
2023 MS4 ANNUAL DETAILED REPORT

Alaska Pollutant Discharge Elimination System

Municipal Separate Storm Sewer System

Permit Number AKS053651

Joint Base Elmendorf-Richardson

February 2023

Prepared For

**Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street**

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Abbreviations

673 CES/CEIEC	673 rd Civil Engineering Integrated Environmental Compliance/ Civil Engineering Squadron
AAFES	Army and Air Force Exchange Service
ACGP	Alaska Construction General Permit
ADEC	Alaska Department of Environmental Conservation
AK ARNG	Alaska Army National Guard
APDES	Alaska Pollutant Discharge Elimination System
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
CESCL	Certified Erosion and Sediment Control Lead
COD	Chemical Oxygen Demand
col/100mL	coliforms per 100 mL
EO	Executive Order
ESCP	Erosion and Sediment Control Plan
ETL	Engineering Technical Letter
FFRMS	Federal Flood Risk Management Standard
HEC	Hydrologic Engineering Center
HMS	Hydrologic Modeling System
GIS	Geographic Information System
GI/LID	Green Infrastructure/Low Impact Development
JBER	Joint Base Elmendorf-Richardson
JBER-E	JBER-Elmendorf
JBER-R	JBER-Richardson
MCM	Minimum Control Measures
mg/L	milligrams per liter
MS4	Municipal Separate Storm Sewer System
NTU	Nephelometric Turbidity Unit
RAS	River Analysis System
POLs	Petroleum, Oil, and Lubricants
SWMP	Storm Water Management Plan
SWPP	Storm Water Pollution Prevention
SWPPP	Storm Water Pollution Prevention Plan
TAH	Total Aromatic Hydrocarbons
TAqH	Total Aqueous Hydrocarbons
TSS	Total Suspended Solids
U.S.	United States
USACE	U.S. Army Corps of Engineers
WQS	Water Quality Standard

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, Alaska Pollutant Discharge Elimination System (APDES) No. AKS053651. The 673rd Civil Engineering Squadron/Civil Engineering Integrated Environmental Compliance (673 CES/CEIEC) is the office of primary responsibility for compliance with the MS4 Permit.

Part 4.3 of the MS4 Permit requires that JBER submit both a Summary Annual Report and a Detailed Annual Report. This is the 4th Year Annual Report, which covers the period January through December 2022. The 2022 Summary Annual Report form 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 February 2023. The SWMP can be accessed at <https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>.

This report is organized to match the six Minimum Control Measures (MCMs) listed in Part 3 of the MS4 Permit, as follows:

MCM 1. Public Education and Outreach

MCM 2. Public Involvement and Participation

MCM 3. Illicit Discharge Detection and Elimination

MCM 4. Construction Site Storm Water Runoff Control

MCM 5. Post-Construction Storm Water Management in New Development and Redevelopment

MCM 6. Pollution Prevention and Good Housekeeping for Base Operations

2.0 ANNUAL MCM REPORTING REQUIREMENTS

Reporting requirements for each individual MCM are addressed below.

2.1 MCM 1 – Public Outreach and Education

Part 3.1.4 of the MS4 Permit requires the following information in the Annual Report regarding MCM 1:

- Describe 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 measurable goals for the public education and outreach program for the next 12-month period.
- The dates by which the measurable 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 2022, JBER 673 CES/CEIEC provided storm water pollution awareness materials at several public outreach and education events. The goal of the 673 CES/CEIEC is to increase the number of organizations from the major target groups that receive SWPP awareness training. Major target groups include industrial facility employees, roads and grounds maintenance services on-base housing residents, pet owners and veterinarian services, and trash management services. 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).

There were two in-person outreach events that 673 CES/CEIEC personnel attended, where outreach materials were handed out and any questions answered. These two events were the Alaska 101 put on by JBER to incoming residents, including active-duty personnel and their families. To continue compliance with outreach requirements, the 673 CES/CEIEC created three informational pamphlets related to storm water pollution prevention and

provided them to Aurora Housing, the on-base housing management company. The pamphlets were targeted at typical residential stormwater pollution prevention issues, including at-home car washing, lawn chemical usage, pet waste, and household chemical disposal. The pamphlets were published with the tenant handbook provided by Aurora Housing to all on-base residents and on JBER's Environmental website. Each tenant that moved into on-base housing in 2022 was provided with a tenant handbook that includes SWPP rules. Copy of the pamphlets are provided in Appendix E.

In 2022, there were 52 Newcomer's briefings with approximately 2,600 attendees to introduce recently arrived airmen and families to JBER and south-central Alaska. The 673 CES/CEIEC presented a stormwater pollution awareness slide during the briefings and distributed environmental outreach materials, including storm water pollution prevention (SWPP) pamphlets, recycling and hazardous waste disposal information, magnets and hand sanitizer containing SWPP messages, and dog waste bag caddies.

The 673 CES/CEIEC provided materials to all Unit Environmental Coordinators covering general stormwater information for industrial facilities and best management practices for oil/water separators and floor drains. A copy of the materials is provided in Appendix D.

The 673 CES/CEIEC delivered storm water training to 100 JBER staff responsible for snow and ice control activities during training on 27 September 2022. The training discussed how the permits limit pollutant discharges, are closely monitored, and how the base remains in compliance. Snow dispersal areas and stormwater monitoring areas were shown on maps, and the importance of Ship Creek and other JBER waters were discussed. A copy of the training is provided in Appendix E.

The 673 CES/CEIEC delivered storm water training to Aero Club regarding stormwater pollution prevention, spill response, and invasive species at Sixmile Lake. The training discussed what stormwater is and best management practices for stormwater pollution prevention. A copy of the training is provided in Appendix E.

The 673 CES/CEIEC maintains the JBER Environmental Handbook, which is a "how-to" guide for environmental compliance that is provided to airmen and contractors as a small spiral-bound book. Over 200 copies of the handbook were printed in 2019, and continue to be distributed at outreach, training, and inspections events.

The 673 CES/CEIEC provided coffee sleeves to local coffee shops on JBER with the JBER water quality mascot on it. These coffee sleeves are being distributed on JBER. See Appendix E for a copy of the sleeve.

The 673 CES/CEIEC provided SWPP outreach material to the JBER Veterinary Treatment Facility. Dog waste bag caddies and scoop the poop posters were provided to the Veterinary Treatment Facility to encourage proper disposal of dog waste on base.

The 673 CES/CEIEC 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.

It is the responsibility of the 673 CES/CEIEC Water Quality Program Manager and the Unit Environmental Coordinators to see that these goals are achieved adequately and on time.

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 creating and purchasing SWPP materials for key audiences and distribution at annual base events. Increase the number of events and participants where outreach and education materials can be presented to the public.
- Increase the number of industrial facilities and personnel who receive SWPP training and decrease the number and severity of spills and water quality related compliance findings.
- Publish relevant notices with MS4 information in local publications and on the JBER Environmental webpage.
- Update and provide relevant outreach materials pertaining to SWPP on the JBER Environmental webpage.

2.2 MCM 2 – Public Involvement and Participation

Part 3.2.6 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 drain covers, etc.
- Describe the procedure(s) for receiving and reviewing public comments.

