in support of land operations.

Other units on the installation include the Army Aviation Logistics School, Non-commissioned Officer's (NCO) Academy, Aviation Applied Technology Directorate, and the James River Reserve Fleet (JRRF). The JRRF, a tenant managed by the Maritime Administration (MARAD), leases land on installation and maintains a number of vessels moored in the James River. The total population of the installation is approximately 12,900, comprised of approximately 6,200 military personnel and 2,800 dependents living on installation, as well as approximately 3,900 civilian non-residents who commute to the installation daily.

Stormwater Drainage System

A critical component of the JBLE–Eustis IDDE program is the stormwater drainage system map. Maintaining an accurate map of the stormwater system allows the base to trace and locate the source of suspected illicit discharges. The JBLE–Eustis storm sewer system maps are maintained by 733rd Civil Engineer Squadron/GeoBase (733d CES/GIO) in Geographical Information System (GIS) format. Updated stormwater drainage system data from contract projects on base are routed

to 733d CES/GIO for inclusion in the installation's geodatabase. Hardcopy maps are available upon request and electronic versions of the stormwater drainage system map can be viewed by authorized personnel on the JBLE–Eustis server. As of June 2022, JBLE–Eustis has identified 40 non-industrial (also known as MS4 stormwater outfalls or discharge locations), and 42 industrial outfalls.

All Ms4 outfalls on the installation drain to an impaired waterbody. Both Skiffes Creek and the Warwick River first appeared on the VDEQ *1998 303(d) Total Maximum Daily Load Priority List and Report*, for not supporting the Virginia Department of Health (VDH) fecal coliform standards for shellfish harvesting. These two waterbodies were combined in the *Fecal Bacteria Total Maximum Daily Load Development for Warwick River*, which was finalized by VDEQ December 13, 2007. These two tributaries drain to the James River, which is also a part of the larger Chesapeake Bay watershed. The James River has been provided pollutant reduction goals in the *Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment*, finalized by the EPA on 29 December 2010.

Illicit Discharge Definition

JBLE–Eustis is dedicated to detecting and eliminating illicit discharges to the stormwater drainage system and maintains a policy which prohibits illicit discharges. Title 9 of the Virginia Administrative Code (VAC) defines an illicit discharge as, "…any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a separate VPDES or state permit (other than the state permit for discharges from the municipal separate storm sewer), discharges resulting from firefighting activities, and discharges identified by and in compliance with 9VAC25-870-400 D 2 c (3)". Essentially, an illicit discharge is any non-stormwater discharge to the storm sewer that is not specifically authorized under a separate permit or the VAC.

Illicit discharges to the JBLE–Eustis MS4 are typically the result of aging infrastructure; industrial, commercial and/or residential practices; or a specific spill event. Examples of illicit discharges include (but are not limited to) the following:

- Runoff from improperly stored materials
- Improper disposal of vehicle maintenance fluids or household chemicals into a storm drain inlet
- Leaking dumpsters flowing into a storm drain inlet
- Old or damaged sanitary sewer line leaking fluids into a damaged storm sewer line
- Allowing wash water with soaps or detergents to discharge to a storm drain inlet
- Washing silt, sediment, concrete, cement or gravel into a storm drain inlet
- Spills resulting from vehicle accidents
- Foam solutions from firefighting testing and training exercises

Examples of authorized non-stormwater discharges that are not significant contributors of pollutants and are not considered illicit discharges at JBLE–Eustis include the following:

- Water line flushing
- Uncontaminated groundwater infiltration
- Landscape and lawn irrigation
- Air conditioning condensate
- Street wash water
- Groundwater from footing drains and crawl spaces
- Flows from firefighting activities
- Discharges from potable sources
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges

Figure 1. Examples of Illicit Discharges

Source: Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments (CWP, 2004)

Illicit connections to the stormwater drainage system can also generate illicit discharges. Illicit connections are any manmade conveyance that are connected to the MS4 without a permit, excluding roof drains and other similar connections. Examples of illicit connections include, but are not limited to, the following:

- Sanitary sewer piping that is connected directly from a building to the stormwater drainage system
- A cross connection between the sanitary sewer and the stormwater drainage system
- A shop floor drain that is connected to the stormwater drainage system

The frequency of illicit discharges typically occurs within the following three classifications as defined by the EPA (CWP, 2004):

- *Continuous discharges* occur most or all of the time, are usually easier to detect, and typically produce the greatest pollutant load.
- *Intermittent discharges* occur over a shorter period of time (e.g., a few hours per day or a few days per year). Because they are infrequent, intermittent discharges are hard to detect, but can still represent a serious water quality problem, depending on their flow type.
- *Transitory discharges* occur rarely, usually in response to a singular event such as an industrial spill, ruptured tank, sewer break, transport accident or illegal dumping episode.

These discharges are extremely hard to detect with routine monitoring, but under the right conditions, can exert severe water quality problems on downstream receiving waters.

Understanding the frequency classifications can help in detecting and eliminating illicit discharges by allowing inspectors to determine if dry weather flows may need additional examination to determine if they should be classified as illicit discharges.

JBLE–Eustis Illicit Discharge Prohibition Policy

JBLE–Eustis Environmental Management Procedures

The consolidated JBLE-Eustis Environmental Management Procedures (EMPs) serve as the local environmental policies for JBLE-Eustis. These EMPs apply to all JBLE-Eustis activities (including tenants, associated units, and contractors) that impact any environmental resource area on the installation, to include but not limited to Recycling, Air Quality, Water Quality, Hazardous Waste, Hazardous Materials, Natural Resources. The Office of Primary Responsibility for this document is 733d Civil Engineer Squadron Environmental Element (733 CES/CEIE), and will review all EMPs annually, and updated as appropriate. Major revisions may require concurrence from the JBLE-Eustis Environmental Management System (EMS) Cross-Functional Team (CFT) and approval by the Environmental Safety and Occupational Health Council (ESOHC).

The EMPs enforce compliance with Federal, State, Department of Defense, and Air Force regulations, directives, instructions, and manuals, and are specific to JBLE-Eustis. They assign

responsibility and provide instruction for appropriate management of environmental programs to ensure our regulatory compliance.

Environmental Management Procedure (EMP) 4.4.6.2: Wastewater/Stormwater Management

This EMP establishes the procedures to implement policy for the control and abatement of wastewater and stormwater pollution, and presents the scope, base personnel roles and responsibilities, and procedures, and references the IDDE Procedures. EMP 4.4.6.2 requires the installation to comply with applicable federal, state and local stormwater regulations through execution of required stormwater permits, and requires all operations and actions be planned and executed in a manner to protect surface water, which would include prohibiting illicit discharges to the stormwater system. The EMP acts as an enforcement tool for the Illicit Discharge Prohibition Policy Statement and these IDDE Procedures. A copy of the Memorandum from the Office of the Commander is provided in Appendix A.

JBLE–Eustis MS4 Program Plan:

JBLE–Eustis maintains an MS4 Program Plan per the requirements of Permit No. VAR040035. The Program Plan outlines the requirements of the permit, including the six Minimum Control Measures (MCMs) and two special conditions. The subsection on MCM 3 presents the base's IDDE program, including reference to these IDDE procedures for details of the program, as well as plans to remain in compliance with the permit.

IDDE Reporting Procedures

Community Reporting

All JBLE–Eustis personnel and residents are required to report illicit discharge and/or illegal dumping activities. Information on reporting can be found via the JBLE–Eustis Environmental public website: *https://www.jble.af.mil/About-Us/JBLE-Enviromental-Information*

The JBLE–Eustis Fire and Emergency Services personnel are the installation's First Responders and their telephone number (757-878-1008 or 4281 or 911) is used as the primary hotline for reporting illicit discharges. The hotline is manned 24 hours per day, 7 days per week. JBLE–Eustis personnel can also call Environmental staff (757-878-4123) or Housing Management staff (757-369-8344) with concerns regarding potential illicit discharges. When a potential illicit discharge incident is reported, the incident information will be referred to 733d CES/CEIE, staff for documentation using the Illicit Discharge Tracking Record (see Appendix B) and follow-up. The responding staff will either follow the investigation procedures in this document to identify the source of the problem or, if the source is known, or apply the discharge elimination procedures.

Community Outreach

Effective promotion and publication of the base IDDE prohibition policy and methods for illicit discharge detection are an integral part of the IDDE Program for JBLE–Eustis. Outreach initiatives that JBLE–Eustis conducts include:

- Operation and publication of an illicit discharge hotline.
- Storm drain marking activities which include volunteers from the base residents and personnel.
- Educational signs are posted at various facilities (e.g., industrial facilities) regarding illegal dumping.
- Facebook posts related to educating the general public regarding illicit discharges and how to report them.

Dry-Weather Field Screening

Dry-weather field screening of stormwater outfalls is an effective method of detecting illicit discharges to the stormwater system. JBLE–Eustis has 40 MS4 outfalls that discharge to various receiving water bodies including Bailey Creek, Eustis Lake, Milstead Island Creek, Warwick River, Morrison's Creek, James River and Skiffes Creek. The MS4 Permit requires a minimum of 50 outfalls to be screened each year during dry weather to detect potential illicit discharges to the stormwater system. Outfall screenings are the responsibility of 733d CES/CEIE staff. Inspections may be performed by other base personnel or by outside consultants hired by the base; however, all field reports will be reviewed and maintained by 733d CES/CEIE staff.

Outfall Prioritization and Schedule

As required by Section II.B.3c (1) (a) of the MS4 Permit, the stormwater outfalls have been prioritized for screening. Each of the 40 MS4 outfalls will be screened at least once per year. Table 1 presents a list of each known MS4 outfall, its receiving water body, and the year scheduled for screening. The inspection schedule will be updated as necessary to accommodate additional outfalls that may be created as part of future development or identified as part of system mapping updates.

