Clean Water Act Inspections and Support

Joint Base Elmendorf-Richardson

January 2019

APDES Permit No. AKS-053651
Contract Number: W911KB-17-C-0048

Prepared For
US Army Corps of Engineers
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JBER, AK 99506
2018 MS4 ANNUAL DETAILED REPORT

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<td>ACGP</td>
<td>Alaska Construction General Permit</td>
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<td>APDES</td>
<td>Alaska Pollutant Discharge Elimination System</td>
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<td>BMP</td>
<td>Best Management Practices</td>
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<td>BOD</td>
<td>Biological Oxygen Demand</td>
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<td>CES</td>
<td>Civil Engineering Squadron</td>
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<td>CEIEC</td>
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<td>COD</td>
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<td>Erosion and Sediment Control Plan</td>
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<td>EO</td>
<td>Executive Order</td>
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<td>ETL</td>
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<td>FFRMS</td>
<td>Federal Flood Risk Management Standard</td>
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<td>HEC</td>
<td>Hydrologic Engineering Center</td>
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<td>HMS</td>
<td>Hydrologic Modeling System</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>GI/LID</td>
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<td>JBER</td>
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<td>MCM</td>
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<td>MILCON</td>
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<td>MS4</td>
<td>Municipal Separate Storm Sewer System</td>
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<td>RAS</td>
<td>River Analysis System</td>
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<td>POLs</td>
<td>Petroleum, Oil, and Lubricants</td>
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<td>SWMP</td>
<td>Storm Water Management Plan</td>
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<td>TSS</td>
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<td>U.S.</td>
<td>United States</td>
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1.0 INTRODUCTION

This report has been prepared to satisfy the annual reporting requirements for the Joint Base Elmendorf- Richardson (JBER) Municipal Separate Storm Sewer System (MS4) Permit. Section 4.3 of the MS4 permit requires that JBER submit both a Summary Annual Report and a Detailed Annual Report. This report, which covers the period January through December 2018, qualifies as the Detailed Annual Report. The Summary Annual Report is attached as Appendix A.

The purpose of this report is to:

- Evaluate compliance with MS4 permit conditions.
- Gauge the appropriateness of best management practices (BMPs).
- Track BMP implementation towards satisfying measurable goals identified in the Storm Water Management Plan (SWMP).
- Determine the overall effectiveness of the SWMP, which was most recently updated in January 2018. The SWMP can be accessed at:

This report is organized to match the Minimum Control Measures (MCMs) listed in Section 3 of the JBER MS4 permit, as follows:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management in New Development and Redevelopment
- Pollution Prevention and Good Housekeeping for Base Operations
2.0 ANNUAL MCM REPORTING REQUIREMENTS

Reporting requirements for each individual MCM are addressed below, in the order they appear in the MS4 permit.

2.1 MCM 1 – Public Outreach and Education

Section 3.1 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 1:

- A description of the public education program and outreach activities accomplished during the previous calendar year, and submittal of at least one copy of each educational material distributed.

- A description of the methods and frequency of disseminating information.

- A description of the target audiences and pollutants/sources that are addressed by the program and how they were selected.

- An estimate of the number of people reached by the program over the previous 12-month period.

- A list of the measureable goals for the public education and outreach program for the next 12-month period.

- The dates by which the measureable goals will be achieved.

- Identification of the person(s) responsible for implementing and coordinating these education activities.

2.1.1 MCM 1 Compliance Discussion

In 2018, JBER performed several public outreach and education activities, with the objective of reaching every major target group on the installation, including housing residents, industrial facility personnel, pet owners, veterinarian services, students, civilian personnel, contracted personnel, and other groups. These target groups were identified in part due to their relation to pollutants of concern, i.e., sediment, pet waste, and petroleum, oil, and lubricants (POLs).

The 673rd Civil Engineering Integrated Environmental Compliance (CEIEC) performed storm water pollution prevention demonstrations to military children with special needs and their families during an event hosted by the Air Force’s Exceptional Family Member Program. During the May 19 event, 673rd CEIEC staff demonstrated how pollution prevention activities (e.g., prompt clean-up of spills and pet waste) can protect water quality and wildlife habitat using a hands-on 3-dimensional watershed/nonpoint source EnviroScape model.
The 673rd CEIEC provided training to civilian and military personnel. This training, which is performed regularly, typically covers BMPs, pollution prevention, and other storm water-related information. The training normally occurs in a classroom setting and includes PowerPoint slides and handout materials.

On October 3 and 4, the 673 CES/CEIEC briefed the 673rd ABW Snow and Ice Control Committee and the 773rd CES Snow School on BMPs for preventing snow and ice control-related storm water pollution.

The 673rd CEIEC maintains the JBER Environmental Handbook. The handbook is a “how-to” guide for environmental compliance that is provided to JBER units as a small spiral-bound book. In the fall of 2018, 673rd CEIEC staff reviewed and updated the JBER Environmental Handbook.

Approximately 1,300 military personnel moved into on-base housing in 2018. Each tenant was provided with a tenant handbook that includes storm water pollution prevention (SWPP) rules.

