U.S. AIR FORCE STORM WATER POLLUTION PREVENTION PLAN

Westover Air Reserve Base

April 2019

About This Plan

This installation-specific Environmental Management Plan (EMP) is based on the U.S. Air Force's (AF) standardized Storm Water Pollution Prevention Plan (SWPPP) template. This plan is not an exhaustive inventory of all storm water requirements and practices. Where applicable, external resources, including Air Force Instructions (AFIs); AF Playbooks; federal, state, local, and country specific Final Governing Standards (FGS) or Overseas Baseline Guidance Documents (OEBGD); and permit requirements, as applicable, are referenced.

Each section of this SWPPP begins with standardized, AF-wide "common text" language that addresses AF, Department of Defense (DoD), and federal requirements, including the EPA General Permit. This common text language is restricted from editing to ensure that it remains standard throughout all plans. The common text language is maintained and updated by the designated Office of Primary Responsibility (OPR) with assistance from the Office of Collateral Responsibility (OCR), as appropriate. Immediately following the AF-wide common text sections, are Installation sections. The Installation sections contain installation-specific content to address state, local, and installation-specific requirements. Installation sections are unrestricted and are maintained and updated by installation or Installation Support Team (IST) personnel.

This document is optimized to be accessed and viewed electronically. The eDASH website at https://cs1.eis.af.mil/sites/edash/ is the primary communication tool for AF EMPs.

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OWNER CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

X _____ 7/8/19

JOHN B. MORIARTY, P.E.
CHIEF, ENVIRONMENTAL ENGINEERING

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CHIEF, ENVIRONMENTAL ENGINEERING

DOCUMENT CONTROL

Record of Updates – The Storm Water Pollution Prevention Plan (SWPPP) is modified and updated in accordance with (IAW) applicable permit requirements.

Page/Section	Nature of Change	Date of Change	Approved By:
	Final SWPPP Submitted	*2 Dec 94*	
	Annual SWPPP Review - Final SWPPP Submitted	*27 Aug 97*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*14 Oct 99*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*24 Jan 01*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*8 Feb 02*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*22 Oct 02*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*30 Dec 02*	
	Revisions to Final SWPPP Submitted 12/30/02	*24 Jan 03*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*4 Nov 03*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*05 Oct 04*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*18 Nov 05*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*12 Sept 06*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*27 Sep 07*	
	2008 MSGP SWPPP Review and Update-Final	*22 Dec 08*	
	Annual SWPPP Review – Final Revised SWPPP Submitted	*6 Aug 09*	
	Annual SWPPP Review & Revision	*28 Oct 11*	
	Annual SWPPP Review & Revision	*10 May 12*	
	Annual SWPPP Review & Revision	*March 2013*	
	Annual SWPPP Review & Revision	*April 2014*	
	Annual SWPPP Review & Revision	*April 2015*	
	Annual SWPPP Review & Revision by contractor AECOM to perform AFCEC Format Incorporation in Sept 2016; Updates by Ms. Saviengvong of CEV in Jan 2017; Certified by	*Sept 2016 and Jan 2017*	

	CEV Flight Chief per Wing Commander authorization		
	Annual SWPPP Review & Revision	*May 2017*	
	Annual SWPPP Review & Revision	*July 2018*	
	Annual SWPPP Review & Revision	*April 2019*	

Record of Review – IAW Air Force Instruction (AFI) 32-1067, *Water and Fuel Systems*, the SWPPP is reviewed based on permit requirements

Review Date	Review Participants	Notes/Remarks	Results in Plan Update (Yes or No)
Dec 2009	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
2 Feb 10	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
Nov 2010	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
Dec 2012	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
Jan 2014	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
Jan 2015	*EA, Inc., WARB SWPPP Team*	*Annual review and update*	*Yes*
Sept 2016	*AECOM, WARB SWPPP Team*	*Annual review and update*	*Yes*
Jan 2017	WARB SWPPP Team	Update	*Yes*
May 2017	*Cardno-EA Joint Venture*	*Annual review and update*	*Yes*
July 2018	*Cardno-EA Joint Venture*	*Annual review and update*	*Yes*
April 2019	*Cardno-EA Joint Venture*	*Annual review and update*	*Yes*

Version Table – A new version of the plan is created when pen and ink changes are incorporated. Below is a list of all versions under the current permit.

Version Number	Description	Date
1	*Comprehensive review and update. SWPPP was modified in accordance with the U.S. Air Force's (AF) standardized SWPPP template.* *Annual SWPPP Review & Revision*	*September 2016*
1.1	*Review and update based on annual evaluation of current base operations. Changes include MS4 requirements (Section 1.3.2).*	*July 2018*
1.2	*Review and update based on annual evaluation of current base operations.*	*April 2019*

1.0 OVERVIEW AND SCOPE

This SWPPP specifies how installation personnel prevent discharges to storm water of potential pollution from industrial operations. It contains procedures intended to minimize the risk of industrial storm water pollution in drainage areas located within the installation's boundaries. The SWPPP describes installation:

- Identification and evaluation of activities and potential storm water pollution sources
- Identification and implementation of storm water Best Management Practices (BMPs)
- Pollution reduction measures and procedures
- Monitoring and inspection procedures

The installation Storm Water Pollution Prevention Team (SWPPT) is responsible for developing, implementing, and managing the SWPPP.

Installation Supplement – Overview and Scope

This SWPPP is intended to be comprehensive, covering all applicable industrial operations at Westover Air Reserve Base (ARB). This plan covers the operations of the 439th Airlift Wing (AW) and its tenants. This SWPPP is written and implemented to comply with the requirements of the United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activity (Permit No. MAR050000) issued on 4 June 2015 and expiring on 4 June 2020, a copy of which is provided in Appendix F. Under Part 8 of the NPDES MSGP, industrial activities have been organized into specific industrial sectors A through AC. At Westover ARB, industrial activities occur primarily under Sector S, Air Transportation. Only portions of Westover ARB that are involved in aircraft and/or ground vehicle and equipment maintenance (including mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, and/or deicing/anti-icing operations are included in Sector S. A copy of the Notice of Intent (NOI) for coverage under the MSGP is provided in Appendix G.

Throughout this SWPPP, reference is made to the corresponding part in the general permit defining the requirements of that section using italics and parentheses next to the section title. Reference to specific Sector S requirements is made in Section 7.0.

1.1 Physical Description and Current Mission (Section 5.2.2)

Westover ARB is composed of approximately 2,511 acres of land within the communities of Chicopee and Ludlow in the northern portion of Hampden County, Massachusetts. The installation is in proximity to the Cities of Holyoke and Springfield, and the Towns of West Springfield, Granby, and South Hadley. Westover ARB is located 35 miles north of Hartford, Connecticut and 90 miles west of Boston, Massachusetts. The installation is situated approximately 2 miles east of the Connecticut River, and is traversed and/or bound by Cooley, Stony, and Willimansett Brooks.

State Route 33, the main thoroughfare providing access to Westover ARB, is located less than 1 mile west of the installation. Approximately 2 miles southwest of the installation, State Route 33 intersects with Interstate 90 (the Massachusetts Turnpike), an east-west route between Boston and New York State. Figure 1 shows the location of Westover ARB in relation to the surrounding region.

Westover ARB has two active runways, Runway 05-23, which is 300 feet wide by 11,600 feet long, and Runway 15-33, which is 150 feet wide by 7,082 feet long. Runway 05-23 is oriented approximately southwest to northeast, while Runway 15-33 is oriented approximately northwest to southeast. A series of

taxiways extending from the flightline parking apron provide access to the runways.

The activities and operations at Westover ARB are grouped by functional areas and land use categories, including aviation support, residential, commercial, industrial, medical, administrative, public facilities/recreation, and open space. The two primary land use categories are aviation support and industrial activities; which account for more than 50 percent of all facilities and square footage.

Although the predominant land use surrounding Westover ARB is residential, a large percentage of land is devoted to commercial and industrial uses, with 13 percent of the total land in the region consisting of cities and towns. Areas to the north and east of the installation consist mostly of rural communities with large agricultural and recreational uses; bordering Westover ARB to the south and west is the town of Chicopee. Westover ARB employs about 4,000 people.

Westover ARB is home to the 439 AW of the Air Force Reserve Command (AFRC). The primary mission of the 439 AW is to provide worldwide air movement of troops, supplies, equipment, and medical patients. The 337th Airlift Squadron is the wing's flying unit, and operates 8 C-5 Galaxy aircraft. Because of the size of the C-5 aircraft, the 439 AW specializes in missions involving outsized and oversized cargo. The 439 AW also maintains all the aircraft assigned Air Force real property, equipment, and supplies.

The 439 AW is also host to tenant organizations. The largest tenant organizations at Westover ARB are the U.S. Marine Corps (USMC) Reserves and Army Reserves. In addition, the Westover Metropolitan Development Corporation (WMDC) is a long-term tenant at the installation. The WMDC operates an airport terminal and several hangars along the transient aircraft flight line. These tenant organizations are covered within the scope of the storm water program operated by the 439 AW.

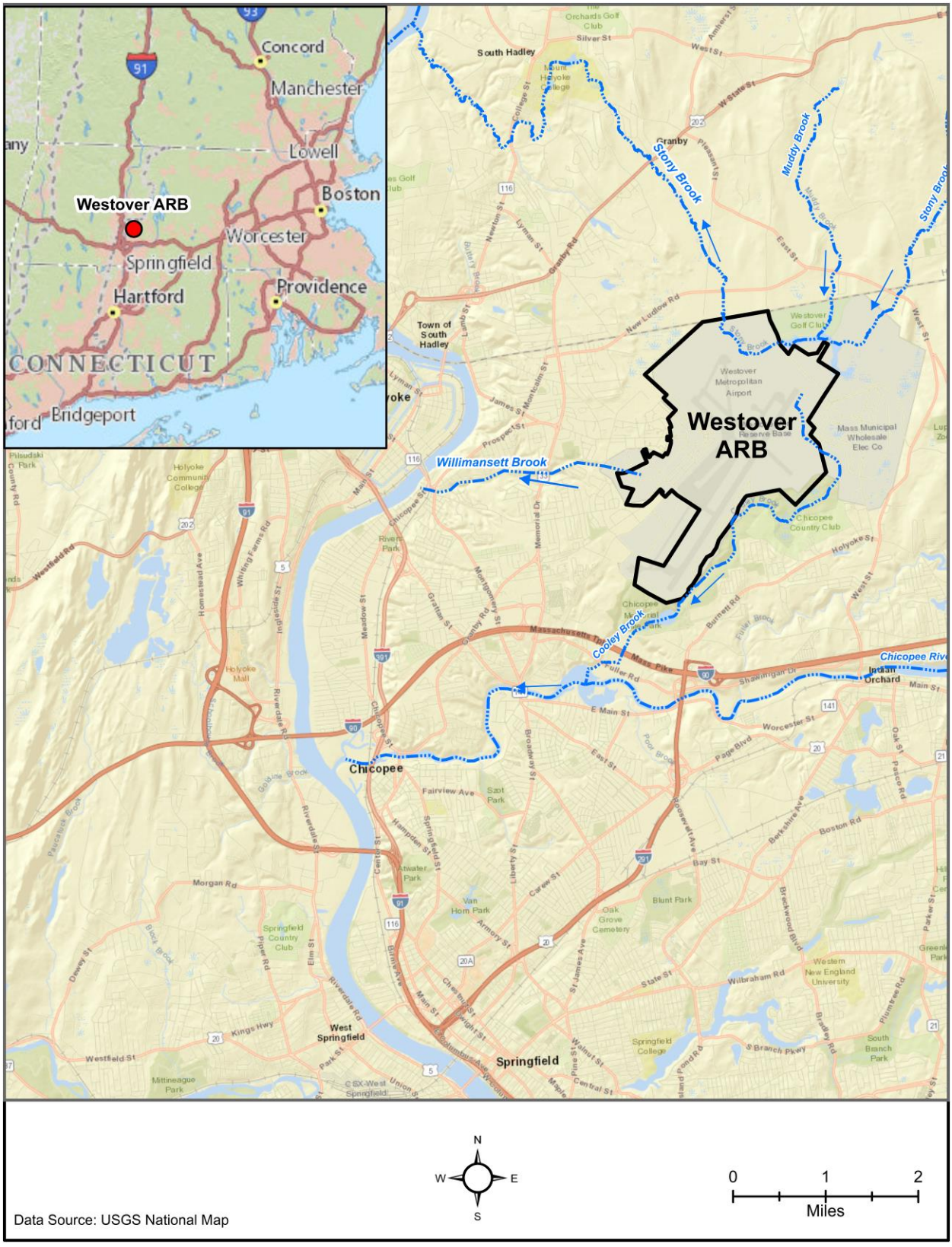

Figure 1-1
General Location Map of Westover ARB

1.2 Site Map (Sections 5.2.2 and 8.S.5.1)

A site map showing the layout of Westover ARB, location of outfall points, receiving waters, and watershed boundaries is provided in Appendix C.

Westover ARB maintains an Integrated Natural Resources Management Plan (INRMP) that describes potential habitat for threatened or endangered species and contains a wetlands delineation map.

1.3 Watershed Identification and Characterization

The topography of the Westover ARB is predominately flat, with elevations ranging from 230 to 240 feet above sea level. Westover ARB is a local high point, causing all surface water to flow away from the installation. Storm water runoff in the south and southeast part of the installation exits at Outfalls 001, 002, 003, 006, 007, and 009 and flows into Cooley Brook, which ultimately flows through the Chicopee Reservoir before entering the Chicopee River. Storm water runoff in the west exits at Outfall 004 and is the headwater for Willimansett Brook, which flows to Mountain Lake. Outfall 011 receives runoff from the north part of Westover ARB and discharges to Stony Brook. All of the outfalls eventually flow into the Connecticut River, located 2 miles west of Westover ARB.

1.3.1 Outfall Descriptions

Beginning at the south end of Westover ARB and working in a counterclockwise fashion around the installation boundary, each outfall is further described.

Outfall 003 receives runoff from the WMDC airport terminal area, as well as drainage from off site. Adjacent to Drainage Basin 003 is property that is leased by WMDC and includes several hangars and associated parking areas. Runoff from this area discharges via a large capacity oil/water separator (OWS) at an outfall that is managed by the City of Chicopee; consequently, this outfall is covered under its own NPDES permit and is not the responsibility of Westover ARB.

Outfalls 002 and 001 are both served by large capacity OWSs, and receive runoff from the East Ramp where most of the C-5s are parked and deicing operations occur, most of the hangars along the apron including a fueling facility, and the Bulk Fuels Complex and aircraft fuel hydrant system. Outfall 002 receives storm water runoff from the south end of the East Ramp, two large aircraft maintenance hangars, and the majority of the bulk aircraft fuel storage and transfer locations. The OWS at Outfall 002 has a total capacity of 44,000 gallons and an oil storage capacity of 24,000 gallons. During periods of high storm water flow, a weir in a manhole upstream of the OWS allows some of the flow to bypass the OWS.

Outfall 001 receives storm water runoff from the remaining portions of the East Ramp, most of the aircraft parking and fueling areas, and the majority of aircraft and ground equipment maintenance hangars. Outfall 001 also has a weir upstream of the OWS to allow some storm water to bypass the OWS during periods of high flow. The OWS at Outfall 001 has a total capacity of 70,000 gallons and an oil storage capacity of 34,000 gallons. The effluent from the OWS enters a submergent flow wetland constructed in July 2002 to biologically treat deicing fluid in the storm water before discharge to Cooley Brook. This submergent flow wetland could further minimize the impact of deicing fluid on Cooley Brook. Constructed wetlands, used as a biological treatment method for wastewater containing organic and inorganic contaminants, have not been used frequently for treatment of aircraft deicing/anti-icing fluids to date. However, due to the readily biodegradable nature of glycol, use of a subsurface or reed-bed type constructed wetland could be expected to be successful in preventing large quantities of deicing fluids from directly discharging to surface waters.

Outfall 006 receives runoff from industrial areas in the northeast section of the Base, including the fire department and transient aircraft apron.

Outfalls 007 and 009 receive runoff predominantly from taxiways, runways, and grassy areas in the eastern part of the installation. Outfall 009a is up gradient of Outfall 009 and is the location where the quarterly visual assessment of storm water discharge is conducted.

Outfall 005, on the north side of Westover ARB, receives storm water runoff from maintenance operations and taxiways and ultimately discharges the facility at Outfall 011. Because Outfall 005 discharges within Westover ARB and ultimately through Outfall 011, it is not a regulated outfall. Besides receiving storm water from Outfall 005, Outfall 011, which is located on Stony Brook, receives storm water from mostly unimproved areas on the north side of the installation and run-on from Wade Lake.

Finally, Outfall 004 receives storm water flow from the northwest section of Westover ARB including the hazardous materials pharmacy (HAZMART), hazardous waste storage, civil engineering, vehicle fueling station, and Base supply.