- List 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

In 2022, the 673 CES/CEIEC conducted the Storm Water Steering Committee meetings virtually via conference call on March 29, June 16, September 29, and December 14. Attendees included members of several on-base units, Doyon Utilities staff, and Alaska Department of Environmental Conservation (ADEC) staff. Meetings typically include a presentation by the 673 CES/CEIEC. Topics included and overview of the JBER Water Quality Program and MS4 Permit requirements; definition of stormwater; construction season planning; types of BMPs; implementation of GI/LID Plan; base restoration program overview; snow clearing and disposal considerations. A summary of each meeting is provided in Appendix F.

The most recent SWMP and annual reports were displayed online on the JBER Environmental webpage. The dedicated webpage for the JBER Water Quality Program is located at <https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>.

Storm drains on JBER have been stenciled with a SWPP message periodically since 2017. In 2022, 102 existing storm drains were stenciled and 13 storm drain covers were replaced with the forged pollution prevention notice.

Lastly, 673 CES/CEIEC personnel were available to the public to receive and promptly respond to calls and emails regarding storm water quality concerns and questions.

It is the responsibility of the 673 CES/CEIEC Water Quality Program Manager and the Unit Environmental Coordinator to see that these goals are achieved adequately and on time.

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 storm water steering committee meetings on a quarterly basis and increase the number of on base units represented.
- Update the JBER environmental webpage with the newest storm water steering committee meeting minutes, annual reports, and SWMP revisions.

- Conduct community litter cleanup activities within the MS4. Manage the installation wide spring litter cleanup event for individual units.
- Install at least 50 stencils, medallions, manhole covers, circular grates, or curb inlet grates with SWPP messages or icons.

2.3 MCM 3 – Illicit Discharge Detection and Elimination

Part 3.3.10 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 3:

- A description of the criteria used to prioritize investigations in areas suspected of having illicit discharges, for example: targeting older areas of the base, areas of high public complaints, and areas of high recreational value or high environmental value such as parks, and drinking water sources;
- A description of procedures used to locate and remove illicit discharges, including detection methods;
- A summary of all dry weather testing conducted to date, and of permittee activity to remove any illicit discharges identified;
- A copy of the established ordinance or other regulatory mechanism (if changed) used to prohibit illicit discharges into the MS4. If the permittee has yet to develop this local requirement, describe the plan and schedule for doing so, and progress towards implementation;
- A description of enforcement policy and jurisdiction. The program must include procedures for coordination with adjacent municipalities and/or state or federal regulatory agencies to address situations where investigations indicate the illicit discharge originates outside the permittee's jurisdiction. Where a permittee lacks legal authority to establish enforceable rules or if an illicit discharger fails to comply with procedures or policies established by the permittee, the program must include procedures for notifying DEC for assistance in enforcement of this provision of the permit;
- A description of the methods used over the previous 12 month period to inform the public and/or train employees and tenants about illicit discharges and the improper disposal of waste;
- A list of measurable goals for the illicit discharge detection and elimination program for the next 12 month period, and the dates by which the permittee will achieve each of the measurable goals; and

- The name and title of the person(s) responsible for coordination and implementation of the illicit discharge detection and elimination program.

2.3.1 MCM 3 Compliance Discussion

The existing command policy letter JBER-70 continues to be in effect.

The revised SWMP includes several revisions to the list of industrial facilities. Several newly identified industrial facilities were added to the list. The list is reviewed quarterly during MSGP quarterly inspections. Inspections were completed on 100% of the oil/water separators on JBER in 2022.

The 673 CES/CEIEC conducted quarterly visual assessments at each outfall as part of its requirements under the MSGP.

Monthly inspections of airfields during the deicing season (October-April) were conducted to detect illicit, inappropriate, or undocumented discharges from deicing fluids. These inspections occurred on 27 January 2022, 28 February 2022, 16 March 2022, 5 April 2022, 18 October 2022, 18 November 2022, and 20 December 2022.

Storm water pollution inspections were performed at the following three fueling/service stations which are not regulated under the MSGP:

- Army and Air Force Exchange Service (AAFES) Mini Mall Fuel Station on D Street;
- AAFES Fill Station on Westover Drive;
- AAFES Service Station on Arctic Warrior Drive;

Storm water pollution inspections were performed at the following additional facilities:

- Outdoor Recreation Area (dog park) on the Elmendorf portion of JBER;
- Outdoor Recreation Area (dog park) on the Richardson portion of JBER;
- Outdoor Recreation Area at Building 7301;
- Seven RV Storage Yards; and
- The RV Rental Maintenance facility at Building 794.

Twelve snow dumps were inspected for signs of pollution and runoff during spring snowmelt on 2 February 2022 and 5 May 2022. No significant signs of pollution and runoff were observed.

Quarterly monitoring was also conducted at five storm water outfalls to detect illicit, inappropriate, or undocumented non-storm water discharges. No illicit, inappropriate, or

undocumented non-storm water discharges were identified during these inspections. The inspection and monitoring dates are summarized in the table below. Monitoring analysis results are provided in Appendix C.

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). Per email correspondence with ADEC, dated March 17, 2020, sampling for fecal coliform is not required at JBER.

Outfall	First	Second	Third	Fourth
JBER-E-OF1	24 February 2022 (snow melt)	1 August 2022	5 August 2022	13 September 2022
JBER-E-OF2	11 March 2022 (snow melt)	5 April 2022	1 August 2022	13 September 2022
JBER-E-OF4	5 April 2022 (snow melt)	1 August 2022	5 August 2022	20 October 2022
JBER-E-OF5	Not sampled	Not sampled	Not sampled	Not sampled
JBER-R-OF1	24 February 2022 (snow melt)	5 August 2022	13 September 2022	20 October 2022

Certain outfalls have minimal periods where there is sufficient runoff for sample collection after a rainfall event. Outfall JBER-E3 is an engineered wetland system for remediation of contaminated groundwater and was not monitored but was visually inspected.

2.3.2 Measurable Goals for the Next 12 Months

The Measurable Goals for the illicit discharge detection and elimination program over the next 12 months include:

- Conduct four wet weather outfall inspections at each outfall to detect illicit, inappropriate, or undocumented non-storm water discharges.
- Conduct one dry weather inspection at each outfall to identify illicit, inappropriate, or undocumented non-storm water discharges.
- Conduct quarterly monitoring at five outfalls, for flow, temperature, pH, dissolved oxygen, turbidity, COD, BOD, TSS, TAqH, and TAH.
- Conduct two inspections of each snow dump area and monthly inspections airfields during deicing season for signs of polluted runoff.

It is the responsibility of the 673 CES/CEIEC Water Quality Program Manager and the Unit Environmental Coordinator to see that these goals are achieved adequately and on time.

2.4 MCM 4 – Construction Site Storm Water Runoff Control

Part 3.4.9 of the JBER MS4 permit requires the following information in the Annual Report regarding MCM 4:

- A copy of the established 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 number of site plan reviews conducted:
- A description 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 7.4 of the JBER SWMP and included as Appendix 3 to the SWMP.