The 673rd Civil Engineering Squadron (CES) continued its maintenance of permanent signboards posted in 2016. The signboards, which contain warnings about the contribution of pet waste to storm water pollution, are located in areas where base personnel walk their dogs:

- Along Ship Creek;
- In the area above the engineered wetland at JBER-E Outfall 3;
- In the Cherry Hill drainage area;
- In recreation parks; and
- In other sensitive areas where personnel exercise their dogs.

The majority of the storm drains on JBER were stenciled in 2017 with a SWPP message. In 2018, the 673 CEIEC purchased 100 storm inlet covers, 20 circular grates, and 84 manhole covers inscribed with the pollution prevention notice "Dump No Waste Drains to Waterways". Installation of the new covers and grates will begin in 2019.

Over 1,400 individuals received SWPP information in 2018 through training sessions, public outreach activities, and new tenant orientation.

2.1.2 Measurable Goals for the Next 12 Months

The measurable goals for JBER’s public education and outreach program over the next 12 months will be to:
● Develop, implement, and evaluate the on-going public education program to educate
the community about the ways to reduce impacts to storm water quality

● Continue to publish articles in the local newspaper or on base website regarding
SWPP.

● Continue creating and purchasing SWPP materials for key audiences and distribution
at annual base events. Continue to update and make available materials pertaining to
SWPP on the JBER Environmental webpage.

● Begin installation of manhole covers, circular grates and curb inlet grates.

● Continue to update the base website with new storm water management information
semi-annually.

It is the responsibility of the 673rd CES/Civil Engineer Installation Management
Environmental Compliance (CEIEC) Water Program personnel and the Environmental
Compliance Chief to see that these goals are achieved adequately and on time.

2.2 MCM 2 – Public Involvement and Participation

Section 3.2 of the JBER MS4 permit requires the following information in the Annual Report
regarding MCM 2:

● Describe the activities and target audiences for public involvement that the program
accomplished for the preceding 12 month period, including any monitoring and/or
survey results, number of storm drains stenciled, etc.

● Describe the procedure(s) for receiving and reviewing public comments.

● Describe the measurable goals for the public involvement/participation program over
the next 12 month period.

● List the dates by which JBER will accomplish each of the upcoming measurable goals.

● Identify the person(s) responsible for implementing and coordinating the public
involvement/participation activities.

2.2.1 MCM 2 Compliance Discussion

As in previous years, Storm Water Steering Committee meetings were held quarterly in 2018,
and the SWMP and annual reports are displayed online at the JBER Environmental webpage

In addition to public involvement in the storm water steering committee meetings, JBER
personnel participated in an installation-wide trash cleanup known as “Operation Clean
Sweep”. The event took place April 30 to May 6. During the clean-up event, areas around Ship Creek received extra attention in order to prevent litter and trash from entering the stream.

There is also a portal on the JBER Environmental website where the public can contact the Environmental Compliance personnel with any questions pertaining to environmental compliance issues and subjects. This is available at all times to the JBER public. Additionally, the personnel in the Environmental Compliance office are always available to take calls and emails about storm water questions and concerns. Those comments are addressed promptly within a day or two of receiving the comment.

2.2.2 Measurable Goals for the Next 12 Months

The Measurable Goals for the public involvement/participation program over the next 12 months include:

- Continue holding the storm water steering committee meetings quarterly.
- Continue to update the website with the newest annual reports, SWMP revisions, and any other SWPP information.
- Continue with community litter cleanup activities within the MS4.

It is the responsibility of the 673rd CES/CEIEC Water Program personnel and the Environmental Compliance Chief to see that these goals are achieved adequately and on time.

2.3 MCM 3 – Illicit Discharge Detection and Elimination

Section 3.3 of the JBER MS4 permit includes the following applicable requirements regarding MCM 3:

- Conduct or revise an existing hydrologic study of all roadway drainage structures within the MS4 to determine whether flows from those structures drain to waters of the United States.
- Conduct wet weather outfall inspections.
- Continue with the implementation of a program to detect and eliminate illicit discharges. The program must incorporate detection, identification of the source, and removal of non-storm water discharges, including illegal dumping, into the storm sewer system.
- Continue to maintain the information management system to track illicit discharges.
● Prohibit, to the extent allowable under federal, state, or local law, non-storm water discharges into the MS4. This can be accomplished through ordinance or other regulatory mechanism, such as a base Command Policy letter.

2.3.1 MCM 3 Compliance Discussion

The SWMP was updated in January 2018. The updated SWMP includes an inspection form for inspecting snow dumps for trash and pollution that might runoff into storm drains and a procedure for inspecting storm drain catch basins. Appendix D of the JBER SWPPP, updated November 2018, contains an illicit discharge detection and elimination guide for JBER personnel to use in meeting the requirements of MCM 3.