Timing is important when conducting dry-weather outfall screenings to detect dry-weather flows during time periods when potential pollutants are not diluted by stormwater. The following guidelines should be considered when scheduling screenings:

- Conduct screenings at least 48 hours after a runoff producing rain event
- Tidally influenced outfalls should be screened during low tide
- Remote outfalls may be more accessible during times of low vegetation (late fall to early spring)
- Conduct screening during times of low groundwater levels (e.g., avoid time periods when the ground is saturated by extended rainfall or snowmelt)

Table 1. MS4 Outfall Information Table, JBLE–Eustis

Outfall Identifier	Latitude	Longitude	Acres Drained	Receiving Water	Watershed	VAHU6	HUC12
018	37.16614	-76.5918	22.336278	Bailey Creek	Skiffes Creek	JL35	20802060802
023	37.16664	-76.6011	22.336278	Eustis Lake	Skiffes Creek	JL35	20802060802
029	37.16259	-76.5895	37.752614	Eustis Lake	Skiffes Creek	JL35	20802060802
030	37.16198	-76.5893	5.437812	Eustis Lake	Skiffes Creek	JL35	20802060802
031	37.15746	-76.589	67.747098	Eustis Lake	Skiffes Creek	JL35	20802060802
032	37.16664	-76.591	2.533053	Eustis Lake	Skiffes Creek	JL35	20802060802
038	37.15279	-76.5946	5.627172	Milstead Island Creek	Warwick River	JL38	20802060901
039	37.15376	-76.596	3.718666	Milstead Island Creek	Warwick River	JL38	20802060901
041	37.15551	-76.5976	4.760926	Milstead Island Creek	Warwick River	JL38	20802060901
043	37.14499	-76.5779	11.272308	Warwick River	Warwick River	JL38	20802060901
044	37.14504	-76.5767	3.1141	Warwick River	Warwick River	JL38	20802060901
045	37.14289	-76.578	4.657032	Warwick River	Warwick River	JL38	20802060901
048	37.14695	-76.5908	5.380924	Milstead Island Creek	Warwick River	JL38	20802060901
050	37.14475	-76.5898	5.608151	Milstead Island Creek	Warwick River	JL38	20802060901
052	37.14501	-76.5746	6.981281	Warwick River	Warwick River	JL38	20802060901
053	37.14465	-76.5728	0.981515	Warwick River	Warwick River	JL38	20802060901
054	37.14359	-76.5717	1.635647	Warwick River	Warwick River	JL38	20802060901
055	37.14339	-76.5711	13.081789	Warwick River	Warwick River	JL38	20802060901
056	37.14305	-76.5691	1.761083	Warwick River	Warwick River	JL38	20802060901
057	37.14579	-76.5698	3.157889	Warwick River	Warwick River	JL38	20802060901
058	37.14637	-76.5692	12.050244	Warwick River	Warwick River	JL38	20802060901
060	37.14975	-76.5693	2.146714	Warwick River	Warwick River	JL38	20802060901
062	37.15444	-76.5706	16.497644	Warwick River	Warwick River	JL38	20802060901
063	37.15597	-76.5708	40.100733	Warwick River	Warwick River	JL38	20802060901
068	37.16006	-76.5685	71.028336	Warwick River	Warwick River	JL38	20802060901
077	37.16069	-76.5881	54.764851	Eustis Lake	Skiffes Creek	JL35	20802060802
078	37.17109	-76.5719	6.330382	Warwick River	Warwick River	JL38	20802060901
084	37.16375	-76.5816	57.42365	Bailey Creek	Skiffes Creek	JL35	20802060802
085	37.16594	-76.5775	34.476213	Bailey Creek	Skiffes Creek	JL35	20802060802
087	37.16492	-76.5863	7.971585	Bailey Creek	Skiffes Creek	JL35	20802060802
091	37.16099	-76.5687	6.94044	Warwick River	Warwick River	JL38	20802060901
094	37.16878	-76.6008	1.062687	Bailey Creek	Skiffes Creek	JL35	20802060802
095	37.16866	-76.6007	0.462632	Bailey Creek	Skiffes Creek	JL35	20802060802
097	37.16625	-76.5916	0.183567	Bailey Creek	Skiffes Creek	JL35	20802060802
120	37.15125	-76.5705	9.649284	Warwick River	Warwick River	JL38	20802060901
121	37.15068	-76.5705	0.600622	Warwick River	Warwick River	JL38	20802060901
124	37.15834	-76.57	2.276762	Warwick River	Warwick River	JL38	20802060901
127	37.15939	-76.5687	0.209869	Warwick River	Warwick River	JL38	20802060901
128	37.15927	-76.5684	0.540243	Warwick River	Warwick River	JL38	20802060901
145	37.14579	-76.5698	3.15	Warwick River	Warwick River	JL38	20802060901

During outfall screening, field crews will visually inspect each outfall and the immediate surrounding area, photograph the current conditions, and complete a Dry-Weather Outfall Screening Form provided in Appendix C. Special attention will be paid to outfalls that are flowing when no rain has occurred within the last 48 hours and/or outfalls where foul odors or discolored water is noted. When the screening of an outfall indicates a potential illicit discharge, the JBLE–Eustis Stormwater Program Manager will be notified within one business day so an investigation, can be performed. Any identified spills or conditions that represent a serious threat to personnel safety or equipment damage will be immediately reported to JBLE–Eustis Fire and Emergency Services.

The Dry-Weather Outfall Screening Form includes the following seven sections to be completed with each outfall screening:

Section 1: Background Data – This section requires general information regarding when and where the screening was performed, historical rainfall data, reference to photographs taken, and a description of drainage basin land uses. Tips for completing Section 1 include:

- The Outfall ID can be found in Table 4-1 and the stormwater drainage system maps in Appendix D of these procedures.
- Historical daily rainfall totals can be found online
- Take at least one photograph of the outfall for documentation purposes.
- Drainage basin categorization (i.e., industrial/non-industrial) can be identified via the outfall information table maintained by 733d CES/CEIE.

Section 2: Outfall Description – This section provides a description and dimensions of the outfall and a determination if flow is present during the inspection. Tips for completing Section 2 include:

- The cross-sectional shape of the outfall structure will determine the dimensions required. If the shape is abnormal, provide a sketch in the available area of the dimension column and label the measured dimensions.
- If the outfall is submerged with sediment, photograph the submergence and attempt to measure the depth of sediment.
- The identification of flow is important as flow during dry weather would indicate a nonstormwater discharge. If a pipe is partially submerged in water, and it is difficult to identify dry-weather flow, a nearby leaf or blade of grass can be dropped onto the water surface near the outfall. Travel of the object on the surface can help indicate if flow is discharging from the outfall.
- Dimensions that cannot be safely measured should be estimated.
- Upon completion of this section, if flow is present, continue to Section 3 of the form. However, if no flow is present, skip to Section 5 of the form.

Section 3: Estimated Discharge Rate – This section requires the inspector to estimate the quantity of discharge from the outfall at the time of inspection using one of two techniques. The first technique simply records the time it takes to fill a container of a known volume. In the second technique, the inspector measures the velocity of flow, and multiplies it by the estimated cross-sectional area of the flow. Tips for completing Section 3 include:

Flow Method #1: This technique is preferred for relatively low flows that can effectively be captured in a container. It may be helpful to use a "homemade" container, such as a cut out plastic milk container that is marked to show a one quart volume. The shape and flexibility of plastic containers allows the capture of relatively flat and shallow flow. The discharge rate in gallons per minute (gpm) is then estimated using the following equation with measured data from the form shown in bold.

$$\text{Discharge Rate (gpm)} = \frac{\boldsymbol{\#\ quarts}}{\boldsymbol{\#\ seconds}} \times \frac{1 \text{ gallon}}{4 \text{ quarts}} \times \frac{60 \text{ seconds}}{1 \text{ minute}}$$

Flow Method #2: The second technique is preferred for open channels and larger discharges where containers are too small to effectively capture the flow. The inspector measures and marks off a fixed flow length (usually about five feet); crumbles leaves or other light material; drops them into the discharge; and measures the time it takes the material to travel across the pre-measured length. The velocity of flow in feet per second (fps) is estimated using the following equation with measured data from the form shown in bold.

$$\text{Velocity (fps)} = \frac{\boldsymbol{measured\ length\ (ft)}}{\boldsymbol{time\ of\ travel\ (sec)}}$$

Next, the cross-sectional flow area is estimated by measuring the water depth and the width of the water surface and bottom of the channel. The cross-sectional flow area in cubic feet (ft3) and discharge rate in gpm are then estimated using the following equations with measured data from the form shown in bold.

$$\text{Area (ft}^2\text{)} = \left[\left(\frac{\boldsymbol{surface\ width\ (in) + bottom\ width\ (in)}}{2}\right) \times \boldsymbol{depth\ (in)}\right] \times \frac{1 \text{ ft}^2}{144 \text{ in}^2}$$

$$\text{Discharge Rate (gpm)} = \text{Area (ft}^2\text{)} \times \text{Velocity (fps)} \times \frac{7.48 \text{ gallons}}{1 \text{ ft}^3} \times \frac{60 \text{ seconds}}{1 \text{ minute}}$$

Section 4: Physical Indicators for Flowing Outfalls – This section provides documentation of four indicators for flowing outfalls – odor, color, clarity, and floatables. These indicators are important

in detecting the most severe or obvious discharges. The severity of each indicator is rated on a scale from zero to three. Tips for completing Section 4 include:

Odor: A severity score of 0 means that no odor is present; a score of 1 means the odor is faint or it is unclear if the odor is coming from the stream or other object in the area; a score of 2 indicates a moderate odor within the pipe; and a score of 3 is assigned if the odor is so strong that it is detected at a considerable distance from the outfall.

Color and Clarity: Color and clarity are best evaluated by collecting the discharge in a clear bottle and holding it up to the light. Color is rated by the tint or intensity of the color observed and clarity is rated based on how easily light can penetrate through the collected sample. The severity scale is further defined on the inspection form.

Figure 2. Examples of Levels of Clarity at Outfalls

Floatables: Sewage, oil sheens, and suds are all examples of floatable indicators. Floatables that appear to be ***sewage*** are assigned a severity score of 3. Surface ***oil sheens*** are ranked based on their thickness and coverage. Note that natural sheens created by in-stream biological processes often form a sheet-like film that cracks if disturbed and are not indicators of illicit discharges. ***Suds*** are rated based on their foaminess and staying power. A severity score of 3 is designated for thick foam that travels many feet before breaking up. Suds that break up quickly may simply reflect water turbulence, and do not necessarily have an illicit origin. Suds that are accompanied by a strong organic or sewage-like odor may indicate a sanitary sewer leak or connection, whereas suds with a fragrant odor may indicate the presence of wash waters. Note that trash and debris are generally not considered illicit discharge concerns and should not be documented as floatables. Trash should be noted on the form.

Figure 3. Floating Solids

**Photographs should be taken of all visible indicators.

Section 5: Observations for Flowing and Non-Flowing Outfalls – This section requires documentation of five indicators that may reveal past intermittent or transitory discharges. Indicators documented in this section include outfall damage, outfall deposits or stains, abnormal vegetation growth, poor pool quality, and benthic growth on pipe surfaces. Indicator descriptions are provided on the inspection form. Tips for completing Section 5 include:

- Surface damage at the outfall may be an indicator of high strength / corrosive discharges or associated gases
- Inhibited vegetation growth immediately downstream of the outfall may be an indicator of industrial discharges, whereas excessive vegetation may be an indicator of a nutrient rich discharge (e.g., sewage, fertilizers, etc.).
- Benthic growth on the pipe includes algae, bacteria, and slime on outfall surfaces may be an indicator of a nutrient rich discharge (e.g., sewage, fertilizers, etc.).