In 2022, there were approximately 12 active construction projects greater than 1 acre in area and authorized under a Construction General Permit (CGP). Ten of the permitted construction projects were completely within the urbanized area and were all inspected at least once in 2022 by 673 CES/CEIEC for MS4 compliance. Permittees of these projects are responsible for performing storm water inspections of these projects; construction site inspections performed by 673 CES/CEIEC staff are supplemental to those performed by

permittees. Therefore, inspection criteria for 673 CES/CEIEC differs somewhat from that of the Alaska CGP and the general goal is to provide an overview of operations to ensure quality control.

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 JBER's urbanized area, storm water conveyances, and/or waters of the U.S.
- Project size
- Previous inspection results

The written requirements for appropriate erosion, sediment, and waste control BMPs at construction sites on JBER are 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 Engineering Technical Letter (ETL) 14-1, which is published by the Air Force Civil Engineering Center. Proponents of projects disturbing less than one acre must submit an Erosion and Sediment Control Plan (ESCP) to 673 CES/CEIEC for approval prior to ground disturbance. A sample ESCP is provided as Appendix 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). Military construction projects are coordinated in conjunction with the sponsoring agency, generally the USACE.

JBER issued a memorandum on 28 December 2020 directed to personnel associated with construction projects and programs outlining existing documents and procedures addressing stormwater protection practices for post-construction activities (including the Green Infrastructure/Low Impact Development (GI/LID) Plan, the Snow and Ice Control Plan (O-Plan 32-1002), and parking lot housekeeping measures. The 28 December 2020 memorandum fulfilled the Post-Construction Activity Manual (PCAM) requirement of JBER's MS4 permit.

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 the Alaska CGP.
- 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 Quality Program Manager and the 673rd Unit Environmental Coordinator to ensure these goals are met.

2.5 MCM 5 – Post Construction Storm Water Management in New Development and Redevelopment

Part 3.5.10 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. Intended users of the manual include the following groups:

- Design engineers,
- Construction managers and construction contractors,
- Inspection and maintenance personnel shop technicians,
- Equipment operators,
- USACE and U.S. Navy officers 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, any construction project near the airfield is heavily scrutinized and evaluated for potential impacts that could overload the storm water drainage 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 are contingent upon Department of Defense funding. JBER implements all long-term operations and maintenance of post-construction BMPs through internal resources (773rd 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 similarly 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 673 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 the 673 CES/CEIEC, such as the Certified Erosion and Sediment Control Lead (CESCL) course. The 673 CES/CEIEC last sponsored a two-day CESCL course on JBER in 2019. The SWMP requires that these courses be given at least once every two years. Future training events will be offered 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 of 2007, which states “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.”

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 (2021 CGP, AKR100000).
- Continue to implement and enforce a post-construction site runoff control program.

The JBER Water Quality Program Manager and the 673 CES/CEIEC Unit Environmental Coordinator are responsible for meeting these goals.

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

Part 3.6.6 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 floatable debris 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, copy of sign-in sheet, 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, floatable debris, 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 measurable goals for the pollution prevention and good housekeeping 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 the pollution prevention and good housekeeping program.

2.6.1 MCM 6 Compliance Discussion

JBER conducts storm drain catch basin cleaning and street sweeping activities in order to minimize impacts of urban development to the storm water drainage system. Catch basins capture sediment, road debris, trash, and a limited amount of other potential pollutants such as oil and grease, organic material, and nutrients. Sand and salt are applied in high quantities to maintain a certain level of safety for operating vehicles in the winter. Sand and salt can then become storm water pollutants, however street sweeping is used to mitigate the amount of material left in the environment.

Annually, JBER inspects tries to inspect at least 1/3 of the storm drain catch basins on base. The Roads and Grounds contractor uses a vacuum truck to clean storm drain catch basins and piping. JBER-E street sweeping is performed by the 773rd CES, JBER-R street sweeping is performed by a 773rd CES contractor, and family housing street sweeping is performed by an Aurora Military Housing contractor. Street sweeping typically occurs during the period of 15 March – 30 September. Most of the sweeping takes place immediately after spring break-up to collect traction sand and other road debris; however, street sweeping also occurs on an as-needed basis throughout the summer months until winter freeze-up with the objective of collecting trash, grass clippings, sediment, and leaves. Street sweeping is accomplished using a variety of street sweeping technologies (e.g., vacuum sweepers, mechanical broom

sweepers, and regenerative air sweepers) on JBER's airfield, street, parking lot, and sidewalk surfaces. Wet sweep methods are used to control fugitive dust. Traction sand and other materials swept up from JBER's roads and parking lots are screened to remove garbage and other foreign material, after which the sand is mixed with new sand and stored for reuse for the following winter. Wash water from catch basin and street sweeping events is collected, sediment is removed from the wash water, and the water is discharged into the sanitary sewer for further processing. An estimated 40% of traction sand applied to JBER's airfield, street, parking lot, and sidewalk surfaces is recovered by street sweeping; this low recovery is partly attributed to the fact that traction sand applied to unpaved surfaces is introduced into the roadbed material during summer grading and is unrecoverable.

Snowplow drivers are instructed to watch for discolored snow that may indicate a POL or other automotive fluid release. POL spills are reported to the 673 CES/CEIEC and spill response is initiated. Additionally, 673 CES/CEIEC staff perform periodic inspections of snow stockpiles to look for POL spills, trash, and other storm water pollutants. The majority of these inspections occur during melting conditions, when evidence of floatable debris 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.

Staff from the 673 CES/CEIEC 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. Roads and grounds personnel maintain a covered salt storage facility on base, which helps prevent contact between precipitation and stored salt. Road sand is stored at facilities that prevent erosion and sedimentation of the materials.

Activities performed at JBER that represent the greatest potential to contaminate storm water typically 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 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 made aware of SWPP requirements and are directed to report issues observed while conducting field duties. Reported issues are addressed as soon as practicable to minimize impacts to storm water. Floatable debris 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. 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 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.

All industrial facilities on the installation operate under JBER's MSGP, except some Alaska Army National Guard facilities at JBER-R. The Alaska Army National Guard manages six Sector S (Air Transportation) facilities, including the Bryant Airfield Runway, under a separate MSGP. At the time this report was prepared, there were 96 industrial facilities operating at JBER under both permits. These facilities are listed in Table 2 of the SWMP.

2.6.2 Measurable Goals for the Next 12 Months

- Continue to conduct SWPP inspections.
- Continue to implement maintenance standards for storm water facilities.
- Continue to review and study the effectiveness of current street sweeping operations, storm drain cleaning operations, and other base activities with potential for storm water impacts.
- Continue to train employees and contractors whose job functions may impact storm water quality.

- Ensure new flood management projects are assessed for impacts on water quality.

The JBER Water Quality Program Manager and the 673 CES/CEIEC Unit Environmental Coordinator 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 MSGP for Storm Water Discharges Associated with Industrial Activity (AKR060000). These inspections occur according to calendar year quarters. There were 384 quarterly inspections of 96 industrial facilities. In addition, there were monthly airfield inspections during deicing season. Each of the six outfalls regulated under the MSGP was monitored visually for the presence of floatable debris, odor, erosion, structural integrity, vegetation conditions, and other parameters. In addition, inspections of three Sector D recycled asphalt plants and 15 Sector J gravel mining borrow pits were conducted to confirm their status as no-exposure storm water facilities under the MSGP.