JBER completed the following goals in 2018:

● Conducted four wet weather outfall inspections; visual inspections of 7 outfalls to detect illicit, inappropriate, or undocumented non-storm water discharges:
  ○ 17 January 2018; No precipitation, snow melt event (JBER-E1, JBER-E2, JBER-E3, JBER-E4, JBER-E5, Six Mile Lake, and JBER-R1)
  ○ 18 and 21 June 2018; precipitation, < 1/2 inch in previous 48 hours (JBER-E1, JBER-E2, JBER-E3, JBER-E4, JBER-E5, Six Mile Lake, and JBER-R1)
  ○ 8 August 2018; precipitation, > 1/2 inch in previous 48 hours (JBER-E1, JBER-E2, JBER-E3, JBER-E4, JBER-E5, Six Mile Lake, and JBER-R1)
  ○ 16 October 2018; precipitation, < 1/2 inch in previous 48 hours (JBER-E1, JBER-E2, JBER-E3, JBER-E4, JBER-E5, Six Mile Lake, and JBER-R1)
  ○ No illicit, inappropriate, or undocumented non-storm water discharges were identified during these inspections.

● Conducted one dry weather inspection of 7 outfalls to identify visual evidence of pollution:
  ○ 12 and 14 September; No precipitation (JBER-E1, JBER-E2, JBER-E3, JBER-E4, JBER-E5, Six Mile Lake, and JBER-R1). No illicit, inappropriate, or undocumented non-storm water discharges were identified during these inspections.

● Completed inspection/maintenance on 100% of the oil/water separators on JBER.

● Conducted quarterly monitoring at five outfalls identified as JBER-E1, JBER-E2, JBER-E4, JBER-E5, and JBER-R1. The outfalls were monitored for flow, temperature, pH, dissolved oxygen, biochemical oxygen demand (BOD), chemical oxygen demand (COD), turbidity, total suspended solids (TSS), total aromatic hydrocarbons (TAH), and total aqueous hydrocarbons (TAqH). In addition, fecal coliform was monitored quarterly.
on the outfalls that discharged to Ship Creek (JBER-E4, JBER-E5, and JBER-R1). There were no exceedances in Alaska Water Quality Standards for the monitored parameters of pH, dissolved oxygen, BOD, COD, TSS, TAH and TAqH. There was an exceedance in two outfalls for fecal coliform, which was compared to the Federal Clean Water Act (CWA) Total Daily Maximum Load (TDML) of 20 Coliforms/100 milliliters (Col/100 mL), and not required by the MS4 permit. The fecal coliform concentrations at outfall JBER E-OF4 exceeded the 20 Col/100 mL during the June and August monitoring event (331 Col/100 m and 33 Col/100m, respectively). The fecal coliform concentration at outfall JBER-R-OF1 exceed the CWA TDML of 20 col/100 mL during the August and October monitoring events (673 Col/100m and 278 Col/100 m, respectively).

- Conducted inspections of nine snow dumps for signs of pollution and runoff during the spring, specifically, on 6 April and 9 May, 2018.

- Completed a hydrologic report based on a study conducted in 2017 of all roadway structures within the JBER MS4.


2.3.2 Measurable Goals for the Next 12 Months

Measurable goals for JBER for the next 12 months (Jan 2019- Dec 2019) are presented below:

- Update the comprehensive storm sewer map developed in 2016 of the MS4 system.

- Continue conducting wet weather outfall inspections to detect illicit, inappropriate, or undocumented non-storm water discharges.

- Continue conducting dry weather inspections of storm water discharge locations to identify illicit, inappropriate, or undocumented non-storm water discharges.

- Continue quarterly monitoring at five outfalls, for flow, temperature, pH, dissolved oxygen, turbidity, COD, BOD, TSS, total aqueous hydrocarbons, and total aromatic hydrocarbons.

- Continue inspecting snow dumps and airfields for signs of polluted runoff.

It is the responsibility of the 673rd CES/CEIEC Water Program personnel and the Environmental Compliance Chief to ensure that these goals are achieved adequately and on time.
2.4 MCM 4 – Construction Site Storm Water Runoff Control

Section 3.4 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 4:

- A copy of the ordinance or other regulatory mechanism used to require erosion, sediment, and waste controls at construction sites. If JBER has yet to develop the required regulatory mechanism, a plan and schedule for implementation must be included.

- A summary of the number of sanctions and enforcement actions taken by JBER to ensure compliance with the construction site ordinance during the previous 12-month period. To the extent allowable under JBER’s legal authority, sanctions may include both monetary and non-monetary penalties.

- A copy of the written requirements for appropriate erosion, sediment, and waste control BMPs at construction sites.

- A summary of the procedures for receipt and consideration of information submitted by the public.

- A summary of the number of sites inspected during the previous 12-month period, including a description of the site inspection procedures, how sites are prioritized for inspection and when and how often sites are inspected.

- A list of measurable goals for the construction site runoff control program, including dates by which JBER will achieve each of the measurable goals.

- The name and title of the person(s) responsible for coordination and implementation of construction site runoff control programs.