**Photographs should be taken of all visible indicators.

Section 6: Overall Preliminary Illicit Discharge Rating – This section requires an overall illicit discharge rating of unlikely, potential, suspect, or obvious for the outfall based on the discharge indicators identified in the preceding sections. This is only an initial assessment of the *likelihood* of an illicit discharge and will be used to determine if additional investigation is warranted. The outfall characterization rating is best judged by the inspector. Rating guidance is provided on the form to provide consistency; however, the intuition of the inspector should take precedence. Tips for completing Section 6 include:

- **Unlikely**: A rating of *Unlikely* is generally assigned to non-flowing outfalls with no physical indicators of an illicit discharge in Section 5.
- **Potential**: A rating of *Potential* is generally assigned to flowing or non-flowing outfalls with presence of one or more physical indicators in Sections 4 or 5.

- **Suspect**: A rating of *Suspect* is generally assigned to flowing outfalls with high severity, typically a 3 on the 0 to 3 scale, on one or more physical indicators in Section 4.
- **Obvious**: A rating of *Obvious* is generally assigned where there is an illicit discharge that can be confirmed without sampling or upstream investigation.

Section 7: Other Non-Illicit Discharge Concerns – This section is used to document other concerns observed at the outfall that are not associated with illicit discharges and may include: accumulated trash, erosion, sink holes, pipe failure, overgrowing vegetation, and required infrastructure repairs.

Documentation

Outfall screenings can generate a significant amount of data which requires proper management and record keeping. 733d CES/CEIE staff will complete the following tasks within five working days of completing a dry-weather outfall screening:

- Download digital inspection photographs to an appropriately titled folder on the JBLE–Eustis SharePoint site as necessary. The photographs will be grouped by inspection year and renamed based on the Outfall ID. If multiple photographs are taken at the same outfall, "-#" will be appended to the end of the Outfall ID (e.g., 001-1, 001-2, 001-3)
- Enter inspection data into the Dry-Weather Outfall Screening Record spreadsheet. The spreadsheet should be tabbed by inspection year with outfalls listed by Outfall ID from lowest to highest and saved to the JBLE–Eustis shared server. The Dry Weather Outfall Screening Form is provided in Appendix C.
- Complete Section 1 of the Illicit Discharge Tracking Record for each discharge identified as Potential, Suspected, or Obvious. Completion of the tracking sheet will document the discharge for future investigation and annual reporting as required by the MS4 permit. An Illicit Discharge Tracking Record is provided in Appendix B.
- A service order request will be submitted via email to the 733d Civil Engineer Squadron / Operations (CES/CEO) Service Order Desk to address any maintenance issues identified during the outfall screenings. 733d CES/CEO will determine whether the issue can be addressed with a service order or whether an AF Form 332, *Base Civil Engineer Work Request*, will be required. A blank AF Form 332 is provided in Appendix E.

Note that any identified spills or conditions that represent a serious threat to personnel or equipment safety should be immediately reported to JBLE–Eustis Fire and Emergency Services. Additional reporting to DEQ will be completed as necessary per Section III.G-I of the MS4 permit.

Illicit Discharge Investigation

Potential illicit discharges can be detected through community reporting or outfall inspections. Once a potential illicit discharge has been detected, it becomes necessary to conduct an

investigation to identify and eliminate the source of the discharge. The investigation may result in the source being easily identified or it may require a more in-depth inspection. Illicit discharge investigations are the responsibility of 733d CES/CEIE staff. Investigations may be performed by other base personnel staff or by outside consultants hired by the base; however, all investigation results will be reviewed and maintained by 733d CES/CEIE staff.

Time Frame for Investigation

After a potential, suspected, or obvious illicit discharge has been detected, follow-up investigations should be prioritized and initiated according to the following guidance:

- Priority Level 1 – Initiate investigations within three working days for discharges suspected of being sanitary sewage, significantly contaminated (e.g., degreasers, solvents, pesticides, petroleum), or unknown based on the initial observation

- Priority Level 2 – Initiate investigations within seven working days for discharges suspected of being less hazardous to human health and safety (e.g., non-contact cooling water, wash water, yard waste) Note that any discharges that represent a serious threat to human health or the environment should immediately be reported to JBLE–Eustis Fire and Emergency Services.

Investigation Methodology

When the source of a suspected illicit discharge cannot be readily identified, additional action is required. The source of some illicit connections or discharges can be located by systematically isolating the area from which the polluted discharge originates. This process involves progressive investigation at manholes and catch basins in the storm drain network to narrow down the location where the illegal discharge is entering the drainage system. This method is best used to identify constant or frequent discharge sources such as an illicit connection with the sanitary sewer system. Field crews should work progressively upstream from the outfall and inspect stormwater structures (e.g., manholes, catch basins, junctions) looking for the presence of flow during dry weather, foul odors, colors or stained deposits, oily sheen, floatable materials, and/or other indicators of an illicit discharge. The observations are continued at each upstream structure until a structure is found with no evidence of discharge. This indicates the discharge source is likely located between the structure with no evidence of discharge and the next downstream structure.

Once the discharge source has been isolated to a specific segment of stormwater drainage system, the field crew should inspect the drainage area near the point of entry to identify the source. The drainage area inspection should include interviewing personnel at nearby facilities or residents within the vicinity of the drainage area to understand activities and materials used that may be generating discharges. Special attention should be paid to facilities that use materials similar to those noted in the discharge or residential locations that show evidence of illegal dumping (e.g.,

residences with moves scheduled or a history of MFH policy violations). For example, if a discharge is detected with an oil sheen and a gasoline odor, vehicle maintenance facilities would be of more interest than a food service facility. The stormwater drainage system map should also be cross referenced against the sanitary sewer map and/or historical as-built drawings of nearby facilities to identify illicit connections with the sanitary sewer, discharges from industrial processes, or drain inlets located within wash areas.

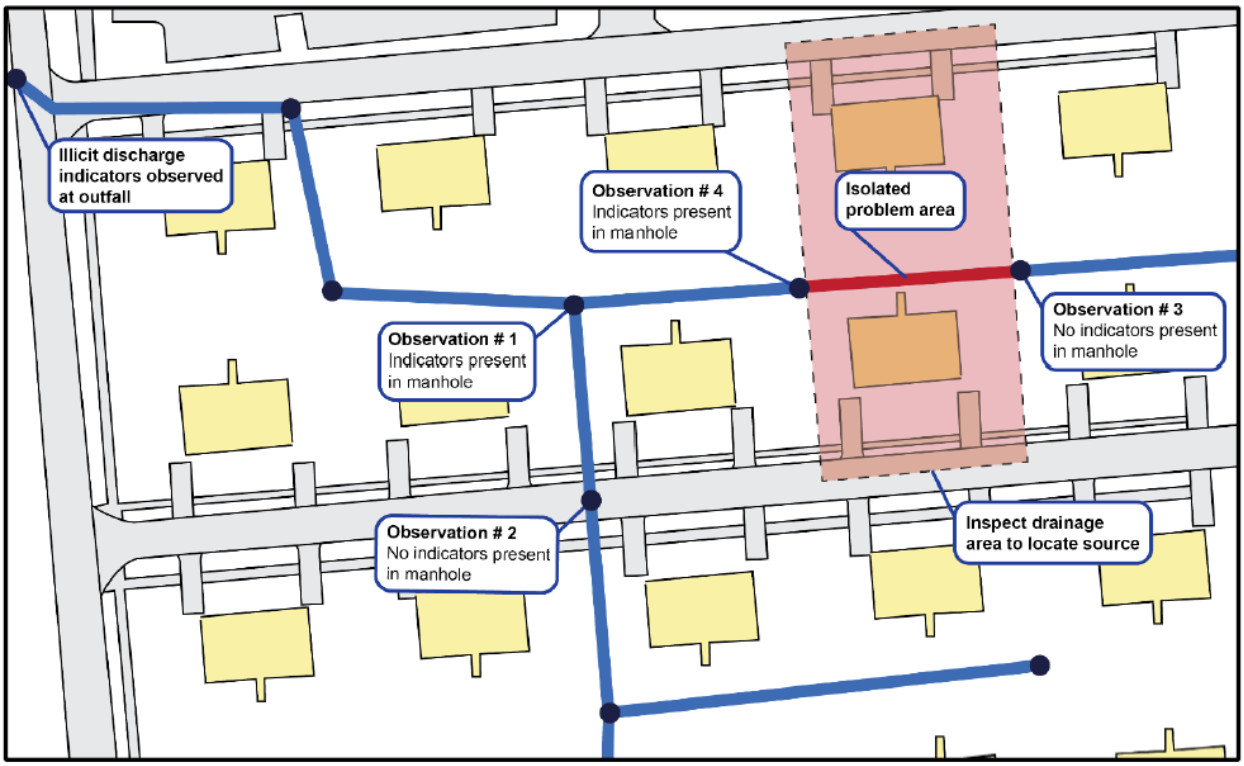


Figure 4. Illicit Discharge Isolation Observation Steps, JBLE–Eustis

Physical indicators, facility personnel interviews, and historical records can identify the source of potential illicit discharges; however, there are several additional field tests that can be performed as necessary. Additional field tests include:

- Dye testing
- Smoke testing
- Video inspection
- Discharge sample and analysis

Use of the additional field tests will likely require contract of an outside party to complete the investigation. Permitting needs (i.e., dye testing) and sample methods to be used (i.e., 40 CFR 136 compliant methods) must be verified prior to conducting field tests. The Center for Watershed Protection's *Illicit Discharge Detection and Elimination: A Guidance Manual* (CWP 2004)

provides instructions for employing these techniques and can be downloaded from the EPA website.

Note that the MS4 permit requires at least three separate attempts be made to identify the source of an intermittent, non-stormwater discharge. If three attempts have been made and the non-stormwater discharge has not been detected again within six months of the first investigation, then the discharge should be documented as "Source not found – discharge has not reoccurred" in the Illicit Discharge Tracking Form and no further action is required. Non-stormwater flows that are found to be the result of discharges allowable under the VPDES or other state permits require no further action and should be documented as "Allowable discharge".