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

3.2 Annual Review and Update of the SWMP

Part 4.3.3.1 of the MS4 permit requires annual review and, if needed, updating of the SWMP. The SWMP was updated in February 2023.

4.0 EVALUATION OF OVERALL PROGRAM EFFECTIVENESS

Part 4.2 of the MS4 Permit states the following:

Based on the results of the effectiveness assessment, the permittee must annually review their activities or control measures to identify modifications and improvements needed to maximize SWMP effectiveness, as necessary to achieve compliance with this permit. The permittee must develop and implement a plan and schedule to address the identified modifications and improvements. Base activities/control measures that are ineffective or less effective than other comparable base activities/control measures must be replaced or improved upon by implementation of more effective base activities/control measures.

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 2022. 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:

2022 JBER MS4 Permit Summary Annual Report



ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

MS4 – Summary Annual Report Form

Permit Number: AKS053651

1. MS4 Information

Name of MS4		
Name of Contact Person (First)	(Last)	(Title)
Telephone (including area code)	Email	
Mailing Address		
City	Alaska State	Zip Code
What size population does your MS4 serve? _____		
What is the reporting period for this report? (mm/dd/yyyy) From _____ to _____		

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.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

- C. What specific sources contributing to the impairment(s) are you targeting in your storm water program?

- 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?

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.

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. _____

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

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:

☐ Yes Notice Of Violation # _____ No Authority ☐

☐ Yes Administrative Fines # _____ No Authority ☐

☐ Yes Stop Work Orders # _____ No Authority ☐

☐ Yes Civil Penalties # _____ No Authority ☐

☐ Yes Criminal Actions # _____ No Authority ☐

☐ Yes Administrative Orders # _____ No Authority ☐

☐ Yes Other # _____

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. _____ b. _____ c. _____

J. How often do municipal employees receive training on the construction program? _____

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. _____
- 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? _____
- 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? _____
- G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type. _____
-
- 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? _____
- K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? _____
- L. How often do municipal employees receive training on the illicit discharge program? _____

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 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal fleet and building maintenance activities | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal construction activities, including those disturbing greater than 1 acre | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal storm water system maintenance | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal snow disposal site operation and maintenance activities | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Other _____ | | |
- B. Are storm water inspections conducted at these facilities? ☐ Yes ☐ No
- C. If Yes, at what frequency are inspections conducted? _____
- 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). _____
-
- 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? _____
- 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?
-

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? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Long-term operation and maintenance of storm water management controls? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Retrofitting to incorporate long-term storm water management controls? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. If you have retrofit requirements, what are the circumstances/criteria?
-
- 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.)
-
- 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?
- | | | |
|--|------------------------------|-----------------------------|
| | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|--|------------------------------|-----------------------------|
- E. Do these performance or design standards require that pre-development hydrology be met for:
- | | | |
|----------------------|------------------------------|-----------------------------|
| Flow volumes | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Peak discharge rates | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Discharge frequency | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Flow duration | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- F. Please provide the URL/reference where all post-construction storm water management standards can be found.
-
- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection?
-
- H. How many of the plans identified in 7.G were approved?
-
- I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period?
-
- J. How many of the practices/facilities identified in 7.I were found to have inadequate maintenance?
-
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
-
- L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities?
- | | | |
|--|------------------------------|-----------------------------|
| | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|--|------------------------------|-----------------------------|
- 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?
-
- N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance?
-
- O. Do all municipal departments and/or staff (as relevant) have access to this tracking system?
- | | | |
|--|------------------------------|-----------------------------|
| | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|--|------------------------------|-----------------------------|
- 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.

Certification Statement and Signature☐ Yes

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

Date

Name of Certifying Official, Title

Appendix B:

Updated SWMP

Appendix C:

Outfall Monitoring Data Tables

Table 2. Water Analytical Results
JBER Fence to Fence MS4

Field Sample ID					22JBER-E-OF1-01-0224	22JBER-R-OF1-01-0224	22JBER-01-022422		22JBER-E-OF2-01	22JBER-01-031122	
Location ID					OF1	OF1	OF1		OF1	OF1	
Sample Type					Primary	Primary	Field duplicate of 22JBER-R-OF1-01-0224		Primary	Field duplicate of 22JBER-E-OF2-01	
Sample Collection Date					24-Feb-2022	24-Feb-2022	24-Feb-2022		11-Mar-2022	11-Mar-2022	
Analyte	Analytical Method	CASRN	Units	WQS ¹	Results	Q	Results	Q	Results	Q	RPD
Temperature	Multi Meter 4	--	degrees C	≤ 15	3.84		1.38		--		NC
pH	Multi Meter 4	--	s.u.	6.5-8.5	5.64		4.5		--		NC
Dissolved Oxygen	Multi Meter 4	--	mg/L	> 7	14.73		13.60		--		NC
Turbidity	Multi Meter 4	--	NTU	≤25 above natural conditions*	9.48		93.95		--		NC
Volatile Organic Compounds											
Benzene	E624.1	71-43-2	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Ethylbenzene	E624.1	100-41-4	µg/L	NS	ND [0.500]		ND [0.500] UJ		ND [0.500] UJ		NC
Toluene	E624.1	108-88-3	µg/L	NS	ND [0.600]		ND [0.600]		ND [0.600]		NC
m- and p-Xylenes	E624.1	179601-23-1	µg/L	NS	ND [1.00]		ND [1.00] UJ		ND [1.00] UJ		NC
o-Xylene	E624.1	95-47-6	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Xylenes (total)	E624.1	1330-20-7	µg/L	NS	ND [1.50]		ND [1.50]		ND [1.50]		NC
Total Aromatic Hydrocarbons (TAH)	Calculation ²	--	µg/L	10	ND [3.1]		ND [3.1]		ND [3.1]		NC
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	E625.1	83-32-9	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Acenaphthylene	E625.1	208-96-8	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Anthracene	E625.1	120-12-7	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Benzo(a)anthracene	E625.1	56-55-3	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Benzo(b)fluoranthene	E625.1	205-99-2	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Benzo(k)fluoranthene	E625.1	207-08-9	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Benzo(g,h,i)perylene	E625.1	191-24-2	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Benzo(a)pyrene	E625.1	50-32-8	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Chrysene	E625.1	218-01-9	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Dibenz(a,h)anthracene	E625.1	53-70-3	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Fluoranthene	E625.1	206-44-0	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Fluorene	E625.1	86-73-7	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Indeno(1,2,3-cd)pyrene	E625.1	193-39-5	µg/L	NS	ND [0.600]		ND [0.600]		ND [0.600]		NC
1-Methylnaphthalene	E625.1	90-12-0	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
2-Methylnaphthalene	E625.1	91-57-6	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Naphthalene	E625.1	91-20-3	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Phenanthrene	E625.1	85-01-8	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Pyrene	E625.1	129-00-0	µg/L	NS	ND [0.500]		ND [0.500]		ND [0.500]		NC
Total Aqueous Hydrocarbons (TAqH)	Calculation ³	--	µg/L	15	ND [9.1]		ND [9.1]		ND [9.1]		NC
General Chemistry											
Biochemical Oxygen Demand (BOD)	SM5210B	NS	mg/L	30	75 [2.00]		6.48 [2.00]		6.08 [2.00]	6.4%	3.17 [2.00]
Chemical Oxygen Demand (COD)	E410.4	NS	mg/L	120	121 [25.0]		61.4 [25.0]		58.3 [25.0]	5.2%	24.5 [25.0] J
Total Suspended Solids	SM2540D	NS	mg/L	NS	ND [20.0]		40.8 [40.0]		47.2 [20.0]	15%	10.7 [10]