2.4.1 MCM 4 Compliance Discussion

JBER met the regulatory requirement for erosion, sediment, and waste controls at construction sites through the establishment of a Command Policy. The Command Policy for SWPP management at construction sites is described in Section 3.4.3.3 of the JBER SWMP, and the Command Policy Letter is included as Attachment 3 to the SWMP.

In 2018 there were 51 active construction projects on the installation. Thirteen of the 51 projects were greater than 1 acre in area and required an Alaska Construction General Permit. Permittee(s) of these projects were responsible for performing storm water inspections of these projects.

Multiple factors dictate how construction site inspections are prioritized at JBER. General site management practices and conditions during inspections determine the frequency of oversight visits. Three major factors influence priority:
● Location of the project relative to storm water conveyances and/or waters of the U.S.

● Project size

● Previous inspection results

Because construction site inspections performed by 673 CES/CEIEC staff are in addition to those performed by contractors, in-house inspection criteria differs somewhat from that in the Alaska Construction General Permit (ACGP), and aim to provide more of an overview of operations to ensure quality control.

The written requirements for appropriate erosion, sediment, and waste control BMPs at construction sites on JBER is contained in Engineering Technical Letter (ETL) 14-1: Construction and Operation and Maintenance Guidance for Storm Water Systems, 7 August, 2014. All projects on the installation involving ground disturbance areas greater than or equal to one acre and where storm water discharges enter waters of the U.S. must implement applicable BMPs in ETL 14-1. Proponents of projects disturbing less than one acre must submit an Erosion and Sediment Control Plan (ESCP) to 673rd CES/CEIEC for approval prior to ground disturbance. A sample ESCP and a copy of ETL 14-1 are provided as Attachments 4 and 5 to the JBER SWMP.

Public comments regarding the construction program are received and treated in the same way as described earlier in this document (see MCM-2, Public Participation and Involvement). MILCON projects are coordinated in conjunction with the sponsoring agency, generally the USACE.

### 2.4.2 Measurable Goals for the Next 12 Months

● Continue to implement the Command Policy to require appropriate management of construction site storm water runoff to ensure compliance with the SWMP and ACGP.

● Continue to implement ESCPs for all construction projects.

● Continue to implement plan review procedures for reviewing construction plans and project SWPPPs.

● Continue to implement standard language for inclusion in JBER construction contracts.

● Conduct continued training related to the construction requirements and BMPs outlined in the Command Policy Letter.

It is the responsibility of the JBER Water Program Manager and the 673rd Environmental Compliance Chief to ensure these goals are met.
2.5 MCM 5 – Post Construction Storm Water Management in New Development and Redevelopment

Section 3.5 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 5:

- A copy of the BMP design manual containing structural and non-structural BMPs that will be used to manage post-construction runoff from new development and redevelopment projects within the MS4. Include any specific priority areas for this program.

- An explanation of the design and performance features of the chosen BMPs, intended to minimize water quality impacts.

- A copy of the established ordinance or other regulatory mechanism used to address post-construction runoff control. If JBER has yet to develop the required regulatory mechanism, a plan and schedule for implementation must be included.

- A description of how long-term operation and maintenance for the selected BMPs will be ensured, including the organization responsible and their expected operation and maintenance schedule.

- A description of the plans to inform and educate developers and the public about appropriate project designs that minimize water quality impacts.

- A list of measurable goals for the post-construction runoff control program, including dates by which JBER will achieve each of the measurable goals.

- The name or title of the person(s) responsible for coordination and implementation of the post-construction storm water management plan.

2.5.1 MCM 5 Compliance Discussion

The manual containing structural and non-structural BMPs that all contractors are expected to follow for applicable construction and post-construction activities within the JBER MS4 is ETL 14-1. ETL 14-1 describes structural and non-structural BMPs that contractors must follow for applicable construction and post-construction activities within the JBER MS4. A copy of ETL 14-1 is provided as Attachment 5 to the JBER SWMP. Intended users of the manual include the following groups:

- Engineers,

- Construction managers and construction contractors,

- Inspection and maintenance personnel shop technicians,

- Equipment operators,
● USACE and U.S. Navy offices responsible for design and construction of Air Force facilities, and

● Environmental managers responsible for installation industrial storm water permits.

JBER considers ETL 14-1 to be the most applicable and comprehensive BMP design manual to implement within the MS4 to reduce the potential water quality impacts from construction and associated activities.

The main priority area of the JBER MS4 is the JBER-E airfield. During rain and snowmelt events, significant discharges are directed through a single conduit. The capacity of the current infrastructure has been designed to handle the normal discharge volumes. Therefore, new and post-construction on and adjacent to the airfield are heavily scrutinized and evaluated for potential impacts that could overload the airfield conveyance system.

JBER has implemented a Command Policy as a regulatory mechanism to ensure all installation personnel and contractors comply with post-construction SWPP requirements on the installation. The Command Policy letter has been distributed to relevant installation personnel, tenants, and contractors, and published on JBER's storm water webpage.