Documentation

Recording keeping is an important component of the illicit discharge investigation process. 733d CES/CEIE staff will complete the following tasks after initiating an investigation:

1. Enter investigation data into Section 2 of the Illicit Discharge Tracking Form for each investigative task completed. If multiple attempts and methods are conducted to investigate a discharge, ensure each attempt is documented with the date. Completion of the tracking form will document the discharge for elimination and annual reporting as required by the MS4 permit. An Illicit Discharge Tracking Form is provided in Appendix B. The tracking form will be maintained by 733d CES/CEIE staff and kept electronically on the JBLE–Eustis network drive.

2. Download digital investigation photographs to an appropriately titled folder on the JBLE–Eustis shared server. The photographs will be grouped by permit year and renamed based on the corresponding Discharge ID in the Illicit Discharge Tracking Form. If multiple photographs are taken as part of the investigation(s), "-#" will be appended to the end of the Discharge ID (e.g., 100-1, 100-2, 100-3).

Illicit Discharge Elimination

JBLE–Eustis is committed to eliminating illicit discharges to the stormwater drainage system, and has developed mechanisms for eliminating confirmed illicit discharges, procedures for conducting follow-up investigations to verify the discharges have been eliminated, and enforcement actions that may be enacted to achieve compliance.

Initiating and verifying the elimination of an illicit discharge is the responsibility of 733d CES/CEIE. 733d CES/CEIE staff will provide educational materials and advocate for funding when needed to eliminate illicit discharges. Depending on the location and type of discharges, specific elimination actions may be conducted by other organizations including Activity/Unit

Environmental Coordinators (AEC/UEC), Housing Management staff (Balfour Beatty), the Base Operations Services (BOS) contractor (Global Management Services [GMS]), the base wastewater privatization contractor (Old Dominion Utility Services [ODUS]), or other outside contractors hired by the base. Regardless of the entities involved in eliminating an illicit discharge, 733d CES/CEIE is responsible for following-up on the corrective actions to verify the illicit discharge has been resolved.

Illicit discharges are generally the result of either structural issues or operational deficiencies. The mechanism for eliminating a discharge will depend on the discharge type.

Structural Issues

Examples of structural issues that may result in illicit discharges include:

- Illicit connections with the sanitary sewer
- Oil/water separators (OWS) pretreating industrial wastewater discharging to the stormwater drainage system
- Leaking concrete containment berms and/or valves
- High level bypass pipes at sanitary sewer lift stations

Structural issues will generally require a construction action to eliminate the illicit discharge. Repair projects for structural issues should be initiated through completion of a service order request to the 733d CES/CEO Service Order Desk. 733d CES/CEO will determine whether the issue can be addressed with a service order or whether an AF Form 332, Base Civil Engineer Work Request, will be required. A blank AF Form 332 is provided in Appendix C. Funding for the repair will be determined once the work request has been submitted and reviewed by JBLE–Eustis 733d CED/CEO.

Operational Deficiencies

Examples of operational deficiencies that may result in illicit discharges include:

- Washing activities in areas that discharge to a storm drain inlet
- Runoff from improperly stored material
- Illegal dumping
- Dumpster leachate
- Improperly managed secondary containment valves

Operational deficiencies can typically be addressed through BMPs such as education, modification of processes, and/or relocation of the discharge generating activities. 733d CES/CEIE staff will work with facility occupants as needed to promote compliance.

Follow-up Investigations

After a confirmed illicit discharge has been eliminated, 733d CES/CEIE staff must conduct a follow-up investigation to verify that the discharge has been eliminated. If the discharge was due

to a structural issue, the field crew should inspect and photograph the location of the repair to confirm the source has been eliminated. If the discharge was due to an operational deficiency, the field crew should revisit the entry point of the previous illicit discharge and verify that there are no indicators of further discharges. JBLE–Eustis staff will also interview personnel at the facility associated with the previous discharges to ensure they have proper procedures in place to prevent future discharges.

Enforcement Actions

As discussed, illicit discharges to the stormwater system are prohibited by various JBLE–Eustis policies and instructions. Prohibition is also addressed through contract language with contractors performing work on base. Corrective actions focus first on education to promote voluntary compliance and escalate to increasingly severe enforcement actions if voluntary compliance is not obtained. The JBLE–Eustis community is comprised of military and civilian personnel and residents and enforcement actions associated with illicit discharges will depend on the organization of the responsible party or parties.

JBLE–Eustis will generally follow a three step enforcement action policy for confirmed illicit discharges; however, more serious violations or continued, egregious non-compliance may warrant a more aggressive approach. Actions conducted under each enforcement step include the following:

Step 1: Initial Actions – 733d CES/CEIE will provide a "summary letter" describing the location and nature of the illicit discharge, the date it was confirmed, the required elimination action, and a reasonable timeframe for compliance. If the source of the illicit discharge is due to a structural issue, the letter will also include a reference to the Service Order Number or a copy of the AF Form 332 initiated to correct the issue. For military organizations and tenants, the letter will be sent to the AEC or equivalent. For contractor organizations, the letter will be sent to the Contracting Officer's Representative (COR) overseeing the responsible party. Letters for illicit discharges occurring in housing areas will be sent to the Residential Community Initiatives (RCI). ***Step 1 is not meant to be punitive. It is an opportunity to inform and educate the responsible parties and to encourage voluntary compliance.***

Step 2: Intermediate Actions – If the confirmed illicit discharge has not been eliminated by the required compliance date or if the illicit discharge is detected a second time at the facility under the responsibility of the same organization at a later date, 733 CES/CEIE will send a "notice of violation" letter regarding the unresolved issues with a second compliance date. For military organizations and tenants, the letter will be sent to the AEC or equivalent. For contractor organizations, the letter will be sent to the COR overseeing the responsible party. Letters for illicit discharges occurring in housing areas will be sent to the RCI. ***To the extent possible, Step 2 is meant to bring about an immediate stop to activities generating the illicit discharge until such time that procedures are put in place to prevent future discharges. For contractor activities, Step 2 may result in a stop work order from the COR.***

Step 3: Final Actions – If the confirmed illicit discharge has not been eliminated by the second compliance date or if the illicit discharge reoccurs at the facility a third time under the responsibility of the same organization at a later date, 733 CES/CEIE will send a second "notice of violation" letter regarding the unresolved issues. For military organizations and tenants, the

letter will be sent to the Unit Commander or equivalent. For contractor organizations, the letter will be sent to the COR overseeing the responsible party. Letters for illicit discharges occurring in housing areas will be sent to the Army Support Activity (ASA). ***Step 3 may result in disciplinary action for military organizations and tenants; loss of contract and/or removal from base for contractors; and loss of housing lease for residents in base housing.***

Documentation

Record keeping is an important component of the illicit discharge elimination process. JBLE–Eustis 733d CES/CEIE will complete the following tasks as part of the elimination and verification process:

1. Enter information into Section 3 and 4 of the Illicit Discharge Tracking Record for each elimination and follow-up task completed. Completion of the tracking form will document the closure of the investigation for annual reporting as required by Section 2.B.3.f of the MS4 permit. An example Illicit Discharge Tracking Record is provided in Appendix C.

2. Download digital photographs of the follow-up investigation to an appropriately titled folder on the JBLE–Eustis shared server. The photographs will be grouped by permit year and renamed based on the corresponding Discharge ID in the Illicit Discharge Tracking Record. If multiple photographs are taken for the same record, "-#" will be appended to the end of the Discharge ID (e.g. 100-1, 100-2, 100-3).

3. Save digital copies of all enforcement letters provided on the JBLE–Eustis shared server. Document the submittal date of enforcement letters in the "Corrective Action to be Taken" field in Section 2 of the Illicit Discharge Tracking Record. Save correspondence between all parties regarding the resolution of the illicit discharge to the JBLE–Eustis shared server.

Procedural Review

Regular review of the MS4 IDDE Procedures is important in order JBLE–Eustis to have an up-to-date standard to use for assessing the overall effectiveness of the IDDE Program for compliance with General Permit No. VAR040035. The JBLE–Eustis MS4 Program Plan outlines the procedures for the IDDE program evaluation and assessment.

Appendix C

ESC Inspection Form

JBLE - Eustis
Erosion and Sediment Control (ESC)
Inspection Report

Project Name:_____ Project Manager: _____
RLD Name:_____ RLD No. _____
Project Location:_____ Project No: _____
Inspector Name:_____ Inspection Date:_____ Time: _____

Date of last measurable storm event _____ Amount (inches):_____

STAGE OF CONSTRUCTION

Pre-Construction Conference ☐	*Building Construction* ☐	*Construction of SWM Facilities* ☐
Clearing & Grubbing ☐	*Finish Grading* ☐	*Maintenance of SWM Facilities* ☐
Rough Grading ☐	*Final Stabilization* ☐	*Other*_____ ☐

Item#	State/Local Regulation(1)	Violation		Description and Location of Problem/Violation(2), Required or Recommended Corrective Actions, and Other Comments/Notes
		Initial	Repeat	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (9VAC25-840), *Virginia Stormwater Management Program Regulations* (9VAC25-870), or local ESC/SWM ordinance.

(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

REQUIRED CORRECTIVE ACTION DEADLINE DATE: _____ **Re-inspection Date:** _____
(MM/DD/YY) **(MM/DD/YY)** The required corrective action deadline date applies to all violations noted on this report. If listed violation(s) currently constitute non-compliance and/or required corrective actions are not completed by the deadline, a **NOTICE TO COMPLY** and/or other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector: _____ _____ _____
Signature Date Phone

Acknowledgement of Onsite report receipt (as necessary): _____ _____ _____
Signature Print Name Date

This report will be provided to the following parties via mail, fax, or e-mail (as necessary):

_____

Appendix D

JBLE – Eustis BMP Structural BMP Inspection and Management Plan

JBLE-Eustis Structural BMP Inspection and Management Plan

Purpose and Objective

Best Management Practices (BMPs) are implemented to manage the quantity and improve the quality of stormwater runoff. Nutrients (e.g., nitrogen and phosphorous) and sediment are the primary pollutants of concern (POC) for Joint Base Langley Eustis-Langley – Fort Eustis (JBLE–Eustis) and the James River watershed. BMPs are designed to mitigate POCs and flooding by detaining, retaining, or infiltrating stormwater runoff before it enters local waterways. BMPs are regulated under the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), General Permit Number VAR040035, held by JBLE–Eustis. A BMP inspection and maintenance program is required under Part I.E.5(a-b) of the MS4 permit to comply with post-construction stormwater runoff on developed lands. This program includes (1) inspection and maintenance procedures maintained in the MS4 Program Plan (per Part I.E.5(h)), (2) an annual inspection frequency of BMPs, and (3) maintenance of BMPs following inspection findings.