During the 2013 Comprehensive Site Compliance Evaluation, a review of the outfalls and associated watersheds was conducted by EA Engineering (see Appendix M). It was determined that Westover ARB had multiple outfalls that met the requirements of substantially identical outfalls as described in the 2015 MSGP. The following outfalls have been determined to be substantially identical due to land use and industrial activities within each;

- Outfalls 002, 001
- Outfalls 003, 006
- Outfalls 005, 011
- Outfalls 007, 009

All outfalls will be sampled and inspected on a rotating basis as defined in the 2015 MSGP except for Outfall 003. WARB will no longer monitor this outfall due to its high level of off base drainage, minimal amount of Base industrial activities performed within the drainage basin, and the difficulty of reaching the outfall due to its location. Outfall 006 will be inspected each quarter as a substantially identical to outfall 003. Outfall 004 was found to not meet the criteria of substantially identical to any other outfalls and will continue to be inspected annually. Table 1-1 presents the characteristics for each of the outfalls.

Table 1-1

Industrial Outfall Characteristics at Westover ARB

OUTFALL	TOTAL DRAINAGE AREA (ACRES)	IMPERVIOUS AREA (ACRES)	PERCENT IMPERVIOUS (%)
001	171.6	106.4	62
002	131.7	72.5	55
003	177.2	108.1	61
004	353.2	70.8	20
006	170.3	94.2	55
007[b]	163.0	36.7	22
009[b]	142.4	21.2	15
011[a,b]	499.0	46.5	9

Note: [a]Outfall 005 is not a regulated outfall because it ultimately flows to and leaves the base at Outfall 011.
[b]Watershed is primarily non-industrial with the exception of runways.

1.3.2 Municipal Separate Storm Sewer System (MS4) Evaluation

Westover ARB does not discharge to an MS4; however, Westover ARB became a regulated urbanized area based on the 2010 census which was officially released by the Census Bureau on 26 March 2012. Westover ARB has been denied a waiver for coverage under the General Permits for Storm Water Discharges from Small MS4s in Massachusetts. A Notice of Intent for the MS4 General Permit was submitted to the EPA by the October 2018 deadline.

1.3.3 Impaired Water – Characterization by the State (Section 2.2.2)

Stony Brook is the only water body receiving storm water runoff from Westover ARB with a listed impairment. Stony Brook is the receiving water for Outfall 011 on the north side of Westover ARB. Based on the 2014 Integrated List of Waters and the 2010 and 2012 Water Quality Assessments, Stony Brook is impaired for non-native aquatic plants, *Escherichia coli (E. coli)* bacteria, and turbidity. Based on these impairments, total maximum daily loads (TMDLs) are required for *E. coli* and turbidity, but have not yet been established. The 2016 Integrated List of Waters is currently in Draft status. Table 1-2 summarizes the impairment listing for Stony Brook.

Table 1-2

303(d) Impaired Waters

Location/Section	Waterbody Name (ID)	Impairment	TMDL Development Status
Outfall 011	Stony Brook MA34-19	Non-native aquatic plants, *E. coli*, and Turbidity	TMDL needed

1.4 Meteorological Summary

Westover ARB is located in Chicopee, Massachusetts, near Springfield in the south-central part of the state. The climate is typical of a New England maritime climate: cool, temperate and somewhat wet. The all-time record high temperature is 104˚F, and the record low temperature is -22˚F.

The average annual precipitation at Westover ARB is 45.9 inches. This precipitation is distributed very evenly, averaging between 3 and 4 inches in every month of the year. The highest monthly precipitation total on record is 18.68 inches. The maximum 24-hour rainfall event has been 7.55 inches. On average, rain events greater than one-half inch in 24 hours occur on 27 days per year. On average, approximately 36 inches of snow falls annually at Westover ARB.

2.0 INSTALLATION PROFILE

Scope of Plan	All applicable industrial operations at Westover ARB. This plan covers the operations of the 439th AW and its tenants
Facility Operator	Office Symbol: 439th AW Address: 250 Patriot Avenue City, State, Zip Code: Chicopee, MA, 01022 Telephone Number: 413-557-2434
Office of Primary Responsibility (OPR)	The Environmental Office (439 MSG/CEV) has overall responsibility for implementing the Storm Water Pollution Prevention Plan (SWPPP) and is the lead organization for monitoring compliance with applicable federal, state, and local storm water regulations
Responsible Official/Legally Responsible Person	Office Symbol: 439 AW/CC Name: DERIN S. DURHAM, Colonel, USAF Telephone Number: 413-557-2434
Water Quality Program Manager (SWPPP Contact)	Name: Champanine Saviengvong Title: Water Program Manager Telephone Number: 413-557-3951 Email address: champanine.saviengvong@us.af.mill
Permitting Authority	United States Environmental Protection Agency (EPA)
Permit Type	Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity
Permit Number/Permit Tracking Number	General Permit MAR050000 Facility Permit MAR052002
Permit Expiration Date	4 June 2020
SIC Code(s)	4512, 9711
NAICS Code(s)	481, 928
General Location Map	See Location of Westover ARB Map in Section 1.0 Overview and Scope.
Site Map	See Appendix C: Site Map.

3.0 ENVIRONMENTAL MANAGEMENT SYSTEM

The AF environmental program adheres to the Environmental Management System (EMS) framework and its Plan, Do, Check, Act cycle for ensuring mission success. Executive Order 13693, U.S. Department of Defense Instruction (DODI) 4715.17, AFI 32-7001, and international standard, ISO 14001:2004, provide guidance on how environmental programs should be established, implemented, and maintained to operate under the EMS framework.

The storm water program employs EMS-based processes to achieve compliance with all legal obligations and current policy drivers, effectively managing associated risks, and installing a culture of continuous improvement. The SWPPP serves as an administrative operational control that defines compliance-related activities and processes.

4.0 GENERAL ROLES AND RESPONSIBILITIES

The SWPPP requires the full involvement of all organizations and personnel on the installation, including contractors and other DoD organizations. The major roles/organizations involved in supporting the SWPPP at a typical installation include:

- Installation Commander
- Base Civil Engineer
- Environmental Element Chief
- Water Quality Program Manager
- Storm Water Pollution Prevention Team
- Installation Personnel
- Air Force Civil Engineer Center (AFCEC)
- Unit Environmental Coordinator (UEC, see AFI 32-7001)

SWPPP Team members are identified by name or title, along with their individual responsibilities, in Appendix A.

Additional organizational and personnel roles and responsibilities are described throughout this SWPPP and in referenced documents. Detailed information about typical SWPPP responsibilities is available in the Water Quality Playbook and AFI 32-1067. Additional installation-specific roles and responsibilities are documented in the Storm Water Control Measures in Section 7.2.

Installation Supplement – General Roles and Responsibilities

4.1 Storm Water Pollution Prevention Team *(Section 5.2.1)*

Per the MSGP, Westover ARB has identified staff members (by name or title) that comprise the facility's SWPPT as well as their individual responsibilities. The SWPPT is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing and maintaining control measures and taking corrective actions when necessary. Each member of the SWPPT must have ready access to either an electronic or paper copy of applicable portions of the MSGP, the most updated copy of the SWPPP, and other relevant documents or information that must be kept with the SWPPP.

4.2 Roles and Responsibilities of the SWPPT Members (*Section 5.2.1)*

To effectively implement all aspects of this plan, there must be clear roles and responsibilities for each member of the SWPPT to follow. Responsibilities for members of the SWPPT, and other personnel not directly associated with the SWPPT are described in Appendix A.

5.0 TRAINING

The installation implements storm water training programs to ensure that base personnel, contractors, and visitors are aware of their roles in the program and the importance of their participation to its success. DoDI 4715.10, *Environmental Education, Training, and Career Development*, implements policy and provides the procedures for environmental education, training, and career development programs for DoD personnel. The installation ensures that appropriate personnel complete required education, training, and certification necessary to perform their jobs. Priority is given to the use of AF-approved

education/training sources such as AFIT training courses and official AF-approved computer-based training resources (e.g., ESOH-TN, ADLS, ArcNet, etc.) to meet training needs.

Specific training requirements may be outlined in Storm Water Control Measures in Section 7.2. Training records are maintained IAW the Recordkeeping and Reporting section of this plan.

Installation Supplement – Training

Employee Training Plan *(Sections 2.1.2.8 and 5.2.5.1)*

Employee training is essential to effective implementation of the SWPPP. The purpose of a training program is to teach personnel at all levels of responsibility the components and goals of the SWPPP. When properly trained, personnel are more capable of preventing spills, responding safely and effectively to an accident when one occurs, and recognizing situations that could lead to stormwater contamination.

Per the MSGP, all employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel) must be trained. Stormwater pollution prevention training is provided annually to Maintenance Group (MXG) and on an as-needed basis to Tenants.

Training Content includes: spills response; best management practices; and watershed education. Each respective Base training liaison maintains their own Training Date log.

6.0 RECORDKEEPING AND REPORTING

The installation implements measures to ensure compliance with applicable permit recordkeeping and reporting requirements. Records are stored and maintained IAW Air Force Manual 33-363, *Management of Records*, and records are archived and disposed IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The installation complies with all permit reporting requirements.

The installation maintains the following inspection, monitoring, and certification records with the SWPPP. Overseas installations may have different requirements than the list below. When possible, a link to the electronic version of the record is made available in the references section of this plan.

1. Copy of the Notice of Intent (NOI)
2. Copy of the acknowledgement letter containing the permit tracking number;
3. Copy of the permit
4. Description and dates of any significant spills, leaks, or other releases. Note: the installation maintains this information in EASI, and a link is available in the references section of this SWPPP
5. Employee training records
6. Documentation of maintenance and repairs of control measures
7. Inspection reports
8. Documentation of deviations from the schedule for monitoring or assessments and the reason for the deviation
9. Documentation of corrective actions taken
10. Documentation of benchmark exceedances and how they were responded to
11. Documentation to support determination that pollutants of concern are not expected to be present above natural background levels if water is discharged directly to impaired waters

Additional state, local, or host nation recordkeeping and reporting requirements are described in the Installation Supplement, as necessary.

Installation Supplement – Recordkeeping and Reporting

6.1 SWPPP Recordkeeping *(Sections 5.5 and 7.8)*

In addition to the recordkeeping and reporting described above, Westover ARB maintains reports of the routine inspections performed according to Section 7.4 of this SWPPP.

Westover ARB shall retain this SWPPP and associated records listed above for three years after coverage under this permit expires.

The Hazardous Material (HAZMAT) Emergency Planning and Response Plan for Westover ARB details numerous reports that should be completed as a follow-up to a reportable spill event. These records generally include:

- The date and time of the incident, weather conditions, duration, cause, environmental problems, response procedures, parties notified, recommended revisions of the spill plan, operating procedures, and/or equipment needed to prevent recurrence.
- Formal written reports to document notification to outside agencies such as the National Response Center, MDEP, or other.
- A list of the procedures for notifying the appropriate installation personnel and the name and telephone number of responsible personnel. This enables more rapid reporting of and response to spills and other incidents.

6.2 Recording of Monitoring Activities and Results *(Appendix B, Section B.10)*

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit. Records of all monitoring information must be maintained for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated.

6.3 Plan Revisions

The MSGP does not require annual revisions of the SWPPP; however, Westover ARB will amend this plan whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to the waters of the state of Massachusetts, or if the SWPPP proves to be ineffective at eliminating or significantly minimizing pollutants from sources identified in this plan, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. A record or log of changes to the plan is listed in the front of this SWPPP.

7.0 PROCEDURES - STORM WATER POLLUTION PREVENTION PLAN

7.1 Potential Pollution Sources

Areas at the installation where industrial materials or activities are exposed to storm water are described in the Installation Supplement below.

Documentation of significant spills is maintained in the EASI database. A link to EASI is available in the references section of this plan, and necessary information may be maintained in an appendix.

Installation Supplement – Potential Pollution Sources

"Installation Supplement"

Summary of Potential Pollutant Sources *(Part 5.2.3)*

Areas at Westover ARB where industrial materials or activities are exposed to storm water or from which allowable non-storm water discharges originate must be identified and described. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product, or waste product. For structures located in areas of industrial activity, Westover ARB personnel must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

Industrial Area Identification and Survey *(Section 5.2.3)*

Industrial areas were surveyed to identify areas of potential stormwater contamination and determine if they met the criteria for regulated industrial activity points (RIAPs). Regulated industrial materials or activities include material handling equipment or activities, industrial machinery, raw materials, intermediate products, byproducts, final products, and waste products. Regulated material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, or waste product.

RIAPs are buildings or areas at Westover ARB where certain industrial activities take place with industrial materials or chemicals that could potentially be exposed to precipitation and contaminate storm water. Through a review of documents, discussion with personnel, and visual inspections at Westover ARB, main buildings or facilities have been placed into one of two categories: industrial (i.e., RIAP) or non-industrial. Non-industrial facilities include office buildings and residential areas, and facilities with no industrial activities taking place.

Buildings/facilities identified as RIAPs based on this RIAP screening process are shown on Table 7-1. The RIAP list has been revised based on observations and conversations with installation personnel during the February 2019 Air Force Voluntary 3rd Party Site Evaluation. Some facilities at Westover ARB were not included in the RIAP screening process because they were non-industrial and not associated with Sector S, Air Transportation.

Table 7-1

Regulated Industrial Activity Points (RIAPS)

1301	**5425**	**7084**
1530	**7000**	**7701, 7705, 7713, 7714**
2450	**7025, 7026, 7027**	**7711**
2500	**7040**	**8005**
2506	**7045, 7046**	**Flightline Apron**
3101, 3506, 3507	**7071**	**Transient Aircraft Apron**
3405	**7072**	**Soil Stockpile**
3505	**7073**	
5375	**7075**	

As part of the RIAP identification process, a detailed inspection has been conducted at each RIAP to identify the industrial activities performed, the materials stored, the BMPs currently being practiced, and the likelihood for non-stormwater discharges from these locations. The inspection was facilitated by the use of a RIAP inspection form that had been previously completed for each RIAP. Appendix E contains all completed RIAP survey forms for Westover ARB. The RIAP inspection form is comprised of the following sections:

1. Inventory of Hazardous Materials Potentially Exposed to Storm Water: Lists and identifies any hazardous chemicals, petroleum products, or other materials that are present in substantial quantity that could potentially contact precipitation or runoff.
2. Potential for Storm Water Contamination: Describes activities occurring with the potential to cause stormwater contamination.
3. Description of Storm Water Entry Points and Ultimate Outfall Points: Describes areas where contaminated storm water could enter the storm drainage system and identifies the ultimate outfall point.
4. Current BMPs in Place: Identifies the general and site-specific BMPs in existence at the time of the inspection.
5. Suggested BMPs: Suggests any new BMPs that would mitigate storm water pollutant discharges.
6. Other Information: Presents other related or interesting information.

In addition, quarterly visual inspections are conducted at each RIAP facility using the RIAP forms in Appendix E and the guidance contained in Section 7.4 of this SWPPP.

Base Drainage and Watershed Characterization

Appendix C contains a base-wide map that identifies the location of industrial areas, outfalls, watershed boundaries, structural controls, surface water bodies, past spills and leaks, and non-stormwater discharges. Section 1.3 of this SWPPP provides additional information on receiving waters, outfalls, and drainage area characteristics.

Material Inventory

An inventory of materials that are potentially exposed to storm water and may contribute to contamination of storm water was developed and possible pathways for contaminated storm water to enter the storm drainage system were identified. The material inventory and probable pathway for contamination to enter the storm drainage system for each RIAP is provided on RIAP forms in Appendix E. These forms were completed and updated as part of the February 2019 Air Force Voluntary 3rd Party Evaluation. In addition, Section 7.2 of this SWPPP includes general and site-specific BMPs or pollution control measures and management practices that need to be routinely performed at Westover ARB to prevent exposed materials from being discharged to the environment.

There are several pollutant parameters that could be present in storm water at Westover ARB and potentially enter adjacent surface water bodies. These parameters are biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), oil and grease, propylene glycol, potassium acetate, sodium formate, sodium chloride, and various hazardous constituents of fuels (e.g., benzene, toluene, xylene, cyclohexane, ethylbenzene, and naphthalene). These contaminants can enter storm water via aircraft and vehicle fueling, aircraft and runway deicing activities, and spills and leaks. Pollution prevention controls for these activities are presented in Section 7.2 of this SWPPP, Storm Water Control Measures.

Several management improvements have occurred that have reduced the volume and toxicity of hazardous material contamination in storm water discharges from Westover ARB.

- Westover ARB currently employs a pharmacy system for distributing hazardous materials, thus limiting hazardous material storage and waste generation. Materials are allocated from the Hazardous Materials Pharmacy (Hazmart) for use at the industrial shops on an as-needed basis. Any unused portion of the material is returned to the pharmacy, where it can be made available for other users.
- Westover ARB tries to plan flights to minimize the need for deicing. Westover ARB parks aircraft in hangars as much as possible prior weather conditions that would create icing conditions. Westover ARB will also use radiant heating from the hangar's ceiling heaters to defrost planes when possible.
- Westover ARB is currently using potassium acetate for runway deicing. When a predictable weather forecast is provided, potassium acetate is used as an anti-icing chemical to prevent the surface of the runway from freezing. When used in anti-icing operations, the amount of potassium acetate required to prevent the runway from icing is approximately half the amount it takes to defrost a frozen runway. Westover ARB uses vehicle-mounted runway surface and air temperature measuring equipment to monitor ambient conditions and a vehicle-installed decelerometer to measure runway slickness. Use of this equipment allows Westover ARB to apply the appropriate amount of potassium acetate to the runway and apron surfaces without over-applying.
- Waste minimization and pollution prevention efforts have successfully reduced hazardous material usage and waste generation over the past several years. All hazardous materials are evaluated to determine if less-toxic alternative materials could be utilized during the process.