Notes:

¹ 18 AAC 70, ADEC Water Quality Standards, amended as of March 5, 2020

² The total aromatic hydrocarbons (TAH) are calculated as the sum of benzene, ethylbenzene, toluene, and the xylene isomers (BTEX). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

³ The total aqueous hydrocarbons (TAqH) are calculated as the sum of TAH and polynuclear aromatic hydrocarbons (excluding 1-methylnaphthalene and 2-methylnaphthalene). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

⁴ The YSI 556 MPS multimeter was used to measure temperature, pH, dissolved oxygen, and turbidity.

* The average "natural turbidity" from 12 sites in Cook Inlet is 431 NTU (AWWU's Cook Inlet Water Quality Report, 2016)

Results are reported with the limit of detection (LOD) in brackets [].

Limits for COD and BOD are JBER stormwater outfall limits from the Multi Sector General Permit.

mg/L = milligram(s) per liter

µg/L = microgram(s) per liter

CASRN = Chemical Abstracts Service Registry No.

degrees C = degree Celsius

LOD = limit of detection

ND = nondetectable

Data Qualifiers:

J = The analyte was positively identified; the quantitation is estimated.

UJ = The analyte was not detected; the non-detect value is estimated.

Table 2 - Outfall Sampling Water Quality Parameters Summary
MS4 -Quarter 2 2022

Field Sample ID					22JBER-E-OF2-02	22JBER-E-OF4-01	22JBER-02-040522	22JBER-TB-03
Location ID					E-OF-2	E-OF-4	E-OF-2	N/A
Description					Primary	Primary	Field duplicate of 22JBER-E-OF2-02	Primary
Pace Laboratory Sample Delivery Group					L1479852/1221412	L1479852/1221412	L1479852/1221412	L1479852
Pace Laboratory Sample ID					L1479852-01/1221412001	L1479852-02/1221412002	L1479852-03/1221412003	L1479852-04
Sample Collection Date					5-Apr-2022	5-Apr-2022	5-Apr-2022	5-Apr-2022
Analyte	Analytical Method	CASRN	Units	Local Discharge Limitations ¹	Results	Q	Results	Q
Temperature	Multi Meter 4	--	degrees C	≤ 15	5.32		--	
pH	Multi Meter 4	--	s.u.	6.5-8.5	5.6		--	
Dissolved Oxygen	Multi Meter 4	--	mg/L	> 7	43.26		--	
Turbidity	Multi Meter 4	--	NTU	≤25 above natural conditions*	346.8		--	
Volatile Organic Compounds								
Benzene	E624.1	71-43-2	µg/L	NS	ND [0.50]		ND [0.50]	
Ethylbenzene	E624.1	100-41-4	µg/L	NS	ND [0.50]		ND [0.50]	
Toluene	E624.1	108-88-3	µg/L	NS	ND [0.60]		ND [0.60]	
m- and p-Xylenes	E624.1	179601-23-1	µg/L	NS	ND [1.0]		ND [1.0]	
o-Xylene	E624.1	95-47-6	µg/L	NS	ND [0.50]		ND [0.50]	
Xylenes (total)	E624.1	1330-20-7	µg/L	NS	ND [1.5]		ND [1.5]	
Total Aromatic Hydrocarbons (TAH)	Calculation ²	--	µg/L	10	ND [3.1]		ND [3.1]	
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	E625.1	83-32-9	µg/L	NS	ND [0.50]		ND [0.50]	
Acenaphthylene	E625.1	208-96-8	µg/L	NS	ND [0.50]		ND [0.50]	
Anthracene	E625.1	120-12-7	µg/L	NS	ND [0.50]		ND [0.50]	
Benzo(a)anthracene	E625.1	56-55-3	µg/L	NS	ND [0.50]		ND [0.50]	
Benzo(b)fluoranthene	E625.1	205-99-2	µg/L	NS	0.132 [0.50]	J	ND [0.50]	
Benzo(k)fluoranthene	E625.1	207-08-9	µg/L	NS	ND [0.50]		ND [0.50]	
Benzo(g,h,i)perylene	E625.1	191-24-2	µg/L	NS	0.148 [0.50]	J	ND [0.50]	
Benzo(a)pyrene	E625.1	50-32-8	µg/L	NS	ND [0.50]		ND [0.50]	
Chrysene	E625.1	218-01-9	µg/L	NS	ND [0.50]		ND [0.50]	
Dibenz(a,h)anthracene	E625.1	53-70-3	µg/L	NS	ND [0.50]		ND [0.50]	
Fluoranthene	E625.1	206-44-0	µg/L	NS	0.178 [0.50]	J	0.157 [0.50]	J
Fluorene	E625.1	86-73-7	µg/L	NS	ND [0.50]		ND [0.50]	
Indeno(1,2,3-cd)pyrene	E625.1	193-39-5	µg/L	NS	ND [0.60]		ND [0.60]	
1-Methylnaphthalene	E625.1	90-12-0	µg/L	NS	ND [0.50]		ND [0.50]	
2-Methylnaphthalene	E625.1	91-57-6	µg/L	NS	ND [0.50]		ND [0.50]	
Naphthalene	E625.1	91-20-3	µg/L	NS	ND [0.50]		ND [0.50]	
Phenanthrene	E625.1	85-01-8	µg/L	NS	ND [0.50]		ND [0.50]	
Pyrene	E625.1	129-00-0	µg/L	NS	0.228 [0.50]	J	0.196 [0.50]	J
Total Aqueous Hydrocarbons (TAqH)	Calculation ³	--	µg/L	15	9.89 [11.2]	J	10.55 [11.2]	J

Table 2 - Outfall Sampling Water Quality Parameters Summary
MS4 -Quarter 2 2022

Field Sample ID					22JBER-E-OF2-02	22JBER-E-OF4-01	22JBER-02-040522	22JBER-TB-03
					E-OF-2	E-OF-4	E-OF-2	N/A
					Primary	Primary	Field duplicate of 22JBER-E-OF2-02	Primary
					L1479852/1221412	L1479852/1221412	L1479852/1221412	L1479852
Pace Laboratory Sample Delivery Group					L1479852-01/1221412001	L1479852-02/1221412002	L1479852-03/1221412003	L1479852-04
Pace Laboratory Sample ID					5-Apr-2022	5-Apr-2022	5-Apr-2022	5-Apr-2022
Sample Collection Date								
Analyte	Analytical Method	CASRN	Units	Local Discharge Limitations ¹	Results	Q	Results	Q
General Chemistry								
Biochemical Oxygen Demand	SM5210B	NS	mg/L	30	5.51 [2.0]		ND [2.0]	
Chemical Oxygen Demand	E410.4	NS	mg/L	120	172 [25]		ND [25]	
Total Suspended Solids	SM2540D	NS	mg/L	NS	198 [50]	J	ND [5.0]	J

Notes:

Results shown in bold and highlighted blue exceed the screening levels.