In addition to required inspections of post-construction BMPs, Part III of the MS4 permit requires proper operation and maintenance (O&M) of all systems necessary for compliance. Field inspections are conducted at JBLE–Eustis and the installation's Military Family Housing (MFH) area annually every winter to evaluate and assess the installation's structural stormwater BMPs and to identify any maintenance needs.

JBLE-Eustis complies with inspection and maintenance procedures outlined in the Virginia Stormwater BMP Clearinghouse and the Virginia Stormwater Management Handbook to ensure that the structural BMPs are functioning properly. All personnel implementing a stormwater program must obtain the appropriate certifications as required under the Virginia Stormwater Management Act and its attendant regulations. At JBLE-Eustis, the stormwater program manager holds a Virginia Department of Environmental Quality (VDEQ) Dual Combined Administrator Certification.

JBLE-Eustis BMP Inventory

The JBLE-Eustis BMP inventory includes the main base and MFH. There are 130 structural BMPs on the installation and more are added as new facilities are constructed. This Plan will be updated annually to reflect any new BMPs.

Table 1: BMPs at JBLE-Eustis

BMP	Quantity
Infiltration	9
Bioretention	33
Retention	9
Grass Swale	17
Permeable Pavers	7
Detention	27
1/2K BaySeparator	1
Stormceptor	6
Filterra	16
Stormfilter	4
Contech Vortechs	1

Of these facilities, only 23 have outlet structures. When these facilities are inspected, the outlet structure is also inspected as a component of the BMP. The remainder of the BMPs which discharge through a principal spillway are connected to a piped stormwater network beneath the ground and discharge to either an industrial or MS4 outfall.

All outfalls are inspected annually via separate inspection programs within the two different permitted stormwater programs at JBLE-Eustis. More information about the MS4 outfall inspection program is located in the JBLE-Eustis Municipal Separate Storm Sewer System (MS4) Program Plan Appendix B: JBLE – Eustis IDDE Procedures.

Inspection Processes

All BMPs on the installation are inspected at least annually. Bioretention, extended detention, and wetland facilities are also inspected throughout the growing season to ensure that these BMPs maintain an appropriate planting of healthy and robust native species

After reviewing the inspection notes and photos, BMPs are prioritized for maintenance based on three criteria determined in the field, Performance Rating (graded from A to F), Consequence of Failure (graded from Low to Severe), and Probability of Failure (graded from Low to High). Table 2 defines the Performance Ratings (based on the North Carolina Department of Transportation [NCDOT] BMP Rating System) and the Consequence of Failure (adapted from Johnson and Niezgoda, 2004). The highest priority BMPs are assigned a 1 while the lowest priority BMPs are assigned a 6. Table 3 shows the Prioritization Matrix for BMPs with Performance Ratings of A, B, C, D, or F.

Table 2. BMP Performance Criteria and Consequence of Failure Definitions

Performance Rating		Consequence of Failure	
A	The BMP requires no maintenance at this time. It is functioning properly and the inspectors found no structural deterioration.	**Low**	No or minor impacts to public or private property.
B	Minor maintenance would improve BMP performance, but it is functioning properly.	**Medium**	Slight to moderate impact to public or private property.
C	Moderate maintenance would improve BMP performance, but it is functioning properly.	**Severe**	Failure of hydraulic or engineered infrastructure; loss of service provided by infrastructure and/or public utilities; high public or private property damage.
D	The BMP requires major maintenance and the BMP is not performing adequately.		
F	The BMP is not functioning as intended.		

Note:
[1] Performance Rating intentionally uses D and F but skips E.

Table 3. BMP Prioritization Matrix

C, D or F Performance Rating[1]	Low Consequence of Failure	Moderate Consequence of Failure	Severe Consequence of Failure
High Probability of Failure	2	1	1
Medium Probability of Failure	3	2	1
Low Probability of Failure	3	3	2
A or B Performance Rating	**Low Consequence of Failure**	**Moderate Consequence of Failure**	**Severe Consequence of Failure**
High Probability of Failure	5	4	4
Medium Probability of Failure	5	4	4
Low Probability of Failure	6	5	5

Note:
[1] Performance Rating intentionally uses D and F but skips E.

The performance ratings of inspected BMPs are summarized in a table with easy-to-see clarity for briefing the Stormwater Cross-Functional Team (CFT), and the Environmental Safety and Occupational Health Council (ESHOC). This methodology allows commanders to see exactly how the installation's stormwater facilities are functioning at a glance.

When the BMPs are inspected, most of the BMPs are in need of routine maintenance; however, there are some that will require more attention – non-routine maintenance and sometimes repair. Commonly noted BMP defects with higher priority, based on the inspections, include:

- Propagation of undesirable vegetation decreasing basin storage volume
- Sediment and debris blocking inlets and outlets preventing proper drainage
- Persistent standing water in BMPs indicating poor BMP performance
- Erosion and bare areas in basins, on banks, and in surrounding areas contributing to sedimentation

BMP performance during inspections can provide some indications of how they will function during storm events. For example:

- Issues such as clogging of inlets and outlets with sediment diminish the ability of BMPs to accept or discharge stormwater.
- Obstruction of pipe and curb inlets of BMPs cause flooding of adjacent pavements during wet weather conditions.
- Filterra tree boxes with excess sediment buildup within structures reduce stormwater treatment capacity.
- Sediment and debris blocking outlets and clogging media is indicative of increased drawdown time during wet weather, which can lead to drowned grass, bare areas, and propagation of wetland vegetation.

Upon thorough review of the inspection materials, the report is passed on to 733d Civil Engineering Squadron/Civil Engineering Operations (CES/CEO), which is the team within the organization that manages the maintenance contract. This information can then be relayed to the maintenance crew who then assess their maintenance approach and can address any issues within their purview. Anything beyond the scope of their contract will be subcontracted to a specialized company (i.e. large tree removal).

BMP Maintenance

All BMP maintenance is contracted at JBLE-Eustis. The contract is on a 5-year cycle and is managed through the 733d CES/CEO office. Maintenance personnel provide documented assessments of overall BMP functionality that is regularly reviewed by the CEIE stormwater program manager, utilizing the same inspection forms that the official inspector also uses. These forms are included for each non-proprietary BMP type in Appendix A.

Maintenance procedures follow direction from the Virginia Stormwater BMP Clearinghouse and the Virginia Stormwater Program Management Handbook. So that all personnel involved with BMP

requirements and functioning can easily understand the expectations associated with maintenance, individual BMP factsheets for each BMP have been developed and provided to the maintenance personnel. These documents include maintenance items, schedule, arial overviews, and as-built and planting plans when available. A sample of the fact sheet is provided in Appendix B.

Appendix A:

JBLE-Eustis Best Management Practice (BMP) Inspection Form

Building Number:	JBLE - Eustis Stormwater Management Facility Permeable Pavers Assessment and Maintenance Checklist	BMP Grade:
BMP#:		
Date:	**Time:**	**Inspector:**

Item	Condition 1-4	Comments
PAVEMENT SYSTEM		
1. Spalling, cracking, displacement, differential settling		
2. Standing water		
3. Trash and debris		
4. Excessive sediment		
5. staining or other signs of spills		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

Building Number:	JBLE - Eustis Stormwater Management Facility Bioretention Assessment and Maintenance Checklist	BMP Grade:
BMP#:	Infiltration Type: □Basin □Trench □Other:	Soil pH:
Date:	Time:	Inspector:

Bioretention Facility Type: □Level 1 □Level 2
Type of Pre-Treatment Facility: □Sediment Forebay □Stone Diaphragm □Grass Filter Strip □Grass Channel
Filtration Media: □No filtration □Sand □Bioretention Soil □ Peat

Components	Condition 1-4	Comments
EMBANKMENT (Note some facilities may be excavated or contained without an earthen embankment)		
A. Crest		
1. Visual settlement		
2. Erosion		
B. Upstream slope		
1. Erosion		
2. Inadequategroundcover		
3. Trees or shrubs		
4. Cracks, settlements,or bulges		
5. Rodent holes		
C. Downstream slope		
1. Erosion		
2. Adequate groundcover		
3. Trees or shrubs		
4. Cracks, settlements, or bulges		
5. Rodent holes		
D. Headwalls		
1. Erosion		
2. Seepage		
3. Cracks		
PRINCIPAL SPILLWAY (Type □Box □Pipe □Overflow Weir □Other)		
A. Riser (Type □Concrete □Metal □HDPE □PVC □Other)		
1. Trash and debris		
2. Excessive Sediment		
3. Leaks		
B. Barrel (Type □Concrete □Metal □HDPE □PVC □Other)		
I. Seepage into conduit		
2. Trash and debris		
3. Sediment present		
4. Displaced joints		
OUTLET PROTECTION (Type □Rip-Rap Apron □Rip-Rap Stilling Basin □Storm Sewer □Other)		
1. Obstructed		
2. Adequate riprap		
3. Undercutting at outlet		
4. Channel scour		
5. Trash and debris		

Item	Priority 1-4	Comments
FACILITY		
A. Basin/Storage Media (Type □Basin □Aggregate □Engineered Media □Other)		
l. Erosion		
2. Excess Sediment		
3. Trash and debris		
4. Standing water		
5. Saturated media		
B. Observation well/Clean-outs (Type □Observation well □Clean-out □Other)		
1. Standing water		
2. Excess Sediment		
C. Basin side slopes		
1. Erosion		
2. Adequate stabilization		
3. Trash and debris		
4. High water marks		
5. Rodent holes		
D. Inflow channels/pipes/inlets		
1. Erosion/scour		
2. Excessive Sediment		
3. Trash and debris		
4. Needs stabilization		
5. Undercutting		
E. Landscaping		
1. Trees and shrubs		
2. Groundcover		
3. Mulch		
4. Trees within 10' of structures		
PRETREATMENT (Type □Sediment Forebay □Vegetated filter strip □Other)		
A. Sediment Forebay		
1. Excessive Sediment		
2. Trash and debris		
3. Stable overflow into basin		
B. Vegetated Filter Strip		
1. Erosion/scour		
2. Excessive Sediment		
3. Needs stabilization		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

JBLE – Eustis Stormwater Management Facility
Contech Stormceptor
Assessment and Maintenance

BMP Grade:
_____

Inspector/Maintenance Provider:	
BMP Number:	Bldg. Number:
Date:	Time:

Structure

Model Number:
Is there damage to the structure?
Is there trash or debris inside the structure?

The depth of oil in the unit can be determined by inserting a dipstick in the oil inspection/cleanout port.