Past Spills and Leaks *(Section 5.2.3.3)*

The MSGP requires documentation of all significant spills and leaks of oil, toxic, or hazardous pollutants that occurred during the previous 3 years. Significant spills include, but are not limited to, releases of oil

or hazardous substances in excess of quantities that are reportable under Section 311 of the Clean Water Act (CWA) or Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Fuel spills in excess of 10 gallons are considered reportable in Massachusetts.

POL spills and leaks are one of the major storm water pollution concerns at Westover ARB. Petroleum-based fuels and oils have a variety of hazardous components (e.g., benzene, toluene, and xylene) that could have adverse impacts on receiving water quality in the event of an accidental discharge. Because high quantities of Jet-A fuel are used at Westover ARB, it has the greatest potential to contaminate storm water. Large quantities of Jet-A fuel are transferred from the tanks at the POL Storage Area to refueler trucks, which transport fuel to the Flightline for aircraft fueling. Alternatively, the aircraft hydrant system is used to pump the fuel directly from the storage tanks to the aircraft. Fuel spills from overfills of aircraft, refueler trucks, or fuel bowsers can occur on the Flightline or in the POL Complex.

Small POL spills can occur at Westover ARB from fuel transfer operations. Fuel spills from overfills can occur during aircraft refueling on the Flightline apron or at organizational tanks and equipment throughout the installation. A list of spills and leaks that have occurred over the past 5 years is included in Appendix B. Reporting requirements for future spills and leaks are presented in Section 7.4, Inspections.

Summary of Storm Water Monitoring Data (Sections 6.2.4.1 and 8.S.7)

Stony Brook has been classified as an Impaired Waterway with the pollutants of concern being non-native aquatic plants, TSS, and *E. coli*. Westover ARB discharges to Stony Brook from Outfall 011. As a result, Westover ARB is required to sample for TSS and *E. coli* annually from Outfall 011. A discussion of this monitoring requirement is provided in Section 1.3.3 of this SWPPP.

The MSGP requires airports that use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis to conduct benchmark storm water monitoring. Because Westover ARB does not use deicing chemicals in these quantities, it is not required to conduct "benchmark" monitoring in the associated outfalls.

Non-Storm Water Discharges *(Section 1.1.3)*

The non-storm water discharges listed in Table 7-2 are authorized by this permit.

Table 7-2
Non-Stormwater Discharges Authorized by the MSG Permit

• *Discharges from emergency/unplanned fire-fighting activities;*
• *Fire hydrant flushing;*
• *Potable water sources including waterline flushings;*
• *Uncontaminated air conditioning or compressor condensate, and other uncontaminated condensate such as condensate from the surface of pressurized gas cylinders stored outside;*
• *Irrigation drainage;*
• *Landscape watering provided that all pesticides and fertilizers have been applied in accordance with manufacturer's instructions;*

• *Pavement wash waters where no detergents or hazardous cleaning products are used (i.e., bleach, muriatic acid, sodium hydroxide, etc.) and the wash waters do not come into contact with oil and grease or any other toxic or hazardous materials.*
• *Routine external building wash-down which does not use detergents;*
• *Uncontaminated ground water or spring water;*
• *Foundation or footing drains where flows are not contaminated with process materials such as solvents; and*
• *Incidental windblown mist from cooling towers that collect on rooftops or adjacent portions of the facility, but not intentional discharges from cooling tower (e.g.; "piped" cooling tower blowdown or drains).*

A variety of non-stormwater discharges, including illicit connections, deicing activities, and outside washing of aircraft, vehicles, and equipment were identified and evaluated through visual inspection, dye testing, review of utility schematics, and discussions with base personnel.

Illicit Connections (Section 5.2.3.4)

An illicit connection is a type of non-storm water discharge and occurs when indoor plumbing (e.g., floor drains, sinks, or trench drains) is connected to the storm sewer system rather than the sanitary sewer system. Determinations of flow drainage patterns and sewer connections are made by reviewing building utility schematics and sewer maps. However, if the drainage destinations remain unclear then visual inspections and/or dye testing is required.

Visual inspection of the storm sewer lines can often provide an indication of a non-storm water discharge. If there is flow present in the storm sewer during warm, dry weather, then it is often an indication of an illicit connection. A dye test can also be performed to aid in locating an illicit connection. The dye test consists of releasing dye into floor drains and sinks where illicit connections are suspected. Investigators, equipped with high-powered flashlights and communication devices, are then stationed at both the storm and sanitary sewer outlets to examine the discharge for discoloration.

In 1994, several sites were suspected of having illicit connections to the storm sewer due to their proximity to storm sewer inlets, the age of the building, or the building manager's description of flow patterns. To identify these illegal connections, an illicit connection survey was performed in April 1994 as part of the initial SWPPP site assessment. The survey included a review of building utility schematics and sewer maps, visual inspections, and dye testing.

In total, five dye tests were performed at three sites in 1994, and illicit connections were identified at Buildings 7000 (Fuel Systems Shop, Aircraft Inspection), 7084 (Fire Department), 1601 (Morale, Welfare, and Recreation), and 7711 (Refueler Truck Maintenance). Building 1601 was demolished in 2002 and Building 7000 no longer has illicit connections. The illicit connections at Buildings 7084 and 7711 were identified through conversations with installation personnel and review of facility drawings. Floor drains in Building 7084 were re-piped to the sanitary sewer. On 30 May 2006, the liquid in the OWS at Building 7711 was pumped out. A mechanical plug was installed into the storm system line within the first manhole down-gradient of the separator. This plug effectively cuts the separator off from the storm system.

Summary of Potential Storm Water Contamination by Industrial Area

For each RIAP or area of the facility that generates stormwater discharges associated with industrial activity with a reasonable potential to contaminate stormwater, a prediction of the direction of flow, and an identification of the types of pollutants likely to be present in stormwater discharges associated with industrial activity was completed. The results of this evaluation are provided on the individual RIAP survey forms provided in Appendix E.

7.2 Storm Water Control Measures

The installation implements control measures to meet all applicable permit effluent limits. The categories of control measures include:

1. Minimize exposure
2. Good housekeeping
3. Maintenance
4. Spill prevention and response
5. Erosion and sediment controls
6. Management of runoff
7. Salt piles
8. MSGP sector-specific non-numeric effluent limits
9. Employee training
10. Non-storm water discharges
11. Waste, garbage and floatable debris
12. Dust generation and vehicle tracking of industrial materials

Installation control measures are further described in the Installation Supplement below, along with applicable additional state or local required categories measures.

Installation Supplement – Storm Water Control Measures

7.2.1 Identification of BMPs for Storm Water Pollution Control

The EPA guidance manual, *Stormwater Management for Industrial Activities – Developing Pollution Prevention Plans and Best Management Practices* [hereinafter referred to as the Stormwater Guidance Manual (SWGM)] uses the term "BMPs" for all SWPPP measures, practices, and controls. This plan will use the term BMP in the same manner.

BMPs are measures used to prevent or mitigate pollution from any type of activity. BMPs are a very broad class of measures and may include processes, procedures, schedules of activities, prohibitions on practices, and other management practices to prevent or reduce water pollution. They may be inexpensive or costly. BMPs can be anything that prevents toxic, hazardous, or nuisance substances from entering stormwater.

This section is divided into two subsections related to the type of area where the BMPs are applied. The first subsection describes General BMPs that apply to many areas of the installation, such as good housekeeping, preventative maintenance, visual inspections, spill prevention and response, and employee training. The second subsection discusses site-specific BMPs that apply to each RIAP that could contaminate stormwater.

7.2.2 General BMPs

There are numerous BMPs that apply generally to the installation as a whole. Some of these General BMPs are implemented at an installation level, while most are implemented at a shop level. This subsection will describe the General BMPs used at Westover ARB and the various components and activities associated with each General BMP.

7.2.2.1 General BMPs Implemented at the Installation Level

The following General BMPs are implemented across the installation and are not the responsibility of the individual RIAPs. These BMPs provide overall practices that can limit the amount of pollutants in the storm water discharges from Westover ARB.

Eliminate Unauthorized Non-Storm Water Discharges

Non-storm water discharges to surface waters of the State that are not listed in Section 1.1.3 of the permit and Table 7-2 of this SWPPP are not authorized by the MSGP and must be terminated. All outfalls have been evaluated through visual inspection for the presence of non-stormwater discharges and continue to be evaluated for the presence of non-storm water discharges on a quarterly basis. Allowable non-storm water discharges that occur on Westover ARB and the results of a study to identify illicit connections are addressed in Section 7.1, Potential Pollution Sources.

If non-storm water discharges or illicit connections are identified, the illicit connection should either be connected to the sanitary sewer or the non-storm water discharge should be stopped by blocking or disconnecting the floor drain if it is not needed. Where the connection is needed for storm water drainage, and where there is occasional transfer of hazardous materials, the drain can be temporarily covered or blocked with a mat or plug. Alternatively, the operation generating the wastewater can be moved to an area that drains to the sanitary sewer.

Divert, Infiltrate, Reuse, or Contain Storm Water Runoff *(Section 2.1.2.6)*

BMPs to divert, infiltrate, reuse, or otherwise reduce pollutants in stormwater discharges have been installed at Westover ARB and include storm water detention and/or retention structures, concrete secondary containment structures, and open vegetated swales and natural depressions to allow flow attenuation, infiltration of runoff on-site. The Site Map in Appendix C shows locations of structural BMPs such as catchment basins, oil/water separators, culverts, and secondary containment structures for tanks. Structural BMPs are inspected for proper operation on a quarterly basis.

Security Procedures

Strong security measures can be an important facet of the SWPPP by preventing an accidental or intentional release of hazardous materials to storm water as a result of vandalism, theft, sabotage, or other improper use of facility property. Westover ARB has a comprehensive security system consisting of the following:

- High fencing around the perimeter;
- An on-site security force that patrols the installation;
- Requirements for credentials for visitors; and
- Extensive lighting on buildings and poles.

7.2.2.2 BMPs Implemented at the Shop Level

The following General BMPs are implemented at the shop level. The narrative below provides details on the procedures for each General BMP and the RIAP Inspection Forms in Appendix E identify the General BMPs applicable to each industrial area.

Good Housekeeping *(Part 2.1.2.2)*

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step towards preventing pollution in storm water from industrial sites simply involves using good common sense to improve the facility's basic housekeeping methods. Poor housekeeping can result in more waste being generated than necessary and an increased potential for storm water contamination. Well-maintained and orderly material and chemical storage areas will reduce the possibility of storm water mixing with pollutants.

Currently, good housekeeping practices at Westover ARB are a common-sense BMP that are left up to the individual RIAP managers. At most RIAPs, good housekeeping practices are adequate and in some cases exceptional. To ensure good housekeeping is maintained at all RIAPs, a specific set of guidelines has been developed for managers to instruct their personnel to follow. The guidelines for good housekeeping practices are shown in Table 7-3.

Table 7-3

Guidelines for Good Housekeeping

- Maintain dry, clean floors and ground surfaces by using brooms, shovels, vacuum cleaners, or cleaning machines at regular intervals.
- Do not hose down floors with water or discharge any wash water to the outside environment at regular intervals.
- Use dry clean-up methods to collect spills, and ensure that spill cleanup procedures are understood by employees.
- Store hazardous waste/material containers in appropriate accumulation areas that have secondary containment.
- Regularly pick up and dispose of garbage and non-hazardous waste material.
- Make sure vehicles, equipment, and machinery are working properly.
- Routinely inspect for leaks or conditions that could lead to discharge of chemicals or contact of storm water with raw materials, intermediate materials, waste materials, or products.
- Remove any accumulated debris (e.g., trash, tree limbs) from catch basins to ensure catch basins continue to function properly.
- Drain fluid from old parts prior to disposal to prevent potential contact of HAZMATs with storm water.
- Provide adequate aisle space to facilitate material transfer and easy access for inspections.
- Store containers, drums, and bags away from direct traffic routes to prevent accidental spills.
- Stack containers according to manufacturers' instructions to avoid damaging the containers from improper weight distribution.
- Store containers inside and on pallets or similar devices whenever possible to prevent corrosion of the containers, which can result when containers come in contact with moisture on the ground.
- Maintain an up-to-date inventory of materials to prevent overstocking and exceeding shelf-lives of materials.
- Assign the responsibility of hazardous material inventory to a limited number of people who are

trained to handle hazardous materials.

- Perform washing, fueling, and maintenance activities of vehicles and equipment inside or in designated areas.

Inspections (*Section 3)*

Visual inspections of equipment and areas at each industrial facility are required to determine if the pollution prevention BMPs are adequate to protect storm water from release of contaminants. Westover ARB conducts a series of preventive maintenance, quarterly visual, and annual comprehensive site inspections. A description of the routine inspections is presented in Section 7.4. Logs of each inspection are used to guide the inspection process and keep a record of the findings of the inspection.

Preventative Maintenance (*Section 2.1.2.3)*

A description of the Preventative Maintenance Program applicable to storm water pollution prevention at Westover ARB is presented in Section 7.4 of this SWPPP.

Spill Prevention and Response *(Section 2.1.2.4)*

Spills and leaks are the largest industrial source of storm water pollutants and, in most cases, are avoidable. Establishing standard operating procedures, such as safety and spill prevention procedures, along with proper employee training can reduce these accidental releases. Avoiding spills and leaks is preferable to cleaning them up after they occur, not only from an environmental standpoint, but because spills cause increased operating costs and lower productivity. Material handling procedures, storage requirements, secondary containment, and equipment are designed to minimize spills and leaks at RIAPs. Westover ARB has a base-wide Spill Prevention & Countermeasure Control (SPCC) Plan.

Drip pans are used to catch drips from valves, pipes, etc. so that the materials or chemicals can be cleaned up easily or recycled before they can contaminate stormwater. Although leaks and drips should be repaired and eliminated as part of a preventive maintenance program, drip pans can provide a temporary solution where repair or replacement must be delayed. In addition, drip pans can be an added safeguard when they are positioned beneath areas where leaks and drips may occur.

Minimize Exposure *(Section 2.1.2.1)*

Exposure of loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations to rain, snow, snowmelt, and runoff is minimized by:

- Locating industrial materials and activities inside or by protecting with storm resistant coverings.
- Using grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas.
- Locate materials, equipment, and activities so that leaks are contained.
- Clean up spills and leaks promptly using dry methods.
- Store leaky vehicles and equipment indoors, or, if stored outdoors, use drip pans and absorbents.
- Use spill/overflow protection equipment.
- Drain fluids from equipment and vehicles prior to on-site storage for disposal.
- Perform all cleaning operations indoors, under cover, or in bermed areas to prevent runoff and run-on, capture overspray, and ensure all washwater drains to a proper collection system (i.e., not storm water drainage system).

Training and Education

As discussed further in Section 5.0 of this SWPPP, Westover ARB has implemented a storm water training program to teach personnel the components and goals of the SWPPP.

Waste, Garbage and Floatable Debris *(Section 2.1.2.2)*

The Base Transfer Station is manned and the operator ensures that all drop-offs of waste and recyclables are placed into the correct containers and debris does not become mobilized.

Litter and other solid waste outside of a designated collection container is routinely picked up and placed in the appropriate container for disposal or recycling.

Minimize Generation of Dust and Off-Site Tracking of Materials *(Section 2.1.2.10)*

BMPs to minimize generation of dust and off-site tracking of raw, final or waste materials are implemented throughout the installation. Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas by covering outdoor storage/transfer areas with a permanent roof or temporary tarp or canopy to help prevent contact with storm water and by directing flows from vehicle and aircraft washing to a sanitary sewer. In addition, construction projects are required to implement BMPs to minimize generation of dust and off-site tracking of materials as described further below under BMPs for Construction Projects.

Erosion and Sediment Controls *(Section 2.1.2.5)*

Exposed areas must be stabilized and runoff controlled using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. BMPs for controlling sediment-laden runoff from construction sites or other areas with high erosion potential are presented below under Site-Specific BMPs for Construction Projects and Areas with High Soil Erosion Potential.

Prohibition of Industrial Activities Outside of Designated Areas

Certain activities related to vehicle, aircraft, and equipment maintenance must not be conducted outside areas designated for such activities. The areas that are designated for such activities must be designed and managed to properly accommodate these activities without contributing to storm water contamination. These activities include the following:

- Aircraft deicing
- Vehicle, aircraft, and equipment washing
- Vehicle, aircraft, and equipment fueling
- Vehicle, aircraft, and equipment maintenance and painting
- Storage of chemicals outside.

The prohibition of these activities outside of designated areas will be communicated to installation personnel through respective Shop supervisors. Furthermore, the visual inspections will look for evidence of these activities in non-designated areas.

Secondary Containment

Secondary containment will generally consist of dikes or curbing around material storage and/or loading/unloading areas. The secondary containment dikes should be impervious and be capable of holding the entire contents of the largest single tank or container plus sufficient freeboard to allow for precipitation. The Fuels Operation Contractor conducts routine inspection of dikes for jet fuel above ground storage tanks.

Another form of secondary containment is a double-walled aboveground storage tank (AST). The outer wall is constructed of steel or concrete and provides secondary containment for the inner tank and protects it from accidental damage. Double-walled tanks can be used in place of the traditional AST inside a secondary containment dike.