¹ 18 AAC 70, ADEC Water Quality Standards, amended as of March 5, 2020

² The total aromatic hydrocarbons (TAH) are calculated as the sum of benzene, ethylbenzene, toluene, and the xylene isomers (BTEX). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

³ The total aqueous hydrocarbons (TAqH) are calculated as the sum of TAH and polynuclear aromatic hydrocarbons (excluding 1-methylnaphthalene and 2-methylnaphthalene). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

⁴ The YSI 556 MPS multimeter was used to measure temperature, pH, dissolved oxygen, and turbidity.

* The Water Quality Standard is "less than 25 NTU above natural background conditions. The average "natural turbidity" from 12 sites in Cook Inlet is 431 NTU (AWWU's Cook Inlet Water Quality Report, 2016)

Results are reported with the limit of detection (LOD) in brackets [].

Limits for COD and BOD are JBER stormwater outfall limits from the Multi Sector General Permit.

mg/L = milligram(s) per liter

µg/L = microgram(s) per liter

CASRN = Chemical Abstracts Service Registry No.

deg C = degree Celsius

LOD = limit of detection

Data Qualifiers:

J = The analyte was positively identified; the quantitation is estimated.

ND = nondetectable

NS = not specified

NTU = Nephelometric Turbidity Unit

Q = qualifier

WQS = water quality standard

Table 2 - Laboratory Analytical Data Summary
MS4 -Quarter 3 2022

Field Sample ID					22JBER-E-OF1-02	22JBER-E-OF1-03	22JBER-E-OF1-04	22JBER-E-OF2-03	22JBER-E-OF2-04	22JBER-E-OF4-02
Location ID					E-OF1	E-OF1	E-OF1	E-OF2	E-OF2	E-OF4
Description					Primary	Primary	Primary	Primary	Primary	Primary
Laboratory Sample Delivery Group					L1521296/1224447	L1523355/1224618	L1535995/1225546	L1521296/1224447	L1535995/1225546	L1521296/1224447
Laboratory Sample ID					L1521296-03/1224447003	L1523355-04/1224618004	L1535995-02/1225546004	L1521296-04/1224447004	L1535995-01/1225546003	L1521296-01/1224447001
Sample Collection Date					1-Aug-2022	5-Aug-2022	13-Sep-2022	1-Aug-2022	13-Sep-2022	1-Aug-2022
Analyte	Analytical Method	CASRN	Units	Local Discharge Limitations ¹	Results	Q	Results	Q	Results	Q
Temperature	Multi Meter ⁴	--	degrees C	≤ 15	12.3		13.9		10.40	15.40
pH	Multi Meter ⁴	--	s.u.	6.5-8.5	7.45		6.19		7.82	6.99
Dissolved Oxygen	Multi Meter ⁴	--	mg/L	> 7	8.48		7.44		9.04	9.39
Turbidity	Multi Meter ⁴	--	NTU	≤ 25 above NBC ⁵	25.15		76.36		47.82	33.5
Volatile Organic Compounds										
Benzene	E624.1	71-43-2	µg/L	NS	ND [0.50]		ND [0.50]		ND [0.50]	ND [0.50]
Ethylbenzene	E624.1	100-41-4	µg/L	NS	ND [0.50]		ND [0.50]		ND [0.50]	ND [0.50]
Toluene	E624.1	108-88-3	µg/L	NS	ND [0.60]		ND [0.60]		ND [0.60]	ND [0.60]
m- and p-Xylenes	E624.1	179601-23-1	µg/L	NS	ND [1.0]		ND [1.0]		ND [1.0]	ND [1.0]
o-Xylene	E624.1	95-47-6	µg/L	NS	ND [0.50]		ND [0.50]		ND [0.50]	ND [0.50]
Xylenes (total)	E624.1	1330-20-7	µg/L	NS	ND [1.5]		ND [1.5]		ND [1.5]	ND [1.5]
Total Aromatic Hydrocarbons (TAH)	Calculation ²	--	µg/L	10	ND [3.1]		ND [3.1]		ND [3.1]	ND [3.1]
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E625.1	83-32-9	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Acenaphthylene	E625.1	208-96-8	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Anthracene	E625.1	120-12-7	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Benzo(a)anthracene	E625.1	56-55-3	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Benzo(b)fluoranthene	E625.1	205-99-2	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Benzo(k)fluoranthene	E625.1	207-08-9	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Benzo(g,h,i)perylene	E625.1	191-24-2	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Benzo(a)pyrene	E625.1	50-32-8	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Chrysene	E625.1	218-01-9	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Dibenz(a,h)anthracene	E625.1	53-70-3	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Fluoranthene	E625.1	206-44-0	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Fluorene	E625.1	86-73-7	µg/L	NS	ND [0.570]		ND [0.500]	UJ	ND [0.525]	ND [0.500]
Indeno(1,2,3-cd)pyrene	E625.1	193-39-5	µg/L	NS	ND [0.684]		ND [0.600]		ND [0.630]	ND [0.600]
1-Methylnaphthalene	E625.1	90-12-0	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
2-Methylnaphthalene	E625.1	91-57-6	µg/L	NS	ND [0.570]		ND [0.500]		ND [0.525]	ND [0.500]
Naphthalene	E625.1	91-20-3	µg/L	NS	ND [0.570]		ND [0.500]	0.333 [0.500]	ND [0.525]	ND [0.500]
Phenanthrene	E625.1	85-01-8	µg/L	NS	ND [0.570]		ND [0.500]	UJ	ND [0.525]	ND [0.500]
Pyrene	E625.1	129-00-0	µg/L	NS	ND [0.570]		ND [0.500]	UJ	ND [0.525]	ND [0.500]
Total Aqueous Hydrocarbons (TAqH)	Calculation ³	--	µg/L	15	ND [12.3]		ND [11.2]		11.0 [11.2]	ND [11.6]
General Chemistry										
Biochemical Oxygen Demand	SM5210B	NS	mg/L	30	2.81 [2.00]		2.41 [2.00]		ND [2.00]	2.99 [2.00]
Chemical Oxygen Demand	E410.4	NS	mg/L	120	13.2 [25]	J	213 [25]	J	18.5 [25]	16.5 [25]
Total Suspended Solids	SM2540D	NS	mg/L	NS	14.1 [5.0]		93.2 [20]	J	20.5 [8.35]	20.2 [10.0]

Notes:

Results shown in bold and highlighted blue exceed the relevant water quality standards.

Results are reported with the limit of detection (LOD) in brackets [], except BOD results which are reported with the limit of quantitation (LOQ) in brackets [].