Oil Depth: _____

The depth of sediment can be measured from the surface without entry into the Stormceptor via a dipstick tube equipped with a ball valve. This tube would be inserted through the riser pipe. Maintenance should be performed once the sediment depth exceeds the guideline values provided in the Table 4.

Sediment Depth:_____

Maintenance required?_____

Table 4. Sediment Depths Indicating Required Servicing*

Particle Size	Specific Gravity
Model	Sediment Depth inches (mm)
450i	8 (200)
900	8 (200)
1200	10 (250)
1800	15 (381)
2400	12 (300)
3600	17 (430)
4800	15 (380)
6000	18 (460)
7200	15 (381)
11000	17 (380)
13000	20 (500)
16000	17 (380)
* based on 15% of the Stormceptor unit's total storage	

Comments:_____
_____
_____

Building Number:		BMP Grade:
	JBLE - Eustis **Stormwater Management Facility** **Grassed Swale Assessment and Maintenance Checklist**	
BMP#:		
Date:	**Time:**	**Inspector:**

Item	Condition 1-4	Comments
FACILITY		
A. Swale bottom		
1. Erosion		
2. Excess Sediment		
3. Adequate groundcover		
4. Trash and debris		
5. Rodent holes		
6. Standing water		
B. Swale side slopes		
1. Erosion/scour		
2. Excessive Sediment		
3. Trash and debris		
4. Needs stabilization		
5. High water marks		
C. Check Dams (Type ☐Riprap/Aggregate ☐Timber ☐Concrete ☐Other)		
1. Damaged/displaced		
2. Trash and debris		
3. Erosion		
4. Excessive sediment		
5. High water marks		
6. Weep holes/orifices		
D. Underdrain/Cleanout (If present)		
1. Excessive Sediment		
2. Trash and debris		
3. Standing water		
E. Inflow channels/pipes/inlets		
1. Erosion/scour		
2. Excessive Sediment		
3. Needs stabilization		
4. Trash and debris		
F. Vegetation		
1. Trees within 10' of facility structures		
PRETREATMENT (Type ☐Sediment Forebay ☐Vegetated Filter Strip ☐Other)		

A. **Sediment forebay**		
1. Excessive sediment		
2. Trash and debris		
B. Vegetated filter strip		
1. Erosion/scour		
2. Excessive sediment		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

JBLE – Eustis Stormwater Management Facility
Contech Stormfilter
Assessment and Maintenance Checklist

BMP Grade: _____

Inspector/Maintenance Provider:	
BMP Number:	Bldg. Number:
Date:	Time:

System Size: _____ Months in Service: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other: ☐_____

Sediment Thickness in Forebay: _____

Sediment Depth on Vault Floor: _____

Sediment Depth on Cartridge Top(s) : _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available: _____

StormFilter Maintenance Activities (check off if done and give description)

☐ Trash and Debris Removal: _____
☐ Minor Structural Repairs: _____
☐ Drainage Area Report: _____

Excessive Oil Loading Yes ☐ No☐ Source: _____
Sediment Accumulation on Pavement: Yes ☐ No☐ Source: _____
Erosion of Landscaped Areas: Yes ☐ No☐ Source: _____

Comments:_____

_____

_____

_____

_____

_____

JBLE – Eustis Stormwater Management Facility
Contech Filterra
Assessment and Maintenance

BMP Grade: _____

Inspector/Maintenance Provider:	
BMP Number:	Bldg. Number:
Date:	Time:

Damage to box structure:	Yes	No
Damage to Grate:	Yes	No
Standing water:	Yes	No
Excess sediment in the surrounding area:	Yes	No
Excessive trash or debris in the surrounding area:	Yes	No
Erosion of Nearby Areas:	Yes	No
Leaves and/or sediment at inlet:	Yes	No
Evidence of ponding water:	Yes	No
Sufficient mulch cover (3 inches) within the box:	Yes	No
Does tree appear healthy:	Yes	No
Maintenance required:	Yes	No

Height from mulch to top of structure:_____ inches

Other Work Needed/Comments/Description of Maintenance Performed:

_____

_____

_____

Building Number:	JBLE - Eustis Stormwater Management Facility Dry Pond Assessment and Maintenance Checklist	BMP Grade:
BMP#:		
Date:	**Time:**	**Inspector:**

Item	Condition 1-4	Comments
EMBANKMENT		
A. Crest		
1. Visual settlement		
2, Misalignment		
3. Cracking		
B. Upstream slope		
1. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8”		
4. Woody vegetation present		
5. Cracks, settlement, bulges		
6. Rodent holes		
C. Downstream slope		
1. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8”		
4. Woody vegetation present		
5. Cracks, settlements, or bulges		
6. Rodent holes		
D. Abutments		
1. Erosion		
2. Seepage		
3. Cracks		
E. Drainage, seepage control		
1. Seepage at toe		
2. Seepage clear (describe)		
PRINCIPAL SPILLWAY (Type ☐Box ☐Pipe ☐Overflow Weir ☐Other)		
A. Riser (Type ☐Concrete ☐Metal ☐HDPE ☐PVC ☐Other)		
1. Trash and debris		
2. Sediment present		
3. Low-level drain functional		
B. Barrel (Type ☐Concrete ☐Metal ☐HDPE ☐PVC ☐Other)		
I. Seepage into conduit		
2. Trash and debris		
3. Sediment present		
4. Displaced or offset joints		
EMERGENCY SPILLWAY (Type □Vegetated □Rip Rap □Concrete □Other)		
1. Eroding or backcutting		
2. Woody vegetation growth		
3. Trash and debris		
4. Grass > 8”		

Item	Priority 1-4	Comments
OUTLET (Type ☐Riprap Apron ☐Riprap Stilling Basin ☐Storm Sewer ☐Other)		
1. Obstructed		
2. Adequate riprap		
3. Undercutting at outlet		
4. Channel scour		
5. Trash and debris		
BASIN		
A. Low flow channel (Type □Vegetated □Rip Rap □Concrete □Other)		
1. Erosion		
2. Adequate vegetation		
3. Obstruction		
B. Basin bottom and side slopes		
1. Erosion		
2. Excess Sediment		
3. Adequate groundcover		
4. Trash and debris		
5. Rodent holes		
6. Standing water		
C. Inflow channels/pipes		
1. Erosion/scour		
2. Excessive Sediment		
3. Trash and debris		
4. Needs stabilization		
5. Undercutting		
D. Vegetation		
1. Invasive weeds		
2. Trees present within 10' of structures		
PRETREATMENT (Type ☐Sediment Forebay ☐Vegetated filter strip ☐Other)		
A. Sediment Forebay		
1. Excessive Sediment		
2. Trash and debris		
3. Overflow eroded or damaged		
B. Vegetated Filter Strip		
1. Erosion/scour		
2. Excessive Sediment		
3. Inadequate vegetation		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

Building Number:	JBLE - Eustis Stormwater Management Facility Wet Pond Assessment and Maintenance Checklist	BMP Grade:
BMP#:		
Date:	**Time:**	**Inspector:**

Item	Condition 1-4	Comments
EMBANKMENT		
A. Crest		
1. Visual settlement		
2. Misalignment		
3. Cracking		
B. Upstream slope		
I. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8"		
4. Woody vegetation present		
5. Cracks, settlement, bulges		
6. Rodent holes		
C. Downstream slope		
1. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8"		
4. Woody vegetation present		
5. Cracks, settlements, or bulges		
6. Rodent holes		
D. Abutments		
1. Erosion		
2. Seepage		
3. Cracks		
E. Drainage, seepage control		
1. Internal drains flowing		
2. Seepage at toe		
3. Seepage clear (describe)		
PRINCIPAL SPILLWAY (Type □Box □Pipe □Overflow Weir □Other)		
A. Riser (Type □Concrete □Metal □HDPE □PVC □Other)		
1. Trash and debris		
2. Excessive Sediment		
3. Leaks		
B. Barrel (Type □Concrete □Metal □HDPE □PVC □Other)		
1. Seepage into conduit		
2. Trash and debris		
3. Sediment present		
4. Displaced joints		
EMERGENCY SPILLWAY (Type □Vegetated □Rip Rap □Concrete □Other)		
1. Eroding or backcutting		
2. Woody vegetation growth		
3. Trash and debris		
4. Grass > 8"		

Item	Priority 1-4	Comments
OUTLET PROTECTION (Type □Riprap Apron □Riprap Stilling Basin □Storm Sewer □Other)		
1. Obstructed		
2. Adequate riprap		
3. Undercutting at outlet		
4. Channel scour		
5. Trash and debris		
BASIN		
A. Basin bottom and side slopes		
1. Erosion		
2. Excess Sediment		
3. Floating debris		
4. Rodent holes		
5. Shoreline protection		
B. Inflow channels/pipes/inlets		
1. Erosion/scour		
2. Excessive Sediment		
3. Trash and debris		
4. Needs stabilization		
5. Undercutting		
C. Vegetation		
1. Inadequate wetland vegetation		
2. Invasive weeds		
3. Trees within 10' of structures		
PRETREATMENT (Type □Sediment Forebay □Vegetated filter strip □Other)		
A. Sediment Forebay		
1. Excessive Sediment		
2. Trash and debris		
3. Stable overflow into basin		
B. Vegetated Filter Strip		
1. Erosion/scour		
2. Excessive Sediment		
3. Inadequate vegetation		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

Building Number:	JBLE - Eustis Stormwater Management Facility Infiltration Basin Assessment and Maintenance Checklist	BMP Grade:
BMP#:		
Date:	**Time:**	**Inspector:**

Item	Condition 1-4	Comments
EMBANKMENT		
A. Crest		
1. Visual settlement		
2. Misalignment		
3. Cracking		
B. Upstream slope		
1. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8"		
4. Woody vegetation present		
5. Cracks, settlement, bulges		
6. Rodent holes		
C. Downstream slope		
1. Erosion		
2. Groundcover too short/bare spots		
3. Groundcover too tall / >8"		
4. Woody vegetation present		
5. Cracks, settlements, or bulges		
6. Rodent holes		
D. Abutments		
1. Erosion		
2. Seepage		
3. Cracks		
PRINCIPAL SPILLWAY (Type ☐Box ☐Pipe ☐Overflow Weir ☐Other)		
A. Riser (Type ☐Concrete ☐Metal ☐HDPE ☐PVC ☐Other)		
1. Trash and debris		
2. Sediment present		
3. Leaks		
B. Barrel (Type ☐Concrete ☐Metal ☐HDPE ☐PVC ☐Other)		
I. Seepage into conduit		
2. Trash and debris		
3. Sediment present		
4. Displaced or offset joints		
OUTLET (Type ☐Riprap Apron ☐Riprap Stilling Basin ☐Storm Sewer ☐Other)		
1. Obstructed		
2. Adequate riprap		
3. Undercutting at outlet		
4. Channel scour		
5. Trash and debris		