The ongoing operations and maintenance program at JBER is contingent upon Department of Defense funding. JBER implements all long-term operations and maintenance of post-construction BMPs through internal resources (773 CES) or through contractor support.

Unlike a typical MS4, where the public may construct according to building permits issued by their respective municipality, JBER is a federal installation that strictly controls all development. To illustrate this limitation, installation approval is necessary before residents may erect a fence or put in a garden. Residents must apply for a dig permit if they plan to disturb greater than four inches of soil. In the event that public projects outside JBER require ground disturbance within the installation boundary (such as when Anchorage Water and Wastewater Utility installed a new 54" line through JBER property), the 673rd CES/CEIEC is required to review and approve the plans prior to groundbreaking to ensure they meet JBER standards.

Developers operating on the installation are required to use designs found in ETL 14-1, or equivalent measures that are acceptable to, and approved by, JBER. Contractors, USACE, and departmental personnel are further educated, as funding allows, through construction training events sponsored by 673rd CES/CEIEC, such as the Certified Erosion and Sediment Control Lead courses offered in the past. Future training events will be offered by 673rd CES/CEIEC as funding allows.

Redevelopment projects on JBER currently include GI/LID strategies, which are required under Section 438 of the Energy Independence and Security Act (EISA) of 2007. EISA Section 438 states that “the sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning,
design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." JBER has been required to meet the requirements of Section 438 of EISA for several years.

### 2.5.2 Measurable Goals for the Next 12 Months

- Continue to implement the Command Policy to require appropriate management of post-construction site storm water runoff to ensure compliance with the SWMP and Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit for Storm Water Discharges for Large and Small Construction Activities (2016 CGP, AKR100000) (1 June 2017).

- Develop, implement and enforce a post-construction site runoff control program (1 June 2017).

- Adopt or develop and distribute a BMP design manual for post-construction evaluation (1 June 2018).

- Develop and implement an inspection schedule and long-term Post-Construction Operation and Maintenance Plan for post-construction BMPs (1 June 2018).

- Develop and conduct at least one training for local contracts, engineers, and tenants regarding the requirements of the Post-Construction Operation and Maintenance Plan and the green infrastructure/low impact development (GI/LID) strategy (1 June 2018).

- Develop a strategy for evaluating GI/LID projects (1 June 2018).

The JBER Water Program Manager and the 673rd CES/CEIEC Environmental Compliance Chief are responsible for meeting these goals.

### 2.6 MCM 6 – Pollution Prevention and Good Housekeeping for Municipal Operations

Section 3.6 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 6.

- A description of the activities, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to the MS4.

- A description of the employee-training program used to prevent and reduce storm water pollution including the targeted department personnel, frequency of such training, and a copy of training materials.

- A summary description of the controls for reducing or eliminating the discharge of pollutants from areas owned or operated by JBER, including but not limited to streets, roads, and highways, municipal parking lots, maintenance and storage yards, waste
transfer stations, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, and snow disposal sites operated by JBER.

- A description of procedures to ensure proper disposal of waste removed from the MS4 and MS4 operations including dredge spoil, accumulated sediments, floatables, and other debris.

- A description of procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices.

- A list of all industrial facilities owned or operated by JBER that discharge to the MS4, including industrial facilities that are subject to the APDES Multi-Sector General Permit (MSGP) or individual APDES permits for discharges of storm water associated with industrial activity, and/or facilities as identified as part of the inventory required by Part 3.3.1 of the MS4 Permit. JBER must include the permit tracking number(s) or a copy of the Notice(s) of Intent for each facility, as appropriate.

- A list of measureable goals for the pollution prevention and good housekeeping program, including dates by which JBER will achieve each of the measureable goals.

- The name and title of the person(s) responsible for coordination and implementation of the pollution prevention and good housekeeping program.

2.6.1 MCM 6 Compliance Discussion

The storm drain catch basins (at least 50%) at JBER are cleaned/inspected annually. The wash water from these events is collected, sediment is removed, and the water is then discharged into the sanitary sewer for further processing. Biannual street sweeping occurs prior to freezing conditions and again following break up. This is accomplished using wet-vacuum sweeper trucks. Snowplow drivers are instructed to watch for discolored snow that may indicate a POL release. If identified, POL spills are reported to 673rd CES/CEIEC and spill response is initiated. Additionally, 673rd CES/CEIEC staff perform periodic inspections of snow stockpiles to look for POL spills or trash debris. The majority of these inspections occur during melting conditions, when evidence of floatables and POLs can be more easily identified and addressed. Following complete snowmelt, an end of season inspection is performed to ensure there is no contaminated soil at stockpile locations. Should contaminated soil be discovered, it is collected and properly disposed of through the JBER Hazardous Waste Center. Due to storm water and wildlife concerns, facility personnel are instructed to keep dumpsters covered and closed when not in use.