¹ 18 AAC 70, ADEC Water Quality Standards, amended as of March 5, 2020

² The total aromatic hydrocarbons (TAH) are calculated as the sum of benzene, ethylbenzene, toluene, and the xylene isomers (BTEx). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

³ The total aqueous hydrocarbons (TAqH) are calculated as the sum of TAH and polynuclear aromatic hydrocarbons (excluding 1-methylnaphthalene and 2-methylnaphthalene). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

⁴ The YSI 556 MPS multimeter was used to measure temperature, pH, dissolved oxygen, and turbidity.

⁵ The Water Quality Standard is "less than 25 NTU above natural background conditions (NBC). The average "natural turbidity" from 12 sites in Cook Inlet is 431 NTU (AWWU's Cook Inlet Water Quality Report, 2016)

mg/L = milligram(s) per liter LOD = limit of detection NTU = Nephelometric Turbidity Unit

µg/L = microgram(s) per liter ND = nondetectable Q = qualifier

CASRN = Chemical Abstracts Service Registry No. WQS = water quality standard

deg C = degree Celsius NS = not specified

Data Qualifiers:

UJ = The analyte was analyzed for, but not detected. The associated numerical value is estimated due to quality control issues identified during data validation.

J = The analyte was positively identified; the quantitation is estimated.

Table 2 - Laboratory Analytical Data Summary
MS4 -Quarter 3 2022

Field Sample ID Location ID Description Laboratory Sample Delivery Group Laboratory Sample ID Sample Collection Date					22JBER-080122	22JBER-E-OF4-03	22JBER-R-OF1-02	22JBER-080522	22JBER-R-OF1-03	22JBER-091322							
					E-OF4 Field duplicate of 22JBER-E-OF2-02 L1521296/1224447 L1521296-02/1224447002 1-Aug-2022	E-OF4 Primary L1523355/1224618 L1523355-03/1224618003 5-Aug-2022	R-OF1 Primary L1523355/1224618 L1523355-01/1224618001 5-Aug-2022	R-OF1 Field Duplicate of 22JBER-R-OF1-02 L1523355/1224618 L1523355-02/1224618002 5-Aug-2022	R-OF1 Primary L1536008/1225546 L1536008-01/1225546001 13-Sep-2022	R-OF1 Field Duplicate of 22JBER-R-OF1-03 L1536008/1225546 L1536008-02/1225546002 13-Sep-2022							
					Results	Q	Results	Q	Results	Q	Results	Q	Results	Q			
					Analyte	Analytical Method	CASRN	Units	Local Discharge Limitations ¹	Results	Q	Results	Q	Results	Q	Results	Q
Temperature	Multi Meter ⁴	--	degrees C	≤ 15	--		9.5		14.4		--		10.8		--		
pH	Multi Meter ⁴	--	s.u.	6.5-8.5	--		7.14		5.45		--		6.5		--		
Dissolved Oxygen	Multi Meter ⁴	--	mg/L	> 7	--		8.68		9.94		--		9.47		--		
Turbidity	Multi Meter ⁴	--	NTU	≤ 25 above NBC ⁵	--		1.04		18.78		--		14.3		--		
Volatile Organic Compounds																	
Benzene	E624.1	71-43-2	µg/L	NS		ND [0.50]		ND [0.50]		ND [0.50]		ND [0.50]		ND [0.50]		ND [0.50]	
Ethylbenzene	E624.1	100-41-4	µg/L	NS		ND [0.50]		ND [0.50]	UJ	ND [0.50]	UJ	ND [0.50]		ND [0.50]		ND [0.50]	
Toluene	E624.1	108-88-3	µg/L	NS		ND [0.60]		ND [0.60]	UJ	ND [0.60]	UJ	ND [0.60]		ND [0.60]		ND [0.60]	
m- and p-Xylenes	E624.1	179601-23-1	µg/L	NS		ND [1.0]		ND [1.0]	UJ	ND [1.0]	UJ	ND [1.0]		ND [1.0]		ND [1.0]	
o-Xylene	E624.1	95-47-6	µg/L	NS		ND [0.50]		ND [0.50]	UJ	ND [0.50]	UJ	ND [0.50]		ND [0.50]		ND [0.50]	
Xylenes (total)	E624.1	1330-20-7	µg/L	NS		ND [1.5]		ND [1.5]	UJ	ND [1.5]	UJ	ND [1.5]		ND [1.5]		ND [1.5]	
Total Aromatic Hydrocarbons (TAH)	Calculation ²	--	µg/L	10		ND [3.1]		ND [3.1]	UJ	ND [3.1]	UJ	ND [3.1]		ND [3.1]		ND [3.1]	
Polycyclic Aromatic Hydrocarbons																	
Acenaphthene	E625.1	83-32-9	µg/L	NS		ND [0.500]	UJ	ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Acenaphthylene	E625.1	208-96-8	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Anthracene	E625.1	120-12-7	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Benzo(a)anthracene	E625.1	56-55-3	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Benzo(b)fluoranthene	E625.1	205-99-2	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		0.138 [0.500]	J	ND [0.525]	
Benzo(k)fluoranthene	E625.1	207-08-9	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Benzo(g,h,i)perylene	E625.1	191-24-2	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Benzo(a)pyrene	E625.1	50-32-8	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Chrysene	E625.1	218-01-9	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Dibenz(a,h)anthracene	E625.1	53-70-3	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		0.089 [0.500]	J	ND [0.525]	
Fluoranthene	E625.1	206-44-0	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Fluorene	E625.1	86-73-7	µg/L	NS		ND [0.500]	UJ	ND [0.500]	UJ	ND [0.525]	UJ	ND [0.525]	UJ	ND [0.500]		ND [0.525]	
Indeno(1,2,3-cd)pyrene	E625.1	193-39-5	µg/L	NS		ND [0.600]		ND [0.600]	UJ	ND [0.63]		ND [0.63]		ND [0.600]		ND [0.63]	
1-Methylnaphthalene	E625.1	90-12-0	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
2-Methylnaphthalene	E625.1	91-57-6	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		ND [0.525]	
Naphthalene	E625.1	91-20-3	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]		ND [0.525]		ND [0.500]		0.314 [0.525]	J
Phenanthrene	E625.1	85-01-8	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]	UJ	ND [0.525]	UJ	ND [0.500]		ND [0.525]	
Pyrene	E625.1	129-00-0	µg/L	NS		ND [0.500]		ND [0.500]	UJ	ND [0.525]	UJ	ND [0.525]	UJ	ND [0.500]		ND [0.525]	
Total Aqueous Hydrocarbons (TAqH)	Calculation ³	--	µg/L	15		ND [11.2]		ND [11.2]	UJ	ND [11.6]		ND [11.6]		10.4 [11.2]	J	11.4 [11.6]	J
General Chemistry																	
Biochemical Oxygen Demand	SM5210B	NS	mg/L	30		ND [2.00]		ND [2.00]		ND [2.00]		ND [2.00]		ND [2.00]		ND [2.00]	
Chemical Oxygen Demand	E410.4	NS	mg/L	120		ND [25]		ND [25]		18.2 [25]	J	ND [25]		ND [25]		ND [25]	
Total Suspended Solids	SM2540D	NS	mg/L	NS		ND [5.0]		ND [5.0]		ND [5.0]		ND [5.0]		ND [5.0]	UJ	ND [5.0]	UJ