Item	Priority 1-4	Comments
BASIN		
A. Filter media (Type ☐Sand ☐Engineered media ☐Other)		
1. Erosion		
2. Excessive sediment		
3. Standing water		
4. Trash and debris		
5. Saturated media		
B. Underdrain/Filtrate collection system (Access ☐Observation well ☐Manhole ☐Port ☐Other)		
1. standing water		
2. sediment		
C. Basin side slopes		
l. Erosion		
2. Excess Sediment		
3. Adequate groundcover		
4. Trash and debris		
5. Rodent holes		
6. Standing water		
D. Inflow channels/pipes		
1. Erosion/scour		
2. Excessive Sediment		
3. Trash and debris		
4. Needs stabilization		
5. Undercutting		
E. Vegetation		
1. Invasive weeds		
2. Trees within 10' of structures		
PRETREATMENT (Type ☐Sediment Forebay ☐Vegetated filter strip ☐Other)		
A. Sediment Forebay		
1. Excessive Sediment		
2. Trash and debris		
3. Stable inflow into basin		
B. Vegetated Filter Strip		
1. Erosion/scour		
2. Excessive Sediment		
3. Inadequate vegetation		
OTHER		

OVERALL CONDITION ASSESSMENT

□ Condition I. Adequate
□ Condition 2. Routine Maintenance Needed
□ Condition 3. Non-routine Maintenance Needed
□ **Condition 4. Urgent Repairs Needed**

COMMENTS ON OVERALL CONDITION ASSESSMENT

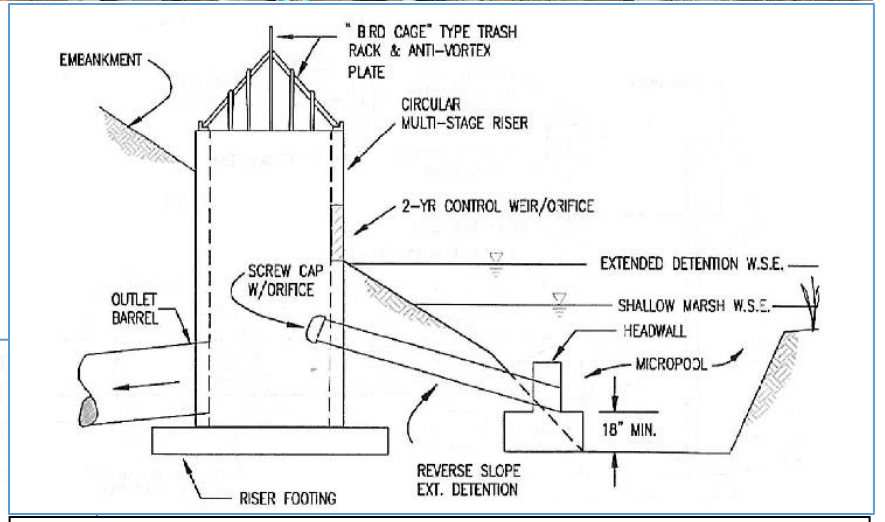
Appendix B:

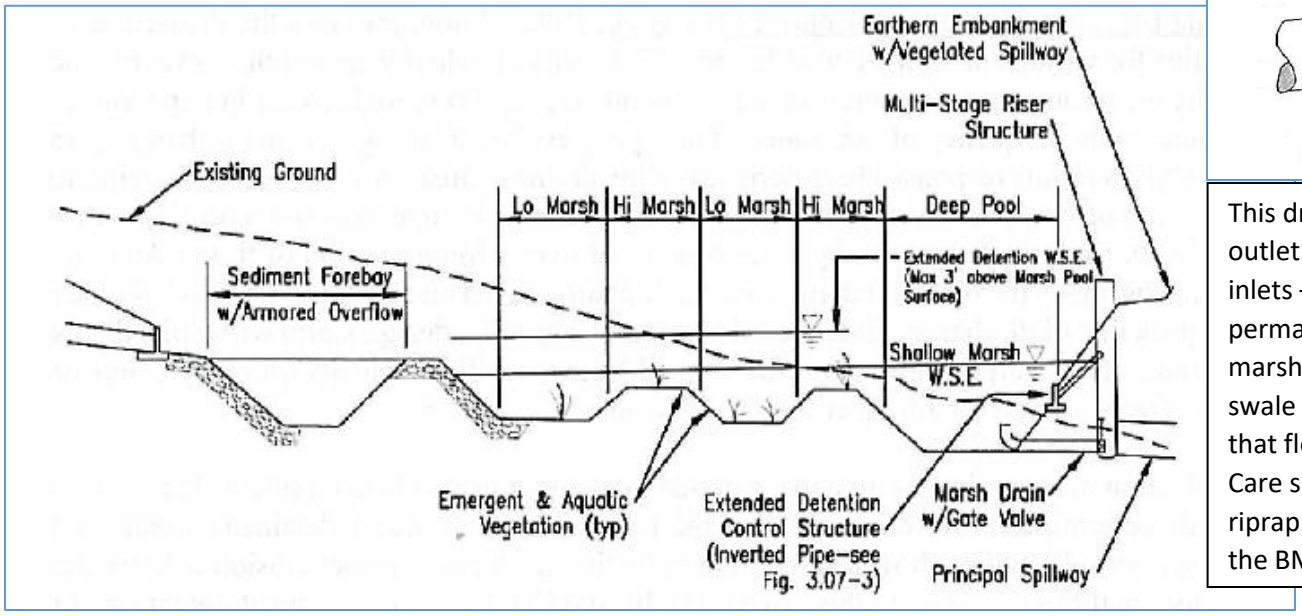
JBLE-Eustis Best Management Practice (BMP) Maintenance Factsheets

BMP Name	BLDG #	BMP Type
BC_DE_100	211	Dry Extended Detention

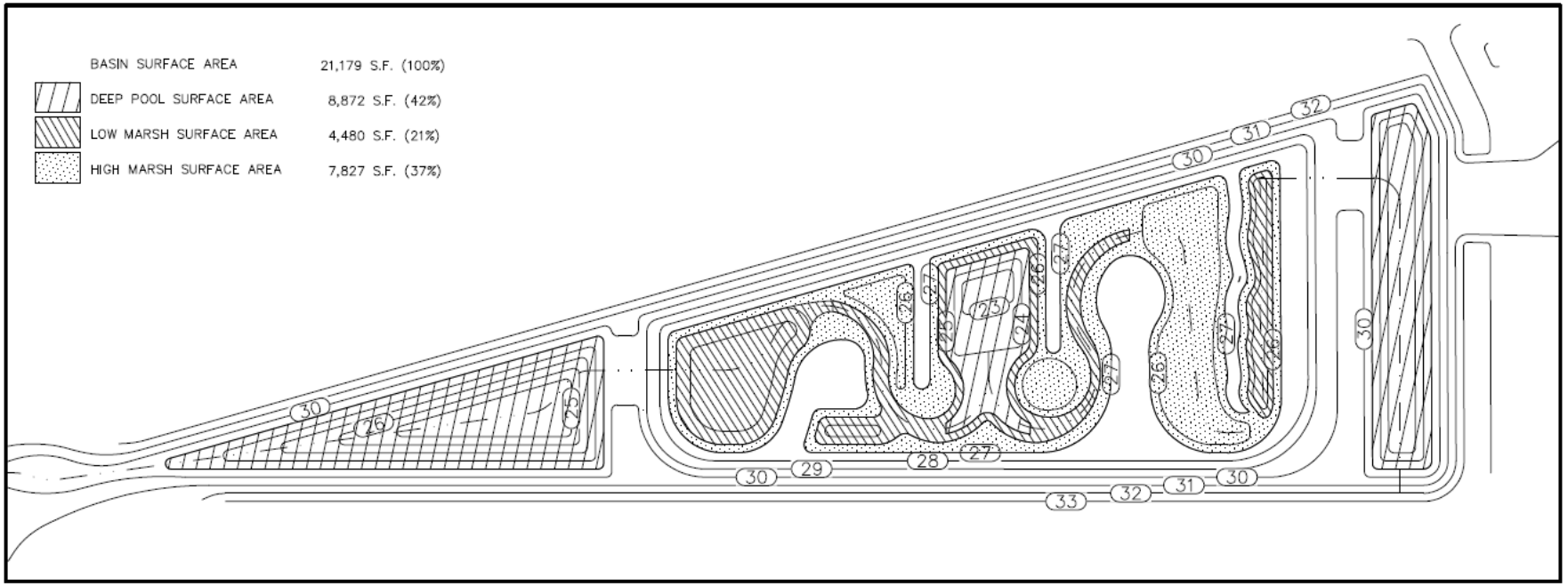
https://swbmpvwrrc.wp.prod.es.cloud.vt.edu/wp-content/uploads/2018/07/BMP_Spec_No_15_EXT_DETENTION_POND.pdf

Dry Extended Detention Pond Regular Maintenance Tasks	Frequency
• Remove trash, debris, and blockages • Repair undercut, eroded, and bare soils • Keep curb cuts at inlet free of blockages for positive drainage	Quarterly
• Mow embankment	2x a year
• Repair rodent burrows • Replace or repair damaged riprap or concrete • Repair cracking or damage of concrete structures • Remove woody vegetation from within 10 feet of any structures including inlets, outlets, and principal spillways • Remove woody vegetation from above any outlet barrels/pipes.	As needed
• Remove accumulated sediment from the forebay	Every 5 to 7 years