673rd CES/CEIEC staff provide annual SWPP training to personnel at industrial facilities as required by the MSGP. Personnel that perform roads and grounds operations and maintenance, such as 773 CES, receive annual storm water training specific to their operations.
Activities performed at JBER that represent the greatest potential to contaminate storm water occur at industrial facilities. JBER has implemented an aggressive SWPP program at these locations that incorporates many complimentary Air Force procedures and directives, as well as state and federal environmental requirements. At the heart of this program is the ongoing implementation of BMPs recommended by the U.S. Environmental Protection Agency and Alaska Department of Environmental Conservation (ADEC) covering such categories as minimizing exposure, good housekeeping, proper materials and waste management, BMPs for bulk fueling and fuel storage, etc. Practices detailed in the installation’s industrial SWPPP, SWMP, and Spill Prevention, Control, and Countermeasure Plan help guarantee the overall success of the SWPP program.

Roads and grounds personnel are trained and aware of SWPP requirements and report issues observed while conducting field duties. Reported issues are addressed as soon as practicable to minimize impacts to storm water. Floatables are collected and properly disposed of in dumpsters. Trash collected from dumpsters around the installation, including residential areas, is disposed of at the Anchorage Regional Landfill in Eagle River. Uncontaminated sediment from road sweeping and other activities is re-used for road sanding and maintenance of gravel roads on the installation. Potentially contaminated sediment and soils are sampled; those determined to be uncontaminated are reused and those determined to be contaminated are properly disposed of. All State of Alaska and federal requirements are adhered to during these activities.

During the winter, ice dams are removed to prevent flooding. This is conducted under Alaska Department of Fish and Game permit FH 15-II-0169. Section 3.6.6.5 of the JBER SWMP discusses flood control measures that have been implemented in the past. Roads and grounds personnel conduct preventive maintenance of MS4 infrastructure as necessary to reduce the potential for seasonal flooding to occur. This work includes maintaining the integrity of check dams, using heating coils installed in select culverts, steam thawing culverts when necessary, and reseeding areas that have experienced erosion during peak flows.

In 2018, JBER finalized a drainage basin floodplain study of the installation. The study generated hydrologic data required under JBER’s MS4 Permit that can be used to understand how development and redevelopment projects can potentially affect the installation's surface water quality. The study was accomplished by using geographic information system (GIS) and performing storm water and surface runoff calculation using the USACE's Hydrologic Engineering Center (HEC)-Hydrologic Modeling System (HMS) model. The study updated the previous HEC-River Analysis System model of Ship Creek with new river cross sections and other data. The HEC-HMS model was used to model developed areas of JBER and determine the volume of surface runoff from impervious areas (e.g., paved roads, buildings, and paved parking areas). The calculations were completed for 5-, 10-, 20-, 100-, and 500-year storm events. This information was used to classify each of the drainages reach, including the floodplains on JBER.
With the exception of Bryant Airfield at JBER-R, all industrial facilities on the installation operate under JBER's MSGP. The Alaska Army National Guard manages six Sector S (Air Transportation) facilities in addition to the Bryant Airfield under a separate MSGP. There were 76 industrial facilities operating at JBER under both permits at the time this report was prepared. These facilities are listed in Table 1 of the SWMP.

2.6.2 Measurable Goals for the Next 12 Months

- Continue to conduct MSGP SWPPP inspections.

- Continue to implement maintenance standards for storm water facilities.

- Complete a study of the effectiveness of current street sweeping operations, storm drain cleaning operations and other base activities with potential for storm water impacts (1 June 2019).

- Continue to train employees and contractors whose job functions may impact storm water quality.

The JBER Water Program Manager and the 673rd CES/CEIEC Environmental Compliance Chief are responsible for implementing these goals.
3.0 ADDITIONAL ANNUAL REPORTING REQUIREMENTS

3.1 Inspections

JBER must track and report the number of inspections conducted during each year of the Permit, as well as the number of official enforcement actions taken. As stated earlier in this report, the Command Policy letter for storm water compliance serves as the regulatory mechanism to enforce the storm water program. There were no enforcement actions taken in response to MS4 permit violations during the reporting period and stakeholders and user groups executed their responsibilities satisfactorily with regard to installation-wide storm water management.

Industrial facilities on the installation are inspected quarterly under the 2015 MSGP for storm water discharges associated with industrial activity (2015 MSGP, AKR060000). These inspections occur according to calendar year quarters. There were four full calendar quarters during this reporting period and 337 inspections of 85 industrial facilities were conducted. Each industrial outfall is monitored visually for the presence of floatables, odor, erosion, structural integrity, vegetation conditions, and other parameters.

At staffed locations such as active construction sites and industrial facilities, inspectors convey results to appropriate personnel immediately after inspections to facilitate compliance as efficiently as possible. Any BMPs or conditions that otherwise need repair, improvement, or replacement are expected to be addressed as required, or as soon as practicable. SWPP inspection results are maintained by the 673rd CES/CEIEC Water Program Manager.

3.2 Annual Review and Update of the SWMP

Section 4.3.3.1 of the MS4 permit requires annual review and, if needed, updating of the SWMP. The next annual review is scheduled for the spring of 2019.
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4.0 EVALUATION OF OVERALL PROGRAM EFFECTIVENESS

Part 4.2 of the JBER MS4 permit states the following:

At least annually the permittee must evaluate its compliance with the permit conditions, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals for each of the minimum control measures in Part 3.0. This evaluation of program compliance must be documented in the Annual Report.