7.2.3 Site-Specific BMPs

Site-Specific BMPs are designed to prevent contaminants from specific sources from polluting storm water. The site-specific BMPs presented below may apply to individual or several individual RIAPs. For example, integrity testing is required for RIAPs with aboveground storage tanks subject to 40 CFR 112. Site-specific BMPs applicable to each RIAP are described in the RIAP forms maintained in Appendix E.

Oil/Water Separators

OWSs are control devices used to remove oil, grease, fuel, and other floatable materials from storm water. These materials are the most common and likely materials that could contaminate storm water at Westover ARB. OWSs can act as treatment devices removing oils and fuels from intermittent flows of storm water, or they can act as diversion devices for spills of oils and fuels. The sizing and design of these units and the storage capacity for separated materials will determine to what extent the units can remove contaminants. All OWSs at Westover ARB act as structural BMPs by minimizing oil discharges to storm water. Each OWS is inspected at least annually to ensure proper function and to measure the oil and sediment/sludge that has accumulated in the unit. OWSs are cleaned as needed based on these inspections.

Integrity Testing

Integrity testing of tanks, piping, and valves occurs regularly. ASTs with adequate secondary containment are integrity tested in accordance with 40 CFR 112 and Westover ARB HAZMAT Plan.

Run-on Prevention

One of the more effective mechanisms to preventing storm water pollution is to minimize the amount of storm water that can contact areas of industrial activity. The civilian gas station fueling area is located at a high point to prevent run-on (see civilian gas station RIAP Form in Appendix).

Salt Storage *(Section 2.1.2.7)*

Westover ARB stores salt for deicing purposes in an enclosed building to minimize exposure to precipitation, except during active operations to add or remove materials from the pile. The salt storage yard is listed as a RIAP at Building 3405. Good housekeeping measures are in place to ensure that salt spilled during transfer is returned to the covered storage pile.

Construction Projects and Areas with High Soil Erosion Potential *(Section 1.1.4.2)*

Storm water discharges associated with construction activity disturbing one acre or more, or that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more, are not eligible for coverage under the MSGP. Instead, these projects require coverage under a Construction General Storm Water Permit. Storm water pollution prevention practices for smaller projects are implemented at the installation-level and may require control measures to prevent sediment or erosion from the site.

Aircraft and Runway Deicing *(Sections 8.S.4.1.6 and 8.S.4.1.7)*

The application of deicing fluids to aircraft during conditions of snow and freezing rain generates runoff laden with deicing fluids. Deicing season at Westover ARB typically runs from December to April each year. In rare cases, deicing can be conducted outside these months based on weather conditions. Facilities which conduct deicing/anti-icing operations are required to maintain a record of the types [including the Safety Data Sheets (SDSs)] and monthly quantities of deicing/anti-icing chemicals used.

The aircraft deicing fluid used at Westover ARB is propylene glycol, which is applied in a diluted form, 60/40 percent with water. The deicing runoff is further diluted due to the mixing with precipitation and snowmelt runoff. Westover ARB uses a non-triazole-based propylene glycol, which is less toxic than previous formulations of propylene glycol. During the 2018-2019 deicing season, Westover ARB used 26,169 gallons of glycol. Aircraft deicer amounts are provided by AMXS.

The aprons, taxiways, and runways at Westover ARB are no longer deiced/anti-iced with urea pellets during the winter. Westover ARB now employs the use of potassium acetate (liquid) and sodium acetate (granular) for deicing operations. Potassium acetate is a liquid deicer that is used to prevent ice formation on the surface of the aprons, taxiways, and runways. It has a lower oxygen demand than urea, and is non-toxic. During the 2018-2019 deicing season, approximately 42 tons of sodium acetate (granular) and 20,000 gallons of potassium acetate were used. Westover Contractors, Roads & Grounds crew provides monthly deicing and anti-icing use records.

The primary environmental concern regarding aircraft deicing is the effect that deicing runoff has on surface water quality. Deicing compounds, because of their organic nature, exert a high BOD on receiving streams, which depletes oxygen levels necessary to sustain aquatic life. In addition, these deicing compounds can also be toxic to aquatic organisms.

The minimization and control of deicing fluid runoff is an important facet of the SWPPP. Westover ARB has constructed a wetlands area to treat deicing runoff through submergent flow of deicing runoff from the drainage basin associated with Outfall 001. Although deicing can be conducted numerous times throughout the winter depending on conditions, deicing is typically conducted at the East Ramp that discharges to Outfalls 001 and 002.

Westover ARB implements several BMPs to reduce storm water contamination from aircraft deicing. These are shown in Table 7-4.

Table 7-4

BMPs for Minimizing Deicing Runoff

- When icing conditions are anticipated, aircraft that are on the flying schedule are moved to the Pull Through Hangar or Fuel Cell, if possible. They are towed out just before flight to negate/minimize deicing requirements.
- Limit non-essential flights during icing conditions, if possible.
- During the months when winter conditions exist, aircraft are placed into a "winter configuration" (flaps & slats retracted, horizontal stab angled up: lessens the accumulation impact of snow & ice).
- To the max extent possible, aircraft launches are scheduled later in the day, thus allowing for natural deicing of the aircraft though radiant energy from the sun and wind.
- Mandated annual refresher training for the deice crews, this ensures that the minimum amount of deicing fluid is used to safely prepare an aircraft for flight or maintenance.
- Deice only those aircraft that require it for flight/maintenance, aircraft are never deiced just to remove accumulation. If the situation permits, partial deicing is accomplished when deemed sufficient to accomplish the maintenance task at hand.
- Use of new GlobeMaster deicing trucks. Features include: boom spray operator position is environmentally enclosed, metered& more accurate spray nozzles, fluid heating capabilities; all these features allow for more effective & efficient aircraft deicing.
- Use a 60/40 percent mixture of propylene glycol and water.
- Conduct monthly visual inspections of deicing areas and deicing equipment, ensures there are not any inadvertent vehicle leaks. Vehicle inspections are conducted all year long, not just during deicing months.

Table 7-5 lists BMPs that Westover ARB uses to reduce stormwater contamination from airfield deicing/anti-icing applications.

Table 7-5

Runway and Apron Deicing/Anti-Icing BMPs

- Only areas necessary to flight operations are deiced using chemical methods, such as runways, taxiways, and flightline aprons.
- Use of weather forecasting to postpone non-essential flight operations to minimize use of deicing chemical application.
- Application of an anti-icing mixture to runway areas helps minimize the amount of deicing chemicals that need to be applied after icing occurs; less chemical is needed to prevent ice formation than it is to remove (melt) ice already there.
- Closely observe chemical usage on chemical application equipment to help prevent over application.
- Train airfield deicing chemical applicators in proper application methods to prevent over use of deicing chemicals.
- Pre-wetting granular deicing chemicals to maximize effectiveness and minimize quantities needed.
- Use of snow brooms and plows to remove ice instead of chemical applications.
- Snow removal is continuous during a storm and accumulated snow is piled away from contact with deicing chemicals.

Aircraft and Vehicle Washing *(Section 8.S.5.3)*

The MSGP prohibits non-stormwater discharges of vehicle and aircraft wash water from entering surface waters. Wash waters contain high concentrations of oil and grease, suspended solids, and detergents that exhibit a high dissolved oxygen demand on receiving waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge. All vehicle and aircraft washing must occur in designated areas. Table 7-6 presents a list of approved wash racks at Westover ARB. These wash racks are piped to the sanitary sewer, have a roof or are located indoors to minimize the amount of precipitation that is allowed to enter the sanitary sewer system.

Table 7-6

Approved Wash Racks at WARB

BUILDING NUMBER OR LOCATION	DESCRIPTION OF WASH RACK OPERATION
1530 – Vehicle Wash Rack	Wash rack for vehicles. Floor drains inside building discharge to an oil/water separator and sanitary sewer.
3101 – Army Reserves Center (AMSA Vehicle Maintenance)	Wash rack for vehicles. Trench drains inside building discharge to an oil/water separator and sanitary sewer.
3505 – USMC Reserves Training Center	Wash rack opened later in 2018. Concrete floors slope to a central drain and a canopy prevents most stormwater infiltration. Drains only to sanitary sewer.
7040 – Pull-Through Hangar, Corrosion Control	Wash rack for aircraft. Trench drains inside building discharge to an oil/water separator where the water is tested and released to sanitary sewer.
7071 – Hangar 9 – AGE (South) and AMXS (North)	Wash rack for ground equipment. Floor and trench drains inside building discharge to an oil/water separator and sanitary sewer.
7073 – Hangar 5 – Roads and Grounds Shops	Hand-washing of vehicles and equipment. Floor drains inside building discharge to an oil/water separator and sanitary sewer.
7084 – Fire Department	Wash rack for fire trucks. Floor drains inside wash rack are plumbed to an oil/water separator and sanitary sewer.

7.2.4 Implementing Storm Water BMPs *(Part 2.1.2.3)*

Westover ARB has been implementing SWPPP BMPs since receiving coverage under the NPDES Storm Water MSGP in January 2001. Installation personnel has implemented many of the suggested BMPs recommended for pollution prevention, are aware of preventative maintenance practices, and promptly notify the appropriate personnel when a SWPPP concern needs to be addressed.

The general and site-specific BMPs listed in Section 7.2 of this SWPPP are implemented routinely at Westover ARB. As discussed above, some of the general BMPs are implemented base-wide while other general and site-specific BMPs are implemented at the shop level. The RIAP Inspection Forms in Appendix E identify the BMPs applicable to individual shops at Westover ARB.

7.3 Schedules and Procedures for Monitoring

The installation implement procedures for conducting the following types of monitoring, as necessary:

- Benchmark monitoring
- Effluent limitations guidelines monitoring
- State or Tribal specific monitoring
- Impaired waters monitoring
- Other monitoring as required

At a minimum, procedures describe:

- Locations where samples are collected
- Pollutant parameters sampled
- Monitoring schedules
- Numeric limits, where applicable
- Sample collection and analysis

Monitoring procedures are documented in the installation supplement below.

Installation Supplement – Schedules and Procedures for Monitoring

7.3.1 Monitoring Requirements (Part 6) – Including Impaired Waters Monitoring

All monitoring must be made:

- Of a sample in a clean, colorless glass or plastic container, and examined in a well-lit area;
- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and it must be documented why it was not possible to take the sample within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measureable discharge from the base; and,
- For storm events, on discharges that occur at least 72 hours from the previous discharge. The 72-hour storm interval does not apply if you document that less than a 72-hour interval is representative for local storm events during the sampling period.

All required monitoring must be conducted in accordance with the procedures described in Appendix B, Subsection B.10 of the MSGP. If more than one type of monitoring for the same pollutant at the same outfall applies, a single sample may be used to satisfy both monitoring requirements.

Quarterly Visual Monitoring *(Part 3.2)*

The MSGP requires quarterly visual monitoring in which storm water samples are collected from each outfall during a discharge event in order to assess the visual aspects of the storm water. Samples are not required to be collected consistent with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the storm water discharge.

Once collected, samples must be visually inspected for the following water quality characteristics:

- Color,
- Odor,
- Clarity,

- Floating solids,
- Settled solids,
- Suspended solids,
- Foam,
- Oil sheen, and
- Other obvious indicators of storm water pollution.

Whenever the visual assessment shows evidence of storm water pollution, procedures in Part 4 of the MSGP must be initiated.

The results of the visual assessments must be documented and maintained onsite with the SWPPP. Visual assessment findings are not required to be submitted to the EPA, unless specifically requested. However, the findings do need to be summarized in the annual report, per Part 7.5 of the MSGP.

To meet the requirement for quarterly visual assessments, Westover ARB collects samples from the following Outfalls on a quarterly basis during qualifying storm events: Outfall 001, Outfall 002, Outfall 003, Outfall 004, Outfall 006, Outfall 007, Outfall 009a, and Outfall 011. Outfall 009a is located slightly upstream of Outfall 009 (see Site Map in Appendix C) and is representative of Outfall 009 because the area between Outfall 009 and Outfall 009a is all wooded and no industrial activities take place between the two points. Outfall 009a is used instead of Outfall 009 because the dirt road and wooded path to Outfall 009 are difficult to pass during rain events.

Quarterly Benchmark Monitoring *(Part 6.2.1)*

For Sector S, Air Transportation Facilities, benchmark monitoring does not apply until the facility discharges at least 100,000 gallons of pure glycol in glycol-based deicing fluids in a year. At the peak , Westover ARB used a little over 50,000 gallons of pure glycol. In the event that future deicing operations at Westover ARB trigger the requirement for benchmark monitoring, the benchmark monitoring requirements for Sector S are summarized below in Table 7-7.

Table 7-7

Sector S Benchmark Monitoring Requirements

Sector S	Parameter	Benchmark Monitoring Concentration
For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis, monitor the first four parameters in ONLY those outfalls that collect runoff from areas where deicing activities occur (SIC 4512-4581).	Biochemical Oxygen Demand (BOD_5) [1]	30 mg/L
	Chemical Oxygen Demand (COD) [1]	120 mg/L
	Ammonia[1]	2.14 mg/L
	pH[1]	6.0-9.0

[1]These are deicing-related parameters. Collect the four benchmark samples, and any required follow-up benchmark samples, during the timeframe defined in Part 8.S.4.2 of the MSGP when deicing activities are occurring.

Effluent Limitations Monitoring *(Part 6.2.2 and 8.S.8)*

As an existing airport, Westover ARB is required to certify annually during development of the annual report that it does not use pavement deicers containing urea. If urea-based deicers were being used on runway, apron, or taxiway surfaces, Westover ARB would be required to meet the effluent limitation of 14.7 milligrams per liter (mg/l) of ammonia expressed as nitrogen. Westover does NOT use urea.

Because Westover ARB is an existing airport instead of a new airport, no effluent limitations for aircraft deicing are applicable.

Impaired Waters Monitoring *(Part 6.2.4)*

According to the Massachusetts Year 2014 Integrated List of Waters, Stony Brook is impaired for non-native aquatic plants, *E. coli* bacteria, and turbidity. Based on these impairments, EPA requires TMDLs from the States, however the State has not yet established them for Stony Brook. Stony Brook is the receiving water for Outfall 011 on the north side of Westover ARB.

Based on the inclusion of Stony Brook on the impaired waters list, Westover ARB must take one sample annually from the discharge at Outfall 011 for *E. coli* and total suspended solids (TSS). If the water quality standards are exceeded, Westover ARB must initiate corrective actions in accordance with Section 4.1 of the MSGP. Additional discussion on impaired waters monitoring is provided in Section 1.3.3 of this SWPPP.

Conduct monitoring beginning the first full quarter following September 2, 2015. Monitoring must be conducted for all pollutants for which the water body is impaired and for which a standard analytical method exists once per year at each outfall (except substantially identical outfalls) discharging storm water to impaired waters without an EPA-approved or established TMDL. If the water is impaired for turbidity, the sample must be analyzed for TSS instead of turbidity.

Monitoring results are provided in Appendix H. These results must be compared to the water quality standards for the Connecticut River since Stony Brook is within the Connecticut River watershed and discharges to the river approximately two miles west of the base. According to Table 6 in 314 Code of Massachusetts Regulations (CMR) 4.06, the Connecticut River is classified as a Class B Surface Water. According to 314 CMR 4.05, Class B Inland Surface Waters must meet the following criteria for bacteria and turbidity:

- The geometric mean of all *E. coli* samples taken within the most recent six months shall not exceed 126 colonies per 100 milliliter (ml) based on a minimum of five samples, and no single sample shall exceed 235 colonies per 100 ml.
- Be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

Sampling during 2008 MSGP

During the first sampling event in April 2009 the TSS levels were found to be either non-detect or below reportable limits at the regulated outfalls. Pursuant to Part 6.2.4.2 of the 2008 MSGP, the Base is no longer required to monitor TSS during the remainder of the permit coverage period. The Base conducted E. coli. monitoring from 2009 until 2012 at Outfalls 005, 011, 011a. During the 2013 CSCE, EA Engineering conducted a review of available sampling data collected by Westover ARB and historical monitoring data from Stony Brook (See Appendix N). It was determined that the Base was not a significant source of E. coli and E. coli colonies present in the outfalls sampled was under the primary use recreational contact limit of 126 colonies per 100ml and below the calculated geometric mean of 290

cfu/100ml presented in the Connecticut River Watershed 2003 WQ Assessment Report (CONN 2013). The findings and determination was submitted to the EPA with the 2013 Discharge Monitoring Report (DMR) which can be found in the Environmental Engineering Office at the Base. Based on the 30 July 2013 results of this assessment, EA Engineering, Science, and Technology, Inc. concluded that the most likely source of low levels of *E. coli* in the outfall runoff was due to naturally occurring background sources, such as raccoon, birds, beaver, squirrels, and fox and that Westover AFB was actively implementing BMPs to control *E. coli* sources from its industrial activities to the maximum extent practicable. It is unlikely that the industrial activities at Westover ARB directly result in *E. coli* contamination due to the types of activities conducted at Westover ARB (aircraft and vehicle maintenance). Besides animal sources on the installation, high levels of *E. coli* in Stony Brook could be "run-on" entering from off-base sources such as Wade Lake.

Sampling for E. coli must be conducted for each new issuance of the MSGP.

Sampling during 2015 MSGP
Samples collected in 2015 were below detection limits for TSS, and *E. coli* concentrations of 180 and 200 col/100ml were slightly below the water quality standard of 235 colonies/100 ml.