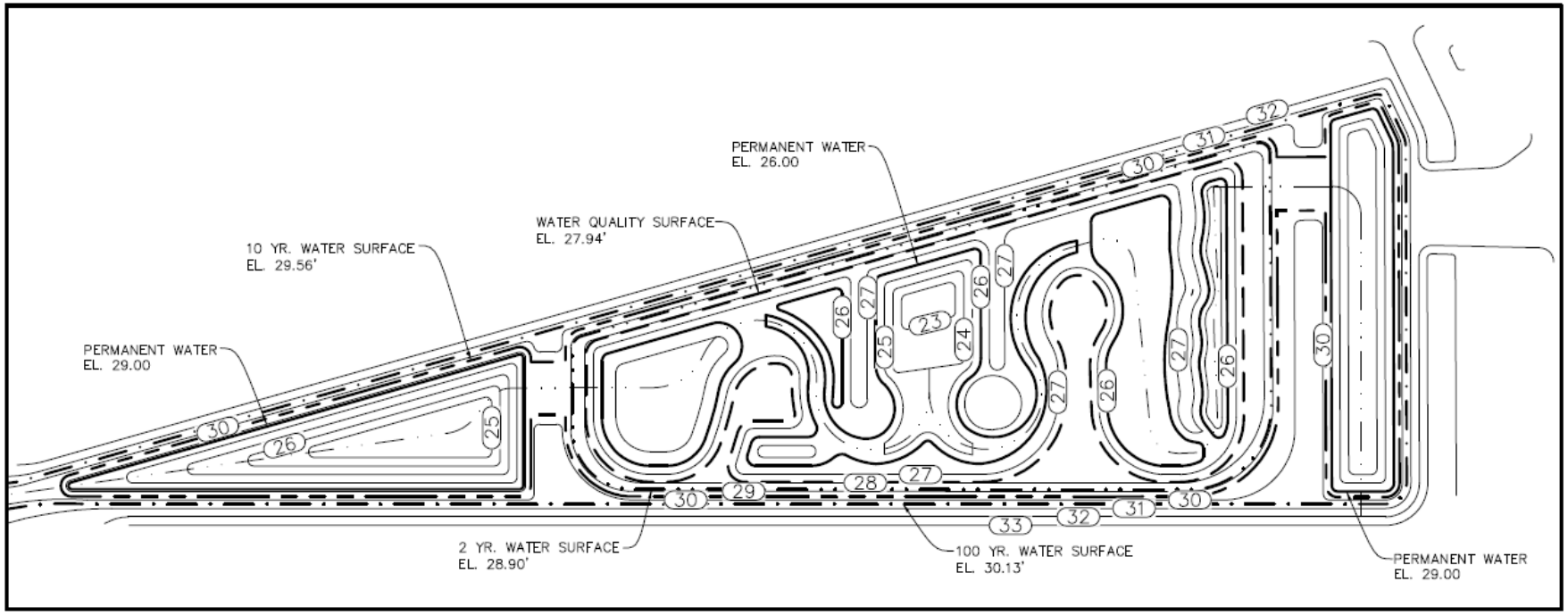




This dry detention pond has a principal spillway structure and an outlet that daylights on the other side of the fence. There are four inlets – 3 pipes and one riprap swale. The SE inlet enters a permanent pool, an inlet directly behind mid-building enters high marsh, an inlet on the west of the facility is piped into the riprap swale on the west. All of the parking lot drains into a grassed swale that flows into the riprap channel before hitting a permanent pool. Care should be taken to be sure all parking lot curb cuts and the riprap swale remain free of sediment buildup so water can flow into the BMP.



DEPTH ZONE ALLOCATION
SCALE: 1"=40'



WATER SURFACE ELEVATIONS
SCALE: 1"=40'

Appendix E

JBLE – Eustis Training Plan

JBLE-Eustis Pollution Prevention Training Plan

Pollution prevention training is a requirement of both the installation's Industrial Stormwater Permit (VA0025216) and the Municipal Separate Storm Sewer System (MS4) (VAR040035).

Environmental Management System & Sustainability

The Air Force has established an environmental, safety, and occupational health policy, AF Policy Directive 90-8, Environment, Safety & Occupational Health Management and Risk Management. The JBLE Environmental Policy Statement supplements this policy with installation-specific requirements and concerns, in accordance with DoDI 4715.17, Environmental Management Systems. The purpose of this procedure is to define the JBLE-Eustis Environmental Policy Statement to protect built and natural infrastructure, protect the environment where 733 MSG and Mission Partners live and work, and ensure sustainability of the missions of the 733 MSG and Mission Partners.

The installation's environmental policy establishes the framework for activities and training at JBLE – Eustis. All training aims to help personnel understand the environmental impacts of their job, compliance requirements, how their organization supports the environmental goals of the installation, and who to contact with any questions or concerns.

The scope of the JBLE Environmental Policy Statement states JBLE-Eustis' commitment to maintain compliance, prevent pollution, execute plans for energy, environmental, safety and occupational health objectives and targets, continually improve, and communicate environmental commitments to all organizations and local community.

JBLE- Eustis Environmental Policy Statement:

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

1. Comply – We will comply with all environmental regulations and all other requirements while reducing compliance costs and liabilities.
2. 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.
3. 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).
4. Achieve improvements - We will continuously improve our programs and processes by effective management and planning.
5. Notify - We will communicate our environmental commitments and performance to all levels of our organization and local community.

Pollution Prevention Training

All JBLE–Eustis personnel and contractors are required to participate in annual training that includes stormwater pollution prevention training. Military and civilian personnel that handle municipal solid wastes, recycling materials, hazardous and non-hazardous wastes, universal wastes, and hazardous substances that have the potential to contaminate the stormwater drainage system at JBLE–Eustis are also required to participate in specialized training developed and maintained by 733d CES/CEIE. Training activities are as follows:

- Environmental Management Awareness and Competency (EMAC)
- Advanced Environmental Management (AEM)

EMP 4.4.2, Environmental Awareness and Competency Training requires JBLE–Eustis personnel to take EMAC and AEM training as appropriate based on personnel assignments within 30 days of arrival at the installation. Refresher training is required on an annual basis.

EMAC Training. EMAC training is provided in an online format via the TEACH website (https://usaf.learningbuilder.com). This training is required for all military and civilian personnel and contractors and is required annually. EMAC annual training is geared toward installation personnel working throughout the base that have the potential to respond to spills, handle waste management activities or hazardous materials and hazardous waste.

AEM Training. In addition to the EMAC training courses, AEM training is required for all personnel. Activity Environmental Coordinators (AEC)s, Unit Environmental Coordinators (UEC), and Hazardous Waste Coordinators track and verify training in their respective areas of responsibility. The AEM training is also provided online through the TEACH website.

Other Training.

- 733d CES/CEIE also provides awareness training for the United States Army Transportation Corps (USATC) School Warrant Officers Advanced Course (WOAC) on an as needed basis.
- Every month the installation hosts a Newcomers Orientation, and CES/CEIE presents information to new installation personnel about the IDDE program, how to report spills, and how to learn more about the stormwater program at JBLE-Eustis.

Spill Response Training. All Employees whose duties include emergency spill control and response are trained in spill control and response annually. JBLE–Eustis personnel that may be involved in spill response are required to maintain the required training specified in Air Force Instruction (AFI) 10-2501 and the installation Integrated Contingency Plan (ICP). JBLE-Eustis Fire and Emergency Services are the first point of contact for all spills and maintain the installation's spill number, and these personnel are trained on the handling of spill control and response as part of a larger emergency response training A rotation of trained and certified 733d CES/CEIE personnel control a "spill phone" 24 hours per day. These personnel receive annual training in spill prevention and response and Hazardous Waste Operations and Emergency Response (HAZWOPER). According to OSHA standard 29 CFR Part 1910.120, HAZWOPER

training is required for any workers who perform cleanup, emergency response, or corrective actions that involve the uncontrolled release of hazardous substances.

Pollutants of Concern (POL). Installation personnel that may be handling Pollutants of Concern (POL) are required to be trained in the maintenance of equipment to prevent discharges. Training courses related to discharge procedure protocols, applicable pollution control regulations, general facility operations, and the contents of the installation Spill Prevention Control and Countermeasures (SPCC) Plan are maintained by 733d CED/CEIE and provided to personnel via the TEACH website.

Pesticides and Herbicides Application. All personnel who purchase, store, utilize, and dispose of all pesticides and herbicides on the installation adhere to the *Integrated Pest Management Plan for Joint Base Langley-Eustis (Eustis), Fort Eustis, Virginia* (IPMP). This document mandates all the training and activities related to these applications. These personnel are trained and certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia). Certification by the Virginia Department of Agriculture and Consumer Services (VDACS) Pesticide and Herbicide Applicator program.

Training topics included in the annual JBLE – Eustis training:

ISO 14001. Description of the international standard ISO 14001 Process and how it applies to people who live and work on JBLE – Eustis.

Spills, Contingency Plans, & Emergency Response. The objectives of spill response training are to understand what spills are, why they happen, who is responsible, and how to do something about them. The installation ICP and SPCC Plan are included in training for personnel.

Spill Prevention. Good housekeeping practices can prevent spills. Simple standard operating procedures for spill awareness and prevention will be used at all times.

Spill response. Spill kits should have specific items depending on the work performed at the facility, and the type of potential spills, and must be adequately stocked at all times. Everyone on the installation must report all spills utilizing the spill phone 757-878-1008.

Animal Fats and Vegetable Oil. Fats, Oils, and Grease (FOG) are not permissible in the storm drains on JBLE – Eustis. Dining facility staff are trained in FOG management using the training provided by Hampton Roads Planning District Commission (HRPDC) at www.hrfog.com.

Site Specific Contingency Plans. These plans are posted at sites that may involve hazardous materials and waste management. They include emergency response numbers, emergency evacuation information, and emergency equipment locations.

Hazardous Waste Management. Training in this section includes labels and container management, inventory, and inspections, and appropriate storage methods and schedules.

Universal Wastes (UWs). Defines universal wastes and proper disposal methods.

Hazardous Materials Management. Indicates the reporting requirements and describes site inspection procedures and schedules.

Containers and Aboveground Tanks. This section discusses the importance of proper labelling, storage, and securement. Also discusses what to do with abandoned and empty tanks and containers.

Tanks. All underground and aboveground tanks must be inspected monthly. Training includes what types of wear to look for, and how to identify leakage.

Washing Operations. The installation has wash rack facilities for land transportation craft, aircraft, and personal vehicles. If these cannot be utilized, CES has standard operating procedures for washing.

Good Housekeeping Procedures – Written procedures for specific activities on the installation are available on the website and are attached to the EMP 4.4.6.2 Wastewater-Stormwater Management for enforcement. They are specific to various activities and are included in the required training program. These include:

- JBLE-Eustis Good Housekeeping Procedures: Exterior Surfaces and Pressure Washing Activities
- JBLE-Eustis Good Housekeeping Procedures: Water Disposal from Dewatering Activities
- JBLE-Eustis Good Housekeeping Procedures: Road, Street, Sidewalk, and Parking Lot Maintenance and Repair
- JBLE-Eustis Good Housekeeping Procedures: Pesticides, Herbicides, and Fertilizer Application
- JBLE-Eustis Good Housekeeping Procedures: Vehicle and Equipment Maintenance
- JBLE-Eustis Good Housekeeping Procedures: Storage of Landscaping Material