JBER has substantially met all the applicable requirements for the MS4 permit, as described in previous sections of this document, and is therefore in compliance with the MS4 permit requirements for 2018. JBER is committed to permit compliance and will continue to implement BMPs toward satisfying the measurable goals identified in the SWMP as efficiently as possible and as funding and Air Force mission allows.
Appendix A:

Summary Annual Report
ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
MS4 – Summary Annual Report Form

1. MS4 Information

MS4 Permit Number: AKS-053561
Name of MS4: Joint Base Elmendorf-Richardson (JBER)
Name of Contact Person (First): Runck
(Last): Sarah
Name of Contact Person (Title): Water Quality Program Manager
Telephone (including area code): 907-384-0250
Email: sarah.runck@us.af.mil
Mailing Address: 724 Quartermaster Road
City: JBER
State: Alaska
Zip Code: 99505
What size population does your MS4 serve?: 35,000
What is the reporting period for this report? (mm/dd/yyyy) From 01/01/2018 to 12/31/2018

2. Water Quality Priorities
A. Does your MS4 discharge to waters listed as impaired on a state 303(d) list? ☑ Yes ☐ No
B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4. Use a new line for each impairment, and attach additional pages as necessary.

<table>
<thead>
<tr>
<th>Impaired Water</th>
<th>Impairment</th>
<th>Approved TMDL</th>
<th>TMDL assigns WLA to MS4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship Creek</td>
<td>Fecal Coliform Bacteria</td>
<td>☑ Yes</td>
<td>☑ No</td>
</tr>
</tbody>
</table>

C. What specific sources contributing to the impairment(s) are you targeting in your storm water program?
No known activities at JBER contribute to impairments. BMPs are in place for pet waste management, storm water control (infiltrations basins).

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? ☐ Yes ☑ No
E. Are you implementing additional specific provisions to ensure their continued integrity? ☐ Yes ☑ No
3. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants?  
   - Yes ☑  - No ☐

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?  
   - Pet waste, POLs, loose trash, dumpster runoff, household chemicals, and general urban runoff.

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.  
   - See Section 8

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your storm water program?  
   - Yes ☑  - No ☐

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:  
   - Erosion and sediment control requirements?  
     - Yes ☑  - No ☐
   - Other construction waste control requirements?  
     - Yes ☑  - No ☐
   - Requirement to submit construction plans for review?  
     - Yes ☑  - No ☐
   - MS4 enforcement authority?  
     - Yes ☑  - No ☐

B. Do you have written procedures for:  
   - Reviewing construction plans?  
     - Yes ☑  - No ☐
   - Performing inspections?  
     - Yes ☑  - No ☐
   - Responding to violations?  
     - Yes ☑  - No ☐

C. Identify the total number of active construction sites ≥ 1 acre in operation in your jurisdiction during the reporting period.  
   - 13

D. How many of the sites identified in 4.C did you inspect during this reporting period?  
   - 13

E. Describe, on average, the frequency with which your program conducts construction site inspections.  

F. Do you prioritize certain construction sites for more frequent inspections?  
   - If Yes, based on what criteria?  
     - Yes ☑  - No ☐

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:  
   - Notice Of Violation  
     - Yes ☑  - No ☐  No Authority ☑
   - Administrative Fines  
     - Yes ☑  - No ☐  No Authority ☑
   - Stop Work Orders  
     - Yes ☑  - No ☐  No Authority ☑
   - Civil Penalties  
     - Yes ☑  - No ☐  No Authority ☑
   - Criminal Actions  
     - Yes ☑  - No ☐  No Authority ☑
   - Administrative Orders  
     - Yes ☑  - No ☐  No Authority ☑
   - Other  
     - Yes ☑  - No ☐  No Authority ☑

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction?  
   - Yes ☑  - No ☐

I. What are the 3 most common types of violations documented during this reporting period?  
   - a. N/A  
   - b.  
   - c.  

J. How often do municipal employees receive training on the construction program?  
   - See Section 8.
5. **Illicit Discharge Elimination**

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system?  
   - Yes  
   - No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system?  
   - Yes  
   - No

C. Identify the number of outfalls in your storm sewer system.  
   - 7

D. Do you have documented procedures, including frequency, for screening outfalls?  
   - Yes  
   - No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?  
   - 7

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage?  
   - 7

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.  
   - See Section 8.