Sampling conducted in 2016 revealed TSS to be non-detect, and E. coli to be 20 col/100ml which is below the water quality standard of 235 colonies/100 ml.

Analytical sampling from Outfall 011 conducted in 2018 revealed TSS to be non-detect and within the water quality standard.

Other monitoring as required by EPA *(Part 6.2.5)*

No additional monitoring has been requested by EPA at this time.

7.3.2 Reporting (Sections 7.4 and 7.5)

Westover ARB is subject to two different types of reporting requirements – monitoring reporting and annual reporting.

Monitoring Reporting *(Section 7.4)*

The results of all analytical monitoring performed to meet the requirements of the MSGP must be submitted to the EPA within 30 days of receiving the results. The only analytical monitoring Westover ARB is required to perform is annual impaired water monitoring. As a result, within 30 days of receiving the analytical results for *E. coli* and TSS from the impaired water sampling event, Westover ARB must submit the results electronically on DISCHARGE MONITORING REPORT (DMR). Additionally, a waiver from electronic submittals is only good for a one-time submittal. Another waiver must be requested each time Westover ARB cannot submit electronically.

Annual Report *(Section 7.5)*

Westover ARB must submit an electronic Annual Report to EPA by 30 January of each year of permit coverage containing information generated from the past calendar year. Copies of most recent Annual Reports are provided in Appendix I.

7.4 Inspections

The installation implements procedures for conducting the following types of inspections, as necessary:

- Routine facility inspections
- Quarterly visual assessment of storm water discharges
- Comprehensive site inspections

At a minimum, procedures include:

- Person(s) or position(s) responsible for inspection
- Schedules for conducting inspections
- Specific items to be covered by the inspection

All other inspections are conducted IAW AFI 90-201, *Air Force Inspection System* and the Commander's Self Inspection Program. Inspection procedures are documented in the Installation Supplement below.

Installation Supplement – Inspections

Evaluation of Stormwater Pollution Prevention Procedures

The overall effectiveness of the storm water program is evaluated through a program of storm water monitoring, accurate record keeping, routine industrial area point inspections, and any voluntary inspections conducted by contractors hired by the Air Force. If it is determined that the SWPPP is not effectively maintaining the quality of the storm water leaving Westover ARB, the plan will be modified to correct these inadequacies.

Preventative Maintenance Inspections (*Sections 2.1.2.3, 3.1, and 8.S.6*)

In conjunction with the maintenance program discussed in Section 7.2.2.2 of this SWPPP, Westover ARB practices preventive maintenance at many levels to keep equipment and systems functioning normally. Preventive maintenance involves the regular inspection, testing, and maintenance of storm water management devices (e.g., cleaning OWSs, catch basins), equipment, and operational systems. These inspections should uncover conditions such as cracks or slow leaks that could cause breakdowns or failures that result in discharges of chemicals to storm sewers and surface waters. Currently, Westover ARB has an extensive preventive maintenance program. It involves inspections, inventories, and reports at various industrial areas at the installation (e.g., hazardous waste accumulation points, the Hazmart, and the Bulk Fuels Complex).

Although the preventive maintenance program described below was not necessarily developed with storm water pollution prevention as the purpose, it does an excellent job of addressing potential storm water pollution problems.

Per Facilities Ops maintenance program:

- Inspect OWSs quarterly for buildup of oils, fuels, and sediments;
- If the inspection finds cleaning of certain separators is needed, appropriate steps will be taken to clean the separators.

Per Air Force Technical Orders:

- Inspect pumps and piping for leaks or deterioration on a daily, weekly, and monthly basis at the Bulk Fuels Complex;
- Replace pump seals periodically to prevent sudden leaks.

Per Fuels Operations program:

- Perform monthly visual inspections of fuel tanks and piping to prevent ruptures and leaking
- Inspect all secondary containment structures for cracks, breaks, holes, and deterioration.

Per Hazardous Waste management program:

- Conduct regular inspections of hazardous waste accumulation areas;
- Document weekly inspections of the central hazardous waste accumulation area.

Stormwater Routine Facility Inspections (*Sections 3.1 and 8.S.6*)

Per Permit, Westover ARB must conduct documented facility inspections quarterly to assess the effectiveness of the SWPPP and to ensure that areas with exposed pollutant sources are included in the SWPPP.

One of the objectives of the SWPPP is to minimize the risk that industrial areas (i.e., RIAPs) will contribute to storm water pollution. Routine inspections will be used not only to ensure that the risk factors associated with each industrial area are maintained at a low level through the use of BMPs, but that other aspects of the SWPPP, such as the SWPPT and annual training, continue to be maintained.

When funding is available, one of the quarterly inspections now called an Air Force Voluntary 3rd Party Evaluation is conducted with help from a third-party to help identify issues and share best practices implemented at other organizations. These evaluations are not a permit requirement; it is above and beyond the Permit's required 'routine facility inspections'. When funding is available, Westover conducts these evaluations as a voluntary self-audit and will result in recommendations for continued and improved compliance with the stormwater permit. Past year evaluation reports are maintained in Appendix J of this SWPPP.

Inspection Process

Inspections must be performed by personnel 1) who are knowledgeable in the principles and practices of industrial storm water controls and pollution prevention, and 2) who possess the education and ability to assess conditions at the industrial facility that could impact storm water quality, and assess the effectiveness of storm water controls selected and installed to meet the requirements of the permit. At least one member of the SWPPT must participate in the inspections.

At least one quarterly inspection each year must take place during a storm event. When an inspection is occurring during a storm water event or discharge, control measures implemented to comply with effluent limits must be observed to ensure they are functioning correctly. Discharge points must also be observed during storm conditions. If such discharge locations are inaccessible, nearby downstream locations must be inspected.

Additionally, visual inspections of deicing areas must be conducted once per month during deicing/anti-icing season (typically December through April). If deicing occurs before or after this period, the inspections will be expanded to include all months during which deicing chemicals may be used.

Inspection Report

Copies of completed annual Air Force Voluntary 3rd Party Evaluation reports are retained in Appendix J of the SWPPP while other quarterly and monthly inspection reports are maintained by the Water Program Manager for least five (5) years from the date permit coverage expires or is terminated.

7.5 Documentation to Support Eligibility Considerations Under Other Laws

Where applicable, the installation maintains documentation supporting determination of eligibility under other federal laws (Endangered and Threatened Species and Critical Habitat Protection, Historic Properties Preservation and/or NEPA) or host nation laws separately from this SWPPP. Such documentation is available through the References section or as appendices below.

Installation Supplement – Documentation to Support Eligibility

Threatened and Endangered Species *(Section 1.1.4.5)*
The MSGP requires Westover ARB to certify eligibility under this permit by ensuring that the storm water discharges, allowable non-storm water discharges, and discharge-related activities are not likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the Endangered Species Act. A certification statement and county-species list must be included in the SWPPP, along with supporting documentation on the eligibility determination.

Table 7-8 summarizes the county-specific list of protected species. The species listed in this table have not been found at Westover ARB.

Table 7-8

Threatened and Endangered County Species List for Hampden County, MA			
Group Name	**Inverse Name**	**Scientific Name**	**Status**
Plants	Pogonia, Small Whorled	*Isotria medeoloides*	Threatened
Mammals	Northern Long-Eared Bat	*Myotis septentrionalis*	Threatened

Source: Environmental Conservation Online System. (n.d.). Retrieved March 1, 2019, from https://ecos.fws.gov/ecp/

The Westover ARB Fish and Wildlife/Threatened and Endangered (F&W/T&E) Species Management Plan (SEA 1999) contains specific information regarding the threatened and endangered species in the geographic area of Westover ARB. The U.S. Fish and Wildlife Service (USFWS) and the Massachusetts Natural History and Endangered Species Program (MNHESP) were contacted during development of the F&W/T&E Species Management Plan. The MNHESP completed several surveys in 1995 to confirm the presence or absence of federally-listed endangered, threatened, or candidate plant and animal species at Westover ARB. No federally listed plant or animal species were identified as inhabiting Westover ARB during the surveys.

A bat acoustic study, which included the Northern Long-eared Bat, was conducted by University of Montana at Westover ARB in June 2017. The study found no presence of the Northern Long-eared Bat at Westover ARB. Subsequently, Westover ARB processed a Streamlined Consultation form with the US Fish and Wildlife Service.

Westover ARB consults with both the US Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife on the Integrated Natural Resources Management Plan which covers both Wetland Protection and the Management of Threatened and Endangered Species and Habitats.

Criterion A of MSGP has been satisfied, which certifies that, "…No endangered or threatened species or critical habitats are in the proximity to the facility or the point where authorized discharges reach the receiving waters…"

National Historic Places Protection Certification *(Section 1.1.4.6)*

The MSGP requires Westover ARB to certify eligibility under this permit by ensuring that the storm water discharges, allowable non-storm water discharges, and discharge-related activities are not likely to affect a property that is either listed or eligible for listing on the National Register of Historic Places. A certification statement must be included in the SWPPP.

No facilities at Westover ARB are listed on the National Register Information System. According to Environmental Engineering personnel at Westover ARB, no facilities affected by storm water discharges or BMPs are eligible or are planned for listing on the National Register of Historic Places in the near future. Therefore, Criterion A of MSGP has been satisfied, which certifies that, "…the storm water discharges, allowable non-storm water discharges, and discharge-related activities do not affect a property that is listed or is eligible for listing on the National Register of Historic Places as maintained by the Secretary of the Interior…".

8.0 REFERENCES

Standard References
(Applicable to all AF Installations)

- Federal Water Pollution Control Act (Clean Water Act)
- AFI 32-1067, *Water and Fuel Systems*
- AFI 32-1002, *Snow and Ice Control*
- AFI 32-7001, *Environmental Management*
- AFI 90-201, *Air force Inspections System*
- Water Quality Program Management Playbook
- AFLOA Water Quality Legal and Other Requirements
- eDASH Water Quality Program Page
- eDASH Training Matrix
- ADLS
- EASI
- Water Enterprise Tracker

Installation References

Westover Spill Prevention and Countermeasure Control (SPCC) Plan

-

9.0 ACRONYMS

Standard Acronyms
(Applicable to all AF Installations)

- eDASH Acronym Library
- Water Quality Playbook Acronym Section
- U.S. EPA Terms and Acronyms

Installation Acronyms

- **AECOM –** AECOM Technical Services, Inc.
- **AFRC –** Air Force Reserve Command
- **ARB –** Air Reserve Base
- **AW –** Airlift Wing
- **CMR –** Code of Massachusetts Regulations
- **EA** – EA Engineering, Science, & Technology, Inc.
- **MNHESP** – Massachusetts Natural History and Endangered Species Program
- **NeT** – NPDES eReporting Tool
- **SWGM** – Storm Water Guidance Manual
- **USMC** – United States Marine Corps
- **WMDC** – Westover Metropolitan Development Corporation

10.0 DEFINITIONS

Standard Definitions
(Applicable to all AF Installations)

- Water Quality Playbook Definition Section

Installation Definitions

- Not applicable.

11.0 INSTALLATION – SPECIFIC CONTENT

Installation-specific content is provided in Sections 1.0 through 7.0 of this SWPPP.

APPENDICES

Appendix A: Storm Water Pollution Prevention Team

Storm Water Pollution Prevention Team Membership

Job Title	Responsibilities
SWPPP Team Chair Person	• Coordinates membership to the SWPPP team with representatives of the ESOHC. Ensures the team meets at least annually to discuss issues pertinent to the prevention of storm water pollution. • Ensures that Westover ARB complies with all EPA mandates associated with SWPPP, including filing appropriate notices-of-intent or termination. In addition, the SWPPP team chairperson files all necessary reporting documents to the state. • Ensures that an annual storm water training program for required personnel is developed and implemented. • Requests funding to implement base-wide or site-specific BMPs. This effort may include the preparation of preliminary cost estimates or military construction cost documents. • Ensures that quarterly evaluations of the SWPPP to determine its effectiveness are performed. The SWPPP team chairperson will ensure that recommendations arising from these evaluations are incorporated into the SWPPP and are implemented. • Provides a report to the full ESOHC of the activities of the SWPPP team and the status of SWPPP at Westover ARB. • Maintains records of documents pertaining to SWPPP at Westover ARB. • Acknowledges that a database of significant spills and leaks is maintained. • Reviews subordinate management plans for incorporation of storm water pollution prevention strategies for applicable tenant operations.
ESOHC Chairperson	• Is provided with input on the implementation of storm water pollution prevention activities through the SWPPP team chairperson. • Annually review and recommend changes to the SWPPP. • Ensure compliance with MSGP and regulations, and annually review the status of all environmental permits, including the MSGP for storm water discharges associated with industrial activity.
Shop and Tenant Representatives on the SWPPP Team	• Attend and participate in meetings of the SWPPP team. • Implement all aspects of the SWPPP. This includes ensuring that all structural BMPs (e.g., secondary containment) are functioning properly and are adequately maintained. • Ensures, along with the SWPPP Team that no activity conducted by the 439 AW, Army Reserves/Army National Guard, the Marine Corps, or any other organization at Westover ARB leads to the degradation of storm water quality. • Identify specific individuals as members to the Team responsible for: o SWPPP development, implementation, maintenance, and revision o Inspections of designated equipment and areas o Completing and maintaining records of inspections o Appoint an individual representative from Aircraft Operations, Roads & Grounds, Vehicle Maintenance, and POL as applicable o Ensure that routine (at least quarterly) inspections are conducted by qualified personnel at each facility or work area (i.e., facility manager or designated pollution prevention coordinator) and repair or report to 439 MSG/CEV any problems identified. • Coordinate storm water pollution prevention BMPs for projects that involve multiple organizations, as applicable, such as aircraft and runway deicing. • Provide and maintain the necessary storm water pollution prevention controls as required by the Permit and this SWPPP.

Job Title	Responsibilities
	• Ensure that new and existing employees receive the SWPPP training course, as well as the annual refresher training. • Inform the SWPPP team chairperson of any new activity that may adversely affect the quality of storm water in their operations. This may include construction activities that disturb soil, storage of material in an area inadequately served by stormwater controls, or the initiation of an activity that may cause a discharge to the storm water system.
HQ AFRC/CEV and AFCEC	• Provide Westover ARB with numerous resources that are necessary to implement the SWPPP program. • Provide internal and external expertise to assist Westover ARB in complying with applicable regulations and AFIs. • Provide funding for SWPPP projects and contractor support for additional manpower as needed.

Appendix B: Significant Spills

DATE	LOCATION	SPILL DESCRIPTION	PREVENTATIVE ACTIONS
2/19/19	East Ramp – Near Bldgs. 7073 and 7075	75 gallons of diesel fuel spilled from the fuel tank of a snow plow after the fuel system was damaged during snow removal activities.	Speedi-dry absorbent was placed over the spill area to contain the released fuel. Four 55-gallon drums of spent absorbents. Fuel was pumped from two impacted catch basins and the oil water separator which services the area. 623 gallons of oily water were transported, under uniform hazardous waste manifest, to Clean Water of NY in Staten Island, NY for disposal. The four drums of solids were transported, under uniform hazardous waste manifest, to Veolia ES Technical Solutions in W Carrollton, OH, for proper disposal. On February 25, 2019, Jewel Environmental Corp. personnel conducted a site inspection of the release area. Very slight staining remained on the East Ramp near building 7073. Other than slight staining no overt evidence of remaining diesel fuel remained. According to response personnel, all fuel was contained to the catch basin system and captured during remediation.
5/27/16	Bldg. 7705	25 gallons of Jet A Jet fuel was released. A clogged strainer in the product recovery tank (PRT) caused fuel to spill out of filling pipe of the PRT during a hydrant tank to tank transfer.	Personnel immediately shut down the operation (Hit emergency button to shut off pumps.); Fire Dept contained fuel to location of tank whereby no fuel entered storm/sanitary sewers. MassDEP approved excavation and proper disposal of soil.
2/12/14	Bldg. 7701 – Fuel Pit	10 gallons of fuel were released into a fuel pit during maintenance activities being performed on the pipe.	The spill was contained, notifications were made, and a contractor was brought onsite to clean up the spill and remove any contaminated soils from the pit. The incident is closed.

Source: WARB 2019

Appendix C: Site Maps

Appendix D: Training Log

Organization	Training Date
Maintenance Group	- Dates maintained at MXG Office-
BOS Contractor	- Dates maintained at Contractor's Office -

Appendix E: Completed Westover ARB RIAP Survey Forms

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
1301	HAZMAT Pharmacy/Hazardous Waste Storage

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Various-sized containers of hazardous materials (received at the loading dock). Hazardous materials stored in berm controlled rooms, with the exception of the Pharmacy Storage – BOS Contractor room.
- 55-gallon drums of oil and high expansion foam were stored in the Pharmacy Storage – BOS Contractor room.
- Battery room has virgin petroleum, oils, and lubricants (POLs) on spill pallets and a berm at the door.

Likelihood of Storm Water Contamination:

- Loading dock is not located near a storm sewer inlet.
- All hazardous materials are stored inside.
- The storage areas are bermed and all floor drains have been plugged.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- No immediate storm water entry points of concern; a spill from the loading dock would flow over asphalt 300 feet north to a storm sewer inlet in the street.
- Located in Drainage Basin 004, and drains to Outfall 004.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Concrete berm at the entrances to the Pharmacy Storage – BOS Contractor room provides containment for this building.
- Absorbent material and booms are located inside the building by the loading dock doors. Additionally, a complete spill kit is located in the interior of the building.
- No drains or sumps in the building.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
1530	Vehicle Wash Rack

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- No hazardous materials that could contact storm water; all industrial activities are performed inside.
- Vehicle washing is performed inside this building; no activities are performed outside.

Likelihood of Storm Water Contamination:

- Vehicle washing is performed inside this building; no activities are performed outside.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Floor and trench drains in this building discharge vehicle wash water to an aboveground oil/water separator (OWS) that discharges to the sanitary sewer.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Prohibition of outdoor vehicle washing activities. • No fuel tankers allowed in building. • Interior floor is sloped and has drains which connect to an OWS and discharges to sanitary sewer.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

29 January 2019

Building Number or Location:	**Description:**
2450	CE Maintenance Shops

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Small containers (less than five gallons) of paints, empty gas cans, oils, insect sprays (inside building).
- Vehicle fluids (from vehicles and heavy equipment in long-term parking area).
- Carpentry Shop – Three (3) Flammables Lockers (paints, adhesive, primer, mineral spirits).
- HVAC Shop – Two (2) Flammables Lockers (POLs, glue, grease, etc.).
- Plumbing Shop – One (1) Flammables Locker (paints, oil, bleach), one (1) oily rags accumulation bin.
- Underground storage tank (UST) in the parking lot (10,000-gallon diesel tank).
- Generator and 100-gallon double-walled diesel tank in the lot near the building on concrete pads.
- Containers of paint, hazardous waste, and refrigerants are kept in two locked HAZMAT storage sheds, which provide secondary containment (located outside).
- CE warehouse with two (2) Flammables Lockers with 5-gallon containers (paints, adhesives).

Likelihood of Storm Water Contamination:

- No floor drains in shops.
- Potential for leaks from vehicles and heavy equipment parked outside the northwest side of the building.
- Storm drains in parking lot north of building.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from long-term parking area at rear of the building flows northwest 30 feet over asphalt and grass to a storm drain in the street.
- Located in Drainage Basin 004, and drains to Outfall 004.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• No floor drains in shops. • Prohibition of outdoor vehicle washing. • HAZMAT storage sheds provide a roof and secondary containment for hazardous waste and paints.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

29 January 2019

Building Number or Location:	**Description:**
2500 Hangar Ave. Storage Area	Long-term storage of generators and transformers

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Equipment fluids (from long-term parking).
- Various types of generators and transformers.

Likelihood of Storm Water Contamination:

- Potential leaks from long term parking of generators, and transformers.
- Manual valve storm drains.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Bermed area that drains into a storm drain inlet with a manually-operated valve normally kept in the closed position.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☐ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Concrete berms are sealed to provide containment for storage of fuel tanks. • Containment area drainage valve is maintained in the closed position.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
2506	Recycle Maintenance Yard

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Four (4) open roll-offs (1 wood, 1 metal, and 1 miscellaneous recyclables, 1 general refuse).
- Three (3) compactors with small amounts of hydraulic fluid for cardboard, white paper, and trash.
- One (1) HAZMAT storage shed of mercury lightbulbs.

Likelihood of Storm Water Contamination:

- Storm drain inlets located to the north of the recycle yard.
- Storm water drains into a manhole OWS in the northwest corner of the yard.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff flows across yard to an OWS.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Facility is staffed by a dedicated contract employee during open hours. Facility is locked when closed.
- Site personnel review materials during drop-off to verify acceptability of materials.
- Mercury lightbulbs are stored in labeled boxes within the HAZMAT shed.
- OWS is inspected quarterly and cleaned as needed.
- Routinely inspect the area around the roll-off containers compactors for signs of staining or discharge of pollutants.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
3101, 3506, 3507	Army Reserves Center Vehicle Maintenance Shop

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Potential leaks from vehicles in parking lots surrounding the buildings, and generators stored outside next to cold storage building.
- Hazardous material rooms on the inside the north end of the building.
- Multiple POLs in dispensing area and used oil storage areas.
- Small equipment stored inside (forklift, floor sweeper, all-terrain vehicle, snow blower).
- Individual storage rooms for POLs, flammables, etc.
- Flammables lockers with cleaners and paints.
- 55-gallon drums of used oil, antifreeze, and diesel on spill pallets in shop.

Likelihood of Storm Water Contamination:

- Trench drains inside building go to an OWS then to sanitary sewer.
- Wash rack drain in Building 3506 goes to an OWS, then to sanitary sewer. In the winter, the wash rack houses generators that were formerly stored just outside of building.
- Water is turned off during winter months.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from parking area flows to proprietary storm drain units (Vortsentry) and subsequently to a leach field. Most rainwater expected to infiltrate to ground.
- Storm drains along Marine Way drain to Drainage Basin 005, and drain to Outfall 011. Drains along Eagle Drive flow to Drainage Basin 004, and drain to Outfall 004.
- Many storm drains are located in the vehicle storage area.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☐ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Floors of maintenance bay sloped inward toward main area. • Spill kits located in parking lots, maintenance room and wash rack. • Spill pallets and drip pans located throughout facility.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

29 January 2019

Building Number or Location:	**Description:**
3405	Salt Storage Yard

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Salt/sand pile enclosed by a building.
- Propane is stored in HAZMAT storage shed and a wooden shed.
- Equipment fluids (from long-term equipment parking).
- Scrap rusting metal and piping, empty plastic totes and trash cans.
- Uncovered rock and mulch piled outside.

Likelihood of Storm Water Contamination:

- Salt/sand pile is covered by a salt storage dome.
- Equipment is parked throughout the lot and old oil stains are evident on the east side of the lot.
- Piles of mulch and stone contained by jersey barriers are uncovered.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff flows north as sheet flow to a local low point in the grass.
- Located in Drainage Basin 005, and drains to Outfall 011.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☒ Minimize Exposure

Site-Specific BMPs in Place:

- Any salt that is spilled on the ground during loading/unloading is cleaned up immediately.
- Train personnel working in the salt storage area on the good housekeeping practices required for this area.
- Keep metal equipment indoors if possible. When metal equipment or materials become too rusty to use, properly dispose or turn in as scrap metal.
- The dome prevents precipitation from contacting salt pile.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
3505	USMC Reserves Training Center

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Vehicle and heavy equipment fluids (from long-term vehicle and equipment parking on south and east sides of the building).
- HAZMAT storage sheds contain batteries and small amounts of hazardous materials, transmission fluid, oil, hydraulic fluid, miscellaneous flammable materials, and corrosives.
- Flammables lockers contain various adhesives, lubricants, solvent, and paint.
- Various drums of POLs located indoors over a dead-end sump area.
- Indoor waste accumulation area provided with portable secondary containment for waste oil, antifreeze, and spill debris.
- Vehicle wash rack.
- Refueling truck parking area (see Other Information).

Likelihood of Storm Water Contamination:

- No floor drains inside maintenance bay.
- Potential for leaks from vehicles and heavy equipment parked on the north side of the building.
- Sediment from vehicle traffic through grassed areas adjacent to parking lot.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from south parking area flows over asphalt to storm sewer inlets in the area and drains into a detention basin.
- Runoff from east parking area flows immediately to several storm sewer inlets.
- Located in Drainage Basin 011, and drains to Outfall 011.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☐ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Spill kit inside maintenance bays and outside in equipment parking area. • Drip pans used on leaking vehicles. • Vehicle wash rack contains wash water in a sloped concrete pad that drains to an OWS and to sanitary sewer. • Refueling truck parking has concrete berms and is sloped to contain spills. Floor drains within the berms are equipped with valves that are maintained closed. The valves can allow stormwater to be discharged or divert fluid to an OWS.

Suggested BMPs: None.

Other Information:

- Long-term bus, truck, and equipment parking is in the south parking area. Long-term truck, snow removal equipment, deicing equipment, and construction equipment parking in east parking area.
- A refueling truck parking area with sloped concrete berms for containment has been fully constructed, but no refueling truck is assigned to the facility as of January 2019. The containment area is not being used.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
5375	Base Supply

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Various sizes of hazardous material containers received at southwest loading dock.
- Vehicle and generator fluids from long-term parking areas to the south and northeast of the building waiting turn-in to DRMO.
- One flammables locker located inside containing various POLs.
- One large dumpster with scrap metal in storage yard to the north of the building.

Likelihood of Storm Water Contamination:

- No floor drains in building.
- Occasional loading/unloading of 55-gallon drums of hazardous materials occurs at the loading dock on the southwest side of the building; these drums are then moved to Building 1301, the HAZMAT Pharmacy, for storage.
- Potential for leaks from long-term generator parking areas: outside storage yard northwest of the building stores miscellaneous equipment, supplies, and generators; vehicles and a crane are stored on the southwest side of the building.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from north loading dock flows 20 feet to a storm inlet.
- Runoff from northwest loading dock flows 50 feet to a storm inlet in the street.
- Runoff in outside storage yard flows 20 feet to storm inlets in the asphalt.
- Located in Drainage Basins 002 and 004, and drains to Outfalls 002 and 004 respectively.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Small spill kit and absorbent material inside building.
- Spill pallets are used to store containers/drums of hazardous materials while kept at Base Supply.
- All parked generators and bowsers for turn-in to DRMO are drained of fluids and ready for shipment.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

29 January 2019

Building Number or Location:	**Description:**
5425	Express Gas Station

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Three (3) multi-fuel, dual sided fuel pumps
- Three (3) 10,000-gallon gasoline USTs.
- Forklift fluids are stored in back of the store under a canopy
- Forklift parked in rear of building.

Likelihood of Storm Water Contamination:

- Fuel pump area and the fuel receiving area are on concrete pads with small ridges that contain small spills and reduce storm water run-on.
- Fueling area is on a local high point, which prevents storm water run-on.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from the fuel receiving area flows directly to an OWS and the storm sewer.
- Runoff from pump area flows 100 feet in either direction over asphalt to storm sewer inlets in either Air Lift Road or Walker Avenue.
- Forklift storage area is located near a storm drain inlet.
- Located in Drainage Basin 004, and drains to Outfall 004.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☐ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Roof over fuel pumps. • Small ridges on concrete fueling pad contain small fueling spills and reduce storm water run-on. • Fueling area is on a local high point which prevents run-on. • Small OWS collects runoff from fuel receiving area. • USTs have overfill alarms and automatic shutoff floats in the fill ports. • Two emergency shut-off buttons for gas pumps are installed on the outside and inside of the building. • Large spill kit located by the fuel pumps.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7000/DC Hangar	Fuel Systems Maintenance Shop, Aircraft Inspection, ISO Dock

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Two HAZMAT storage shed inside the hangar serves as the hazardous waste accumulation point and has two spill kits.
- Two flammables lockers containing oil and fuel are located in the ISO Dock Area.
- 55-gallon drums with Jet A and solvent spill debris are located in Fuel Systems Maintenance.
- Two locked flammable lockers are located in Fuel Systems Maintenance.
- Two 600-gallon fuel bowsers are located in Fuel Systems Maintenance.

Likelihood of Storm Water Contamination:

- All floor drains are connected to two OWSs and the sanitary sewer.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- No storm water entry points of concern.
- Located in Drainage Basin 002, and drains to Outfall 002.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Drip pans and absorbent pads are placed under aircraft engines during maintenance.
- Building floor drains are connected to two OWSs and the sanitary sewer.
- HAZMAT storage shed provides cover and secondary containment for various hazardous materials.
- Spill kits located in the hangar and in the HAZMAT storage shed.
- Drainage Logs maintained in pump room.
- Bowsers parked within plastic spill dikes

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
7025, 7026, 7027	Bulk Fuel Storage Area

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Two 840,000-gallon Jet A ASTs (Facilities 7026 and 7027).
- 2,000-gallon pressure-relief UST.
- Four off-loading headers and two fuel pumps in loading area. Two fuel pumps in pump room.

Likelihood of Storm Water Contamination:

- ASTs are located in concrete containment dikes. The walls of the dikes are lined with a high-density polyethylene (HDPE) cover to increase the impermeability of the dikes.
- AST containment dikes are equipped with drain valves that are maintained closed. Discharged runoff flows to a 4,000-gallon OWS then to storm sewer which leads to a 44,000-gallon airfield OWS.
- Fuel loading area is bermed and sloped towards trench drains with closed storm drain valves; discharged runoff flows to 4,000-gallon OWS then to storm sewer which leads to a 44,000-gallon airfield OWS.
- Excess pressure in the fuel lines is bled off into the product recovery tank.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff flows over soil and asphalt to storm inlets in the area.
- Located in Drainage Basin 002, and drains to Outfall 002.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☒ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- The concrete dike liner is inspected and replaced when it becomes deteriorated.
- Large spill kit near fuel loading area.
- Fuels system emergency shutdown switch in fuels loading area.
- Sweep out the interior of the dikes as necessary to prevent sediment from entering the OWS and storm sewer.
- Drainage logs maintained in pump room.
- Fuel unloading area has a roof and bollards protecting pumps.
- Signs show valve operating instructions for diverting flow to the OWS.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7040	Pull-Through Hangar, Corrosion Control, Aircraft Wash Rack

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Propylene glycol associated with the deicing truck fill stand.
- 30,000-gallon propylene glycol UST for aircraft deicing.
- Multiple deicing trucks temporarily parked near tank during deicing season.
- Acids and chromic waste inside corrosion control room
- Waste POLs inside caged area within the hangar.
- Flammables lockers inside hangar containing small amounts of paint, lube, adhesive, and detergents.
- Aircraft washing contractor has washing equipment stored in the hangar.
- 1,000-gallon high-expansion foam tank in fire suppression room.
- One 6,000-gallon UST and two 5,000-gallon aircraft soap tanks inside the mechanical room.

Likelihood of Storm Water Contamination:

- Aircraft washing and painting occur in the hangar.
- Two large trench drains run the length of Building 7040 and collect runoff in a 30,000-gallon collection tank that drains through an OWS to an ejection pit, where it is tested and released to the sanitary sewer.
- Deicing trucks are issued propylene glycol at the glycol fill stand on the north corner of the building. Bollards protect the fill stand, but no secondary containment is present.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from glycol fill stand flows 20 feet north over asphalt and grass to a storm sewer inlet.
- Storm drains in the glycol storage and fill areas and drains on the north and northwest sides of the hangar are located in Drainage Basin 001 and drains to Outfall 001.
- The remaining storm drains around the hangar discharge to Outfall 002.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☐ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☒ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Spill kit is located next to the propylene glycol fill stand. • Two spill kits located inside the building. • All aircraft washing is conducted indoors.

Suggested BMPs: None.

Other Information: None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7045, 7046	Military Gas Station

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- 20,000-gallon diesel, 15,000-gallon gasoline, and 5,000-gallon Jet-A USTs.
- Two fuel dispensing stations for diesel, gasoline, and Jet A.
- A truck loading header for diesel fuel.

Likelihood of Storm Water Contamination:

- Both fueling areas are covered with roofs.
- Fueling areas are on local high points and the concrete around them has small grooves cut in it to limit runoff.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from both service areas flows 50 feet over concrete and asphalt to an OWS where it ultimately discharges to the storm sewer.
- Trench drains with valves normally in the closed position are around the section that has the diesel loading arm. The trench drains discharge to a 1,500-gallon OWS before entering the storm sewer.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☐ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Roof over fueling areas.
- Small ridges on concrete fueling pads contain small fuel spills and prevent runoff.
- Fueling area is on a local high point that prevents storm water run-on.
- Runoff flows into a trench drain and through an OWS, which is inspected as needed. Red post indicator valve is used to control flow from the trench drains. It is closed when a truck is receiving fuel from the loading header.
- Large spill kit is located at Bldg 7045 with spill booms.
- Small "customer" spill kit is present at Bldg 7046.
- Bollards on either end of both fueling areas protect fuel pumps from damage by vehicles.
- Emergency stop for fuel pumps at each island and on outside wall of Hangar 9.

Suggested BMPs: None.

Other Information:

- Potential future project to move portion of gas station on flightline side of fencing further away from fence.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7071	Hangar 9 – AGE (South Side of Hangar) AMXS (North Side of Hangar)

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Potential leaks from generators, light stands, and lifts stored on southeast side of the building.
- Detergent in the wastewater from the indoor wash rack.
- Three indoor HAZMAT storage sheds containing waste oils, antifreeze, POLs and waste rags.
- 10+ Flammables lockers inside hangar with small amounts of paints and solvents.
- Oil drip pans and empty containers stored inside indoor caged area.
- Two (2) stackable polyethylene racks for 55-gallon drums (inside hanger).
- Three (3) sky jack scissor lifts.
- Indoor POL dispensing rack with 60-gallon containers of hydraulic fluid, lube oil, and antifreeze.
- 55-gallon drums stored indoors (lube oil, solvents, hydraulic fluid, cleaning compound).