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges?  
   - Yes  
   - No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges?  
   - Yes  
   - No

J. During this reporting period, how many illicit discharges/illegal connections have you discovered?  
   - 0

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?  
   - N/A

L. How often do municipal employees receive training on the illicit discharge program?  
   - Annually

6. **Storm Water Management for Municipal Operations**

A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
   - All public parks, ball fields, other recreational facilities and other open spaces  
     - Yes  
     - No
   - All municipal fleet and building maintenance activities  
     - Yes  
     - No
   - All municipal construction activities, including those disturbing greater than 1 acre  
     - Yes  
     - No
   - All municipal storm water system maintenance  
     - Yes  
     - No
   - All municipal snow disposal site operation and maintenance activities  
     - Yes  
     - No
   - Other  
     - Yes  
     - No

B. Are storm water inspections conducted at these facilities?  
   - Yes  
   - No

C. If Yes, at what frequency are inspections conducted?  
   - Quarterly

D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).  
   - See Section 8.

E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection?  
   - Yes  
   - No

F. If Yes, which activities and/or facilities receive most frequent inspections?  
   - N/A

G. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management?  
   - Yes  
   - No

H. If yes, do you also provide regular updates and refreshers?  
   - Yes  
   - No
I. If so, how frequently and/or under what circumstances?  

See Section 8.

7. **Long-term (Post-Construction) Storm Water Measures**

A. Do you have an ordinance or other regulatory mechanism to require:  
   - Site plan reviews for storm water/water quality of all new and re-development projects?  
     - Yes ☑️  
     - No ☐️
   - Long-term operation and maintenance of storm water management controls?  
     - Yes ☐️  
     - No ☑️
   - Retrofitting to incorporate long-term storm water management controls?  
     - Yes ☑️  
     - No ☐️

B. If you have retrofit requirements, what are the circumstances/criteria?  

N/A

C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?  

During the environmental impact analysis process, 673 CES/CEIEC staff review projects and can request to review storm water plans.

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development?  

- Yes ☑️  
- No ☐️

E. Do these performance or design standards require that pre-development hydrology be met for:  
   - Flow volumes  
     - Yes ☑️  
     - No ☐️
   - Peak discharge rates  
     - Yes ☑️  
     - No ☐️
   - Discharge frequency  
     - Yes ☑️  
     - No ☐️
   - Flow duration  
     - Yes ☑️  
     - No ☐️

F. Please provide the URL/reference where all post-construction storm water management standards can be found.

http://www.jber.af.mil/Services-Resources/Environmental.aspx

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection?  

6

H. How many of the plans identified in 7.G were approved?  

6

I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period?  

N/A (Federal Installation)

J. How many of the practices/facilities identified in 7.I were found to have inadequate maintenance?  

N/A

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?  

per MS4 permit

- Yes ☑️  
- No ☐️

L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities?  

0

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain storm water management practices?  

Yes

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance?  

- Yes ☑️  
- No ☐️

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system?  

Every 3 years and as funding allows

P. How often do municipal employees receive training on the post-construction program?
8. Additional Information

Please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

3.C In the spring, the 673 CES/CEIEC delivered SWPP demonstrations to military children with special needs and their families using a 3-dimensional watershed/nonpoint source EnviroScape model during an event hosted by the Air Force's Exceptional Family Member Program. The 673 CEIEC provided regular SWPP training to civilian and military personnel throughout the year. In the fall, the 673 CES/CEIEC briefed the 673rd ABW Snow and Ice Control Committee and the 773rd CES Snow School on BMPs for preventing snow and ice control-related storm water pollution, and it reviewed and updated the JBER Environmental Handbook. The 673 CES continued its maintenance of permanent signboards posted in 2016. The signboards, which contain warnings about the contribution of pet waste to storm water pollution, are located in areas where base personnel walk their dogs. These activities were accomplished to meet the requirements of MCM 2.

4.J. Construction storm water management, including training, is in accordance with MS4 permit requirement MCM 4, JBER Command Policy Letter dated 11 December 2014, and U.S. Air Force Engineering Technical Letter (ETL) 14-1. Training for construction personnel is generally held every 3 years depending on funding allocation.

5.G. Screening for illicit discharges is done during normal quarterly storm water inspections, as described in JBER's SWMP and MS4 permit requirement MCM 3. JBER has identified potential problem areas for illicit discharges and has implemented inspection and preventative maintenance programs to reduce the likelihood of illicit discharges.

6.D. Storm water management practices have been developed for industrial operations covered by MSGP AKR060000 (Sectors K, P, and S), construction activities, and MS4 infrastructure maintenance. MSGP and construction activity practices are described in the JBER SWPPP, and MS4 maintenance practices are described in the JBER SWMP.

6.A. Inspections of 10 Snow Dumps are conducted biannually, when snow melt is occurring. The 2018 inspections were conducted on April 6, 2018 and May 9, 2018. Snow dump operators are provided training on storm water protection measurements in October of every year.

6.I. General storm water awareness training is held biannually for base personnel. Facility Managers receive additional monthly training and unit environmental coordinators receive quarterly training. This training is designed to meet the requirements of MS4 permit requirement MCM 6.
Certification Statement and Signature

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

Per Appendix A, Part 1.12.2 This report to be signed as follows: For a municipal, State, Federal, or other public facility, by either a principal executive or ranking elected official; for a corporation, a responsible corporate officer.

[Signature]

1/28/2017

[Date]
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