Likelihood of Storm Water Contamination:

- Trench drains inside building go to the OWS then to sanitary sewer.
- AGE has an approved wash rack for their equipment in this hangar; wash rack drains to OWS, then to sanitary sewer.
- Generators and AGE equipment are parked outside, except when weather does not permit.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from generator storage area flows 200 feet over concrete and asphalt to a storm inlet.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- AGE equipment are stored in the hangar unless in use in the Ready Line.
- Washing occurs at an approved wash rack inside the hangar; drains to OWS then to sanitary sewer.
- Posted spill warning signs in hangar.
- Spill kits throughout hangar.
- Flammables lockers and HAZMAT storage sheds provide cover and secondary containment for hazardous materials.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7072	Hangar 7 - NDI, Structural Maintenance, and Metals Technology Shops

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Long-term vehicle and equipment parking on flightline side of facility.
- Inside hangar:
  - Small quantities of hazardous materials stored in lockers (paints, adhesives, solvents, batteries, sodium hydroxide, hydrochloric acid, acetone, alcohol, cleaning compounds, sealants)
  - One (1) drum of POL on spill pallet.
- Fiberglass Shop:
  - 55-gallon drums of ADH residue and sanding debris.
  - 30-gallon drum of acid residue.
- NDI Shop:
  - Open vats of liquid for submersion testing.
  - Wastewater treatment system of 4 granulated carbon drums.

Likelihood of Storm Water Contamination:

- Floor drains in hangar go to sanitary sewer.
- Trucks are parked long-term outside on the flightline side of the facility.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from the truck parking area flows 40 feet over asphalt to storm drain inlets.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Spill kits inside all shop areas.
- Flammables lockers and HAZMAT storage sheds provide cover and secondary containment for hazardous materials.
- Spill pallets provided inside hangar for hazardous material storage.
- Waste fluids from NDI are pre-treated and sent to sanitary sewer. Drums are placed on spill pallets.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7073	Hangar 5 - Roads and Grounds Shop, Vehicle Maintenance Shop

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Vehicle and heavy equipment fluids from long-term vehicle and equipment parking on south and east sides of the building, includes various lawn tractors and snow equipment.
- Potassium acetate for runway and apron deicing stored outside in a 10,000-gallon storage tank.
- 1,100-gallon tank of potassium acetate for runway deicer sprayer.
- Small amounts of POLs on spill pallets in building. Multiple POL dispensing areas in secondary containment. Waste oil accumulation point is located in a small room in the hanger.
- Eight 2,205-pound bags of solid runway deicer.
- Pallets of 5-gallon buckets of rock salt for sidewalk and road deicing.
- Four flammables lockers containing POLs, insecticide, paint, herbicide, and diesel fuel.
- Many 55-gallon drums of oil, hydraulic fluid, antifreeze, a 400-gallon waste oil tank, and two fuel caddies (one of diesel fuel and one of gasoline) at the hazardous waste accumulation point.
- Indoor POL dispensing rack with 60-gallon containers of hydraulic fluid, lube oil, and antifreeze.

Likelihood of Storm Water Contamination:

- Floor drains go to sanitary sewer.
- Vehicle washing occurs inside the hangar and discharges to the sanitary sewer.
- Potential for leaks from vehicles and heavy equipment parked in the east and south sides of the building. Several leaks were identified under vehicles and hydraulic units.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from south parking area flows 10 feet over asphalt to a storm sewer inlet in the area.
- Runoff from east parking area flows immediately to several storm sewer inlets.
- Located in Drainage Basin 001, and drains to Outfall 001.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☒ Minimize Exposure

Site-Specific BMPs in Place:

- A concrete berm serves as containment at the hazardous waste accumulation point.
- Salt trucks stored indoors.
- Floor drains on the southwest side of the shop drain to an OWS then to the sanitary sewer.
- Spill kit located inside building.
- Drip pans used where necessary
- 400-gallon used oil tank is double-walled.

Suggested BMPs: None.

Other Information: None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7075	Hangar 3

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Vehicle and equipment fluids (from long-term vehicle and equipment parking).
- Flammables lockers inside the hangar containing disinfectants, cleaners, and soaps.
- Two 325-gallon totes of glycol and one 55-gal. deodorant for aircraft latrines are stored on spill pallets inside the hangar.

Likelihood of Storm Water Contamination:

- Floor drains go to sanitary sewer.
- Potential for leaks from vehicles and equipment stored in long-term parking.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff flows directly to storm drains located in the parking lots adjacent to the facility.
- Located in Drainage Basin 001, and drains to Outfall 001

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☐ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Glycol and deodorant totes are stored on a containment pallet.
- Vehicles stored inside hangar during winter.
- Absorbent pads and dry material available for spill cleanup.
- Flammables lockers provide cover and secondary containment for hazardous materials.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
7084	Fire Department

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- One 600-gallon diesel UST for generators and one 2,500-gallon UST of aqueous film forming foam (AFFF).
- Hazardous materials stored in HAZMAT storage sheds.
- One flammables locker with POLs, paint, and diesel located inside.
- Vehicles washed indoors.

Likelihood of Storm Water Contamination:

- Washing of vehicles with soap occurs inside the Fire Department garage and all floor drains are routed to an OWS and to the sanitary sewer.
- AFFF UST is in a grassed area north of the building.
- Small amounts of hazardous materials are stored in flammable lockers in the building.
- Floor drains in the vehicle storage area go to sanitary sewer.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Overfilling of USTs or spills that exit the building would flow to nearby storm drains.
- Located in Drainage Basin 007, and drains to Outfall 007.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☐ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☐ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Washing occurs indoors and floor drains discharge to an OWS and the sanitary sewer.
- HAZMAT storage sheds and flammables locker provide cover and secondary containment for various containers of hazardous materials.
- Spill kits available on all vehicles.

Suggested BMPs: None.

Other Information:

- Building undergoing major renovations in January 2019. Fire trucks parked in garage and temporary office trailers are next door for all FD administration.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
7701, 7705, 7713, 7714	Fuel Stands; Hydrant System; Pump Houses; Bulk Fuel Tanks; Refueler Truck Parking

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Jet-A in hydrant piping, fill stands, transfer locations, and various fuel pumps and pump houses.
- Diesel generator adjacent to pumphouse.
- Refueler parking:
  - Four (4) 6,000-gallon Jet-A fuel trucks.
  - Two (2) 600-gallon fuel bowsers for storage and recovery of fuel.
- 4,000-gallon UST for Jet-A product recovery.
- Two (2) 298,000-gallon Jet-A bulk storage tanks

Likelihood of Storm Water Contamination:

- Hydrant fill stands are bermed concrete pads with trench drains that discharge to an 8,000-gallon fill stand vault with a normally closed valve. When opened, the flow from the vault discharges to an OWS and ultimately to the storm sewer.
- Drains in the pump house are routed to the 4,000-gallon product recovery UST.
- Trucks and bowsers currently stored outside of containment as parking area is being constructed.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff in the POL area flows to storm inlets in the grassy areas.
- Secondary containment areas drain to OWS and the storm sewer.
- Located in Drainage Basin 002 and drains to Outfall 002, which has a 44,000-gallon OWS.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☒ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☐ Minimize Exposure	• Bulk fuel storage tank located in concrete sized containment dikes. Tanks have high level alarms and automatic shutoff. Containment drain valves discharge to an OWS before discharge to storm sewer. • Refueler parking area has trench drains that discharge to concrete vault for spill capture. Storm drainage valve is kept closed until an inspection of accumulated water. • Diverter valve on storm drain at fuel fill stands is activated before fueling occurs; diverts possible spills to 8,000-gal. concrete vault. • Hydrostatic testing conducted daily on hydrant loop piping. • Spill kits located throughout the area. • Area ultimately discharges to a 44,000-gallon OWS with a 24,000-gallon oil holding capacity at Outfall 002. • Pump switches are shut off when not in use. • HAZMAT storage shed provides cover and secondary containment for small quantities of POLs.

Suggested BMPs: None.

Other Information: None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
7711	Refueler Truck Maintenance Facility

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Jet-A from refueler trucks being repaired within garage.
- Indoor POL dispensing rack with 60-gallon containers of hydraulic fluid, lube oil, and antifreeze.
- Various small containers of POL.
- One 55-gallon used oil drum and one 55-gallon fuel spill debris within concrete secondary containment dike inside the garage.
- 500-gallon fuel meter calibrating tank on the south side and inside the building.
- Flammable locker with various small hazardous materials.
- 1,000-gallon No. 2 fuel oil AST located outside.
- 15,000-gallon spill containment UST with access on the west side of the building.

Likelihood of Storm Water Contamination:

- Trench drains in building discharge to a 15,000-gallon containment tank to capture accidental releases from within the shop.
- No. 2 fuel oil AST is in secondary containment.
- POL and antifreeze dispensing rack and used oil drum in concrete containment within building.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Trench and circular floor drains in building discharge to 15,000-gallon containment tank.
- Runoff from outside refueler truck area flows 50 to 150 feet to storm inlets.
- Located in Drainage Basin 002, and drains to Outfall 002.

General BMPs in Place:

☐ Erosion and Sediment Controls
☒ Good Housekeeping
☒ Inspections
☒ Preventive Maintenance
☒ Spill Prevention and Response
☒ Secondary Containment
☒ Training
☒ Waste, Garbage, and Floatable Debris
☒ Prohibition of Industrial Activities Outside of Designated Areas
☐ Minimize Dust and Off-Site Material Tracking
☐ Minimize Exposure

Site-Specific BMPs in Place:

- Containment tank serves the trench drains and floor drains in the maintenance garage.
- 50-gallon portable drip pans used under refueler trucks during maintenance operations.
- Permanent concrete dike around drums/antifreeze/oil dispensing units.
- Use of dry clean-up methods for fuel spills.
- Spill kit located in building.
- Flammables locker provides cover and secondary containment for hazardous materials.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

31 January 2019

Building Number or Location:	**Description:**
8005	Fire Training Area

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- 12,000-gallon liquid propane tank located near the plane mockup.
- Three small propane tanks near cars in the smokehouse lot.
- Ash from fire training accumulated in a pile and ultimately disposed of in a dumpster within the lot.

Likelihood of Storm Water Contamination:

- Water from fire training activities at the smokehouse enter one of 4 drain inlets that ultimately discharge to the lined retention pond.
- Water from fire training activities at the plane mockup flows to the retention pond.
- Water accumulated in the retention pond is allowed to evaporate or is discharged to the sanitary sewer when it becomes too full.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff flows to retention pond and ultimately to the sanitary sewer if necessary.
- Located in Drainage Basin 005, and drains to Outfall 011.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☒ Preventive Maintenance ☒ Spill Prevention and Response ☒ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☐ Minimize Dust and Off-Site Material Tracking ☒ Minimize Exposure	• Only water (no foam) is used during fire training exercises. • If necessary, the retention pond is discharged to the sanitary sewer. • Wrecked vehicles used in training are drained of fluids before parking at the facility.

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
N/A	Flightline Apron

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Jet-A fuel and hydraulic fluid in parked aircraft.
- Propylene glycol stored in UST adjacent to Building 7040.
- Two (2) tanks with potassium acetate for runway and apron deicing operations.
- Refueling pits along the hydrant system loop used to refuel aircraft.
- Fluids from deicing equipment, generators, AGE equipment, and other vehicles parked on the apron.

Likelihood of Storm Water Contamination:

- Both dry and wet-weather aircraft deicing occurs on apron.
- Potassium acetate routinely spread along apron during winter months to remove ice.
- Aircraft fueling conducted at high pressures by refueling truck or hydrant system loop.
- Small hydraulic fluid spills occur from the C-5 aircraft.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Storm sewer inlets line the center of the apron and runoff flows to either the 70,000-gallon OWS at Outfall 001 or to the 44,000-gallon OWS at Outfall 002; ultimate discharge is Cooley Brook.
- Located in Drainage Basins 001 and 002, and drains to Outfalls 001 and 002 respectively.

General BMPs in Place:

☐ Erosion and Sediment Controls

☒ Good Housekeeping

☒ Inspections

☐ Preventive Maintenance

☒ Spill Prevention and Response

☐ Secondary Containment

☒ Training

☒ Waste, Garbage, and Floatable Debris

☐ Prohibition of Industrial Activities Outside of Designated Areas

☒ Minimize Dust and Off-Site Material Tracking

☒ Minimize Exposure

Site-Specific BMPs in Place:

- Storm runoff from apron is controlled by a 70,000-gallon OWS at Outfall 001 and a 44,000-gallon OWS at Outfall 002. Large flows bypass the OWSs via concrete weirs at the outfalls.
- The effluent from the OWS at Outfall 001 is routed to a wetlands treatment system before discharge to Cooley Brook.
- The Fire Department is located on the flightline and can provide immediate HAZMAT response in the event of a fuel release.
- An Aircraft Glycol Monitoring Log is completed and submitted to the Environmental Office after each deicing event.
- When possible, deicing activities are conducted at parking spaces E-1 through E-8 and E-12 through -14 on the Echo Ramp because these locations drain to Outfall 001, served by the wetlands treatment system.
- When possible, aircraft scheduled to fly the next day are stored in the hangar.
- Moving parts and surfaces are deiced first.
- Hot air is used for frost, light snow, and later flight times

Suggested BMPs: None.

Other Information:

- None.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

30 January 2019

Building Number or Location:	**Description:**
N/A	Transient Aircraft Apron AKA: North Ramp

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Jet-A fuel in transient aircraft.
- Fueling of aircraft with Jet-A from refueling trucks.
- Propylene glycol during aircraft deicing operations.
- Potassium acetate from apron deicing activities.
- Heavy equipment fluids from long-term snow removal equipment parking.

Likelihood of Storm Water Contamination:

- Aircraft fueling occurs on the apron.
- Snow removal equipment is parked at the north end of the apron.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Runoff from the transient apron flows over concrete and grass up to 400 feet to storm sewer inlets.
- Located in Drainage Basin 007, and drains to Outfall 007.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☐ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☐ Preventive Maintenance ☒ Spill Prevention and Response ☐ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☒ Minimize Dust and Off-Site Material Tracking ☒ Minimize Exposure	• Concrete apron is graded to prevent storm water run-off. • The Fire Department is located on the flight line and can provide immediate HAZMAT response in the event of a fuel release. • If possible, flights are delayed to avoid deicing activities. • An Aircraft Glycol Monitoring Log is completed and submitted to the Environmental Office after each deicing event. • Moving parts and surfaces are deiced first. • Hot air is used for frost, light snow, and later flight times.

Suggested BMPs: None.

Other Information:

- No transient aircraft present during 2019 evaluation.

WESTOVER ARB STORM WATER POLLUTION PREVENTION PLAN

REGULATED INDUSTRIAL ACTIVITY POINT (RIAP) INSPECTION

29 January 2019

Building Number or Location:	**Description:** Soil Stockpile

Inventory of Hazardous Materials Potentially Exposed to Stormwater:

- Sediments from erosion of soil piles.
- Asphalt, wood, straw, concrete, and manhole covers in piles throughout the area.

Likelihood of Storm Water Contamination:

- Sediment on roadways during loading, unloading and transport of materials.
- Sediment from soil stockpile runoff.

Description of Stormwater Entry Points and Ultimate Outfall Point:

- Storm water runoff flows approximately 200 feet to the southwest across grassed field before entering Stony Brook and ultimately Outfall 011.
- Located in Drainage Basin 011, and drains to Outfall 011.

General BMPs in Place:	**Site-Specific BMPs in Place:**
☒ Erosion and Sediment Controls ☒ Good Housekeeping ☒ Inspections ☐ Preventive Maintenance ☒ Spill Prevention and Response ☐ Secondary Containment ☒ Training ☒ Waste, Garbage, and Floatable Debris ☐ Prohibition of Industrial Activities Outside of Designated Areas ☒ Minimize Dust and Off-Site Material Tracking ☒ Minimize Exposure	• Create and enforce guidelines that prohibit what materials can be brought here. • Grassed buffer area which storm water must flow across before entering Stony Brook. • Earthen berm along the west side to limit storm water runoff directly into Stony Brook and allow for settling of entrained sediments. • Contractors are to clean up tracked sediment from activities at the end of each day.

Suggested BMPs: None.

Other Information:

- None.

Appendix F: NPDES Multi-Sector General Permit for Storm Water Discharges Associated With Industrial Activities

[Permit copy can be found at Environmental Office 439th MSG/CEV or on-line at EPA Website.]

Appendix G: 2015 Notice of Intent for Coverage under MSGP

Appendix H: Storm Water Monitoring Data
Laboratory data can be found at Environmental Office 439th MSG/CEV or EPA website https://cdx.epa.gov/

Appendix I: Annual Reports

Note: Annual Reports can be found at Environmental Office 439th MSG/CEV or at EPA website https://cdx.epa.gov/.

Appendix J: Annual Air Force Voluntary 3rd Party Evaluation Reports

STORM WATER POLLUTION PREVENTION

AIR FORCE VOLUNTARY 3RD PARTY EVALUATION REPORT

WESTOVER AIR RESERVE BASE CHICOPEE, MASSACHUSETTS

Prepared for:

HEADQUARTERS, AIR FORCE RESERVE COMMAND
HQ AFRC/A4CA
549 Pine Street
Robins Air Force Base, Georgia 31098-1895

Contract No. W91278-12-D-0006, Task Order 0006

March 2019

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1. INTRODUCTION

This Storm Water Pollution Prevention Plan (SWPPP) Air Force 3rd Party Evaluation Report documents the findings of the compliance inspection/evaluation conducted at Westover Air Reserve Base (ARB) in Chicopee, Massachusetts from 28 January - 1 February 2019 by Mr. Nick Dobberpuhl, Engineer, and Mr. Taber Midgley, Engineer, of EA Engineering, Science, and Technology, Inc., PBC (EA) and Mrs. Champanine Saviengvong, Westover ARB Water Program Manager. The evaluation and this report satisfy one of the quarterly inspection requirements of the Westover ARB National Pollution Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit (MSGP) issued by the Environmental Protection Agency (EPA).

This report, formerly called a Comprehensive Site Compliance Evaluation (CSCE) once required under the 2008 MSGP, has since been removed as a requirement under the 2015 MSGP. The purpose of this evaluation report is to determine the effectiveness of the SWPPP in controlling storm water pollution from industrial areas and to ensure that Westover ARB is in compliance with its MSGP. This report reviews industrial operations at Westover ARB, discusses best management practices (BMPs) being successfully implemented, suggests additional BMPs to be implemented, and reports any instances of noncompliance with the permit. Each of the aspects of the SWPPP that are regulatory requirements were evaluated and determined to be in compliance unless otherwise noted in this report. Some of the BMPs suggested in the previous CSCEs were reevaluated during the 2019 Air Force 3rd Party Evaluation and changes have been made to make the suggested BMPs more feasible to address the current conditions at Westover ARB.

2. STORM WATER REGULATION

a. Storm Water Permit

The United States Environmental Protection Agency (US EPA) regulates the discharge of storm water from Westover ARB under the Storm Water MSGP, which was issued on 4 June 2015 and will expire on 4 June 2020. Westover ARB is regulated as a Sector S, Air Transportation, Facility and the MSGP covers storm water discharge from Outfalls 001, 002, 003, 004, 006, 007, 009, and 011.

To comply with the requirements of the updated MSGP, Westover ARB updated the SWPPP to meet the new requirements, submitted a Notice of Intent (NOI) for coverage to the US EPA, and received authorization from US EPA Region 1 to discharge under the MSGP on 2 October 2015 under facility identification number MAR052002.

b. MS4 Phase II Review

Westover ARB became a regulated urbanized area based on the 2010 census which was officially released by the Census Bureau on 26 March 2012. As a result, Westover ARB is required to apply for coverage under the General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts. Westover ARB was denied a waiver for coverage under the General Permits for Storm Water Discharges from Small MS4s in Massachusetts in 2017. In 2018 an NOI for the general permit was submitted to EPA. A Storm Water Management Program is currently being developed and has a submission deadline to EPA of July 1, 2019.

c. Impaired Waters (303(d) and Total Maximum Daily Load [TMDL]) Review

Stony Brook is the receiving water for Outfall 011 on the north side of Westover ARB. Based on the 2014 Integrated List of Waters and the 2010 and 2012 Water Quality Assessments, Stony Brook is impaired for non-native aquatic plants, *Escherichia coli (E. coli)* bacteria, and turbidity. The State has not established TMDLs for *E. coli* and turbidity.

Stony Brook is within the Connecticut River watershed and discharges to the Connecticut River approximately two miles west of Westover ARB. According to Table 6 in 314 Code of Massachusetts Regulations (CMR) 4.06, the Connecticut River is classified as a Class B Surface Water. According to 314 CMR 4.05, Class B Inland Surface Waters must meet the following criteria for bacteria and turbidity:

- The geometric mean of all *E. coli* samples taken within the most recent six months shall not exceed 126 colonies per 100 milliliter (ml) based on a minimum of five samples, and no single sample shall exceed 235 colonies per 100 ml.
- Be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

To comply with the permit requirements for impaired waters (Part 6.2.4.1 of the MSGP), Westover ARB is required to conduct monitoring once per year at Outfall 011 for *E. coli* and TSS. The sample results should be compared to the applicable state water quality standards (314 CMR 4.05) of 235 colonies/100 ml for a single sample. If more than one sample is taken, five should be collected to obtain a geometric mean and this value should be compared to the *E. coli* water quality standard of 126 colonies/100 ml.

Sampling conducted in October 2018 revealed TSS to be non-detect (reporting limit = 3.13 mg/L). Because previous *E. coli* sampling has been within water quality standards and a source assessment has been conducted for *E. coli*, additional sampling will not be conducted for the rest of the permit term.

The Proposed 2016 Integrated List of Impaired Waters includes Willimansett Brook as an impaired waterbody with *E. coli* bacteria. Willimansett Brook receives water from Outfall 004; therefore, Outfall 004 may require monitoring when the 2016 Integrated List of Waters is finalized. The 2016 List has not been finalized as of February 2019.

3. CHANGES IN INDUSTRIAL OPERATIONS

The primary industrial activity at Westover ARB has been, and will continue to be, the operation and maintenance of military equipment and C-5 aircraft. Since the 2018 evaluation, there have been no changes made that affect the potential for discharge of pollutants to surface waters. As a result, no changes have been made to the Regulated Industrial Activity Point (RIAP) list.

4. EVALUATION OF CURRENT BMPs

Westover ARB has been implementing SWPP BMPs since receiving coverage under its original NPDES permit and has continued to implement SWPP BMPs since receiving coverage under the current NPDES Storm Water MSGP. Westover ARB personnel have also implemented many of the suggested BMPs recommended for pollution prevention, are aware of preventative maintenance practices, and promptly notify the appropriate personnel when a SWPPP concern needs to be addressed.

During the evaluation, deicing activities took place and were observed. Deicing occurred at the plane parking areas as described in the SWPPP, and glycol runoff was captured by the storm sewer grate which direct it to the proper outfall where BMPs have been established for glycol. Deicing chemical usage remain well under the 100,000 gallon threshold for additional monitoring for Sector S.

5. OUTFALL INSPECTIONS

Visual inspections of Industrial Storm Outfall Nos. 001-011 were conducted during the evaluation. The visual inspection was conducted in accordance with the MSGP along with the current SWPPP for Westover ARB. Weather conditions on January 29 were mostly sunny with temperatures near 20 degrees Fahrenheit. Outfall photographs from the February 2019 Evaluation are located in Appendix M of the SWPPP. Outfall conditions observed during the inspection are as follows:

Outfall 001: Storm water influent at this location enters a manhole where high flow is directed to an outfall pipe that discharges directly into Cooley Brook. The remaining flow is directed to an open-top, two-chamber oil/water separator (OWS) with a total capacity of 70,000-gallons. Discharge from this separator enters a wetlands treatment system prior to discharge to Cooley Brook. A slow steady flow was observed emanating from the outfall pipe associated with the OWS and wetlands treatment system at this location. No visible contaminants were observed in the water being discharged to the creek. A reddish stain was noticeable in the OWS as well as the rocks at the outfall.

Outfall 002: Storm water influent at this location enters a manhole where high flow is directed to an outfall pipe that discharges directly into Cooley Brook. The remaining flow is directed to an open-top, two-chamber OWS with a total capacity of 44,000-gallons. Discharge from this separator enters Cooley Brook. A slow steady flow was observed emanating from the outfall pipe associated with the OWS at this location.

A junction box manhole located just upstream from the outfall had significant soil loss around it, causing a sink hole around the manhole. Though it has not been confirmed, it is likely that the sediment was lost through cracks in the pipe and discharged into the brook. A small amount of recently deposited sediment was visible near the outfall pipe. No odors or other visible contaminants were present in the water being discharged to the creek.

Outfall 003: A slight flow was observed emanating from the outfall. No odors or visible contaminants were present in the water discharging to the creek; however, a reddish staining was noticeable within the outfall pipe and on adjacent concrete and rocks at the outfall. There was significant corrosion observed on a corrugated metal pipe along the flowline. There were several holes in the pipe and there appeared to be soil loss through the holes.

Outfall 004: Stagnant water was present in the vicinity of Outfall 004. No odor, visible contaminants, or discoloration of sediment or rocks was noticed. Upstream of Outfall 004, minor soil erosion was observed around a severely damaged concrete headwall. High stormwater flows could destabilize the headwall and surrounding soils.

Outfall 005: A slight flow was emanating from the outfall during the evaluation. No odor or discoloration of sediment or rocks was noticed; however, a small amount of oily material was observed emanating from the outfall. Previous evaluation of upstream industrial facilities determined that all oily appearing material observed at Outfall 005 was related to natural biological processes taking place in wetlands and drainage

swales upstream of Outfall 005. Red soil is visible in the sediment to the west of Outfall 005. Reddish water is visible due to naturally iron-rich soils within the watershed which deposit near the outfall.

Because Outfall 005 discharges within Westover ARB and ultimately through Outfall 011, Outfall 005 is not a regulated outfall.

Outfall 006: A slow but steady flow was observed emanating from the outfall. No odor, visible contaminants, or discoloration of sediment or rocks was noticed.

Outfall 007: A slow but steady flow was observed emanating from the outfall. No odor, visible contaminants, or discoloration of sediment or rocks was noticed.

Outfall 009: A very slight flow was observed emanating from the outfall. No odor, visible contaminants, or discoloration of sediment or rocks was noticed. The area around Outfall 009 has had extensive tree clearing in the previous year. Most of the tree debris has been left on the ground as mulch.

Outfall 011: Because Outfall 011 is the beginning of Stony Brook and a continuation of the flow that runs onto Westover ARB from Wade Lake, a steady flow was observed emanating from the outfall. A small amount of light tan-colored foam was collecting near the outfall. This is likely due to the reddish sediment near Outfall 005 that is causing the off-colored turbidity. No other odor, visible contaminants, or discoloration of sediment or rocks was noticed.

Although flow was observed from several of the outfalls during the Evaluation, the flow is believed to be from prior precipitation events and/or groundwater infiltration into the storm sewer system. It is not believed that the flow is associated with a cross-connection or illicit discharge.

6. CONSTRUCTION ACTIVITIES

During the Evaluation, Westover ARB had five active construction projects, which are described below. None have resulted in greater than 1 acre of land disturbance, and therefore are not required to have general construction storm water permits.

a. **Base Hangar Project** – This project involves the renovation of the existing facilities to current standards and to accommodate the consolidation of two squadrons into a historic hangar, Building 7087. Approximately 78,000 square feet (ft^2) of facility will be renovated, as well as approximately 25,050 ft^2 of hangar bay converted for use as office space, training, operations, and mechanical area. Limited exterior disturbance is associated with this project.

b. **Fire Station Expansion** – The Westover Fire Department is operating out of temporary office trailers as the existing Fire Department undergoes extensive renovations to the office areas as well as the garage and storage areas. Truck storage, maintenance, and cleaning is continuing to take place inside the garage during the renovation work.

c. **Tree Clearing** – There was extensive tree clearing completed in the winter of 2019 along the eastern boundary of the base. Trees were chipped and mulched in place, so no bare soil is present. The purpose of the clearing project was to improve sight lines and reduce tall obstacles near the primary runway.

d. **Water Line Repair** – A buried water line failed and required emergency action to excavate and replace a section of pipe on the east side of the airfield at Westover ARB. During the evaluation, there was open excavation and exposed pipe visible, and there were no potential

sources of storm water contamination visible. All excavated sediments had BMPs implemented to prevent erosion.

e. **Outfall Culvert** – A minor watershed between Outfalls 007 and 009 is served by a culvert under the perimeter road of the installation. The culvert pipe was replaced, but there is no visible vegetation as the seed laid will be dormant until spring.

7. INCIDENTS OF NONCOMPLIANCE

The 2015 MSGP prohibits certain discharges, specifies monitoring and corrective action requirements for discharges to impaired waters, and requires implementation of the SWPPP. As a result, specific deviations from the permit requirements or areas identified in the SWPPP that were not being implemented are considered to be incidents of noncompliance for the purposes of this Evaluation. There were no instances of noncompliance identified during the 2019 Evaluation. There is one issue of concern which could lead to noncompliance, described as follows:

The corrugated metal pipe that lead to Outfall 003 has significant corrosion along the flowline of the pipe. There were several holes in the pipe and there appeared to be soil loss through the holes. If the pipe were to collapse unexpectedly, erosion and sediment deposition in the creek could be expected, as well as adverse effects to the upstream watershed. Repairs would be highly challenging due to the amount of fill above the pipe, estimated to be greater than 20 feet.

8. CERTIFICATION

The undersigned hereby certifies that this report was completed under the supervision of the parties who participated in the evaluation and that the evaluation was completed as described in this report.

Signature:  Date: 3/21/2019

Nicholas Dobberpuhl
EA Engineering, Science, and Technology, Inc., PBC
405 State Highway 121 Bypass
Suite C-100
Lewisville, TX 75067
972-315-3922

Appendix K: Designation Letter

AFRC/DSK _____ AF/REE _____ Asst Exec _____ Exec

Air Force Reserve
Coordination Snowflake

Subject:	Originator:	TMT #
Delegation for MS4 Permit	439 MSG/CEV	

Susp:	OPR Susp:	AO Rank/Name:	AO Phone/E-mail:
28-Jun-19	28-Jun-19	GS-12, John B. Moriarty	557-2434 john.moriarty.1@us.af.mil

Office	Rank/Name	Coord	Date	Office	Rank/Name	Coord	Date
439 AW/JA	Maj Douglas E. DeVore II	Concur	19 Jun 19	439 AW/CC	Col Craig Peters	Concur	25 Jun 19
439 MSG/CCE	Keith Bodley	Coord	19 June 19				
439 MSG/CC	Col Karen Magnus	Concur	19 June 19				
439 AW/CCE	Kristine Seney	Coord	20 Jun 19				

Approval Authority: Other: 439 AW/CC

Purpose:

Obtain AW/CC approval of delegation memorandums at TABS 1, 2 and 3 and notification letters to EPA at TABS 4, 5, and 6.

Background:

Westover is required to seek coverage under the Municipal Separate Storm Sewer System Permit (MS4) because Westover has been categorized as an Urban Area by the US Census Bureau.

Discussion:

TABS 1, 2, and 3 hold delegation memos for the positions of MSG/CC, MSG/CE, and MSG/CEV to sign routine and recurring reports required by MS4 Permit. TABS 4, 5, and 6 are the corresponding notification letters informing EPA of the delegations. 30 JUNE 2019 is the EPA SUSPENSE DATE for the first milestone which is completion of the Stormwater Management Plan (SWMP). The SWMP has finished being developed by CEV Environmental Office, and 439 AW/CC approval of the delegation at TAB 3 will allow the Environmental Flight Chief to sign the SWMP.

Staff Recommendation: Approve

Comment:

For MSG/CC concurrence
For AW/CC to sign at TABS 1 thru 6
TAB 7 holds the conclusion of the Legal Review performed by 439 AW/JA.

Tabs:		
1. Delegation - MSG/CC	4. Notice to EPA - MSG/CC	8.
2. Delegation - BCE	5. Notice to EPA - BCE	9.
3. Delegation - CEV	6. Notice to EPA - CEV	10.
	7. Legal Review	

Comment:

Action: PETERS.CRAIG.CARLTON.1008768800 Digitally signed by PETERS.CRAIG.CARLTON.1008768800 Date: 2019.06.25 15:51:45 -04'00'

Version: 2.0, 1 Oct 14 PRINT Save As PDF Spell Check

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

19 June 2019

MEMORANDUM FOR 439 MSG/CEV

FROM: 439 AW/CC

SUBJECT: Appointment of Duly Authorized Representative for the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts for the Westover Air Reserve Base

1. AFI 32-1067, *Water and Fuel Systems*, dated February 4, 2015, provides applicable agency guidance for storm water discharge permits. Paragraph 5.2.1 includes storm water permits under the definition of national pollutant discharge elimination system (NPDES) permits. IAW para. 5.2.1, installations that have a storm water permit "should strive to operate under a General Storm Water permit." Westover is required to seek coverage under the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts because Westover ARB is in an Urbanized Area designated by the Bureau of the Census. IAW para. 4.3.8.1, "reports required by permits and other information must be signed and/or certified by the installation commander except to the extent delegations are authorized under applicable Federal or state regulations."

2. The United States Environmental Protection Agency (EPA) NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MA MS4 General Permit), Appendix B, effective through June 30, 2022, identifies authorized signers of this permit. IAW subsection 11.A.3, signers on behalf of federal agencies must be "a principal executive officer. . . . For purposes of this subsection, a principal executive officer of a federal agency includes . . . (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency."

3. IAW subsection 11.B of the permit, the senior executive officer of a federal agency may designate a Duly Authorized Representative to sign Permit-related reports if: 1) the authorization is made in writing by a person described above; 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, owner or operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (A duly authorized representative may be either a named individual or any individual occupying a named position); and 3) the signed and dated written authorization is included in the storm water pollution prevention plan, a copy of which must be submitted to the EPA, if requested.

4. IAW subsection 11.D, any person signing documents required under the terms of this permit must include the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information,

> the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

5. The Environmental Engineering Flight (439 MSG/CEV) has overall responsibility for environmental permit compliance. 439 MSG/CEV is hereby appointed as a Duly Authorized Representative for the Westover Air Reserve Base for the MA MS4 General Permit. This appointment supercedes all previous appointments previously made.

PETERS.CRAIG.CARL
TON.1008768800

Appendix L: Corrective Action Documentation

Appendix M: Photographic Record of Storm Water Outfalls

Photograph 1 – Outfall 001

Photograph 2 – Outfall 002

Photograph 3 – Pipe at Outfall 003

Photograph 4 – Outfall 003

Photograph 5 – Outfall 004

Photograph 6 – Outfall 005

Photograph 7 – Outfall 006

Photograph 8 – Outfall 007

Photograph 9 – Outfall 009A

Photograph 10 – Outfall 011