Notes:
Results shown in bold and highlighted blue exceed the relevant water quality standards.
Results are reported with the limit of detection (LOD) in brackets [], except BOD results which are reported with the limit of quantitation (LOQ) in brackets [].
¹ 18 AAC 70, ADEC Water Quality Standards, amended as of March 5, 2020
² The total aromatic hydrocarbons (TAH) are calculated as the sum of benzene, ethylbenzene, toluene, and the xylene isomers (BTEx). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.
³ The total aqueous hydrocarbons (TAqH) are calculated as the sum of TAH and polynuclear aromatic hydrocarbons (excluding 1-methylnaphthalene and 2-methylnaphthalene). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.
⁴ The YSI 556 MPS multimeter was used to measure temperature, pH, dissolved oxygen, and turbidity.
⁵ The Water Quality Standard is "less than 25 NTU above natural background conditions (NBC). The average "natural turbidity" from 12 sites in Cook Inlet is 431 NTU (AWWU's Cook Inlet Water Quality Report, 2016)
mg/L = milligram(s) per liter LOD = limit of detection NTU = Nephelometric Turbidity Unit
µg/L = microgram(s) per liter ND = nondetectable Q = qualifier
CASRN = Chemical Abstracts Service Registry No. WQS = water quality standard
deg C = degree Celsius NS = not specified
Data Qualifiers:
UJ = The analyte was analyzed for, but not detected. The associated numerical value is estimated due to quality control issues identified during data validation.
J = The analyte was positively identified; the quantitation is estimated.

Table 2 - Laboratory Analytical Data Summary
MS4 - Quarter 4 2022

Field Sample ID					22JBER-E-OF4-04	22JBER-080122		22JBER-R-OF1-04	
					E-OF4	E-OF4		R-OF1	
					Primary	Field duplicate of 22JBER-E-OF4-04		Primary	
					L1550113/1226451 L1550113-01/1226451001 20-Oct-2022	L1550113/1226451 L1550113-03/1226451003 20-Oct-2022		L1550113/1226451 L1550113-02/1226451002 20-Oct-2022	
Analyte		Analytical Method	CASRN	Units	Local Discharge Limitations ¹	Results	Q	Results	Q
Temperature		Multi Meter 4	--	degrees C	≤ 15	5.94		--	7.24
pH		Multi Meter 4	--	s.u.	6.5-8.5	7.27		--	6.36
Dissolved Oxygen		Multi Meter 4	--	mg/L	> 7	9.37		--	11.57
Turbidity		Multi Meter 4	--	NTU	≤ 25 above natural conditions*	2.30		--	64.76
Volatile Organic Compounds									
Benzene	E624.1	71-43-2	µg/L	NS	ND [0.50]	ND [0.50]		NC	ND [0.50]
Ethylbenzene	E624.1	100-41-4	µg/L	NS	ND [0.50]	ND [0.50]		NC	ND [0.50]
Toluene	E624.1	108-88-3	µg/L	NS	ND [0.60]	ND [0.60]		NC	ND [0.60]
m- and p-Xylenes	E624.1	179601-23-1	µg/L	NS	ND [1.0]	ND [1.0]		NC	ND [1.0]
o-Xylene	E624.1	95-47-6	µg/L	NS	ND [0.50]	ND [0.50]		NC	ND [0.50]
Xylenes (total)	E624.1	1330-20-7	µg/L	NS	ND [1.5]	ND [1.5]		NC	ND [1.5]
Total Aromatic Hydrocarbons (TAH)	Calculation ²	--	µg/L	10	ND [3.1]	ND [3.1]		NC	ND [3.1]
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	E625.1	83-32-9	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Acenaphthylene	E625.1	208-96-8	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Anthracene	E625.1	120-12-7	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Benzo(a)anthracene	E625.1	56-55-3	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Benzo(b)fluoranthene	E625.1	205-99-2	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Benzo(k)fluoranthene	E625.1	207-08-9	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Benzo(g,h,i)perylene	E625.1	191-24-2	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Benzo(a)pyrene	E625.1	50-32-8	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Chrysene	E625.1	218-01-9	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Dibenz(a,h)anthracene	E625.1	53-70-3	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Fluoranthene	E625.1	206-44-0	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Fluorene	E625.1	86-73-7	µg/L	NS	ND [0.500] UJ	ND [0.500] UJ		NC	ND [0.500]
Indeno(1,2,3-cd)pyrene	E625.1	193-39-5	µg/L	NS	ND [0.600]	ND [0.600]		NC	ND [0.600]
1-Methylnaphthalene	E625.1	90-12-0	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
2-Methylnaphthalene	E625.1	91-57-6	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Naphthalene	E625.1	91-20-3	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Phenanthrene	E625.1	85-01-8	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Pyrene	E625.1	129-00-0	µg/L	NS	ND [0.500]	ND [0.500]		NC	ND [0.500]
Total Aqueous Hydrocarbons (TAqH)	Calculation ³	--	µg/L	15	ND [11.2]	ND [11.2]		NC	ND [11.2]
General Chemistry									
Biochemical Oxygen Demand	SM5210B	NS	mg/L	30	ND [2.00]	ND [2.00]		NC	3.07 [2.00] J
Chemical Oxygen Demand	E410.4	NS	mg/L	120	ND [25]	ND [25]		NC	43.6 [25] J
Total Suspended Solids	SM2540D	NS	mg/L	NS	ND [5.0]	ND [5.0]		NC	ND [20.0]

Notes:

Results shown in bold and highlighted blue exceed the screening levels.

¹ 18 AAC 70, ADEC Water Quality Standards, amended as of March 5, 2020

² The total aromatic hydrocarbons (TAH) are calculated as the sum of benzene, ethylbenzene, toluene, and the xylene isomers (BTEx). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

³ The total aqueous hydrocarbons (TAqH) are calculated as the sum of TAH and polynuclear aromatic hydrocarbons (excluding 1-methylnaphthalene and 2-methylnaphthalene). LOD values are used to calculated non-detect results. Totals include non-detect results and detects results.

⁴ The YSI 556 MPS multimeter was used to measure temperature, pH, dissolved oxygen, and turbidity.

* The Water Quality Standard is "less than 25 NTU above natural background conditions. The average "natural turbidity" from 12 sites in Cook Inlet is 431 NTU (AWWU's Cook Inlet Water Quality Report, 2016)

Results are reported with the limit of detection (LOD) in brackets [], with the exception of BOD results. Results for BOD are reported with the limit of quantitation (LOQ) in brackets [].

Limits for COD and BOD are JBER stormwater outfall limits from the Multi Sector General Permit.

mg/L = milligram(s) per liter

NC = not calculated

µg/L = microgram(s) per liter

ND = nondetectable

CASRN = Chemical Abstracts Service Registry No.

NS = not specified

deg C = degree Celsius

NTU = Nephelometric Turbidity Unit

LOD = limit of detection

Q = qualifier


Data Qualifiers:

WQS = water quality standard

J = The analyte was positively identified; the quantitation is estimated.

Appendix D:

Training Materials



JBER Stormwater Pollution Prevention Training

2023

Course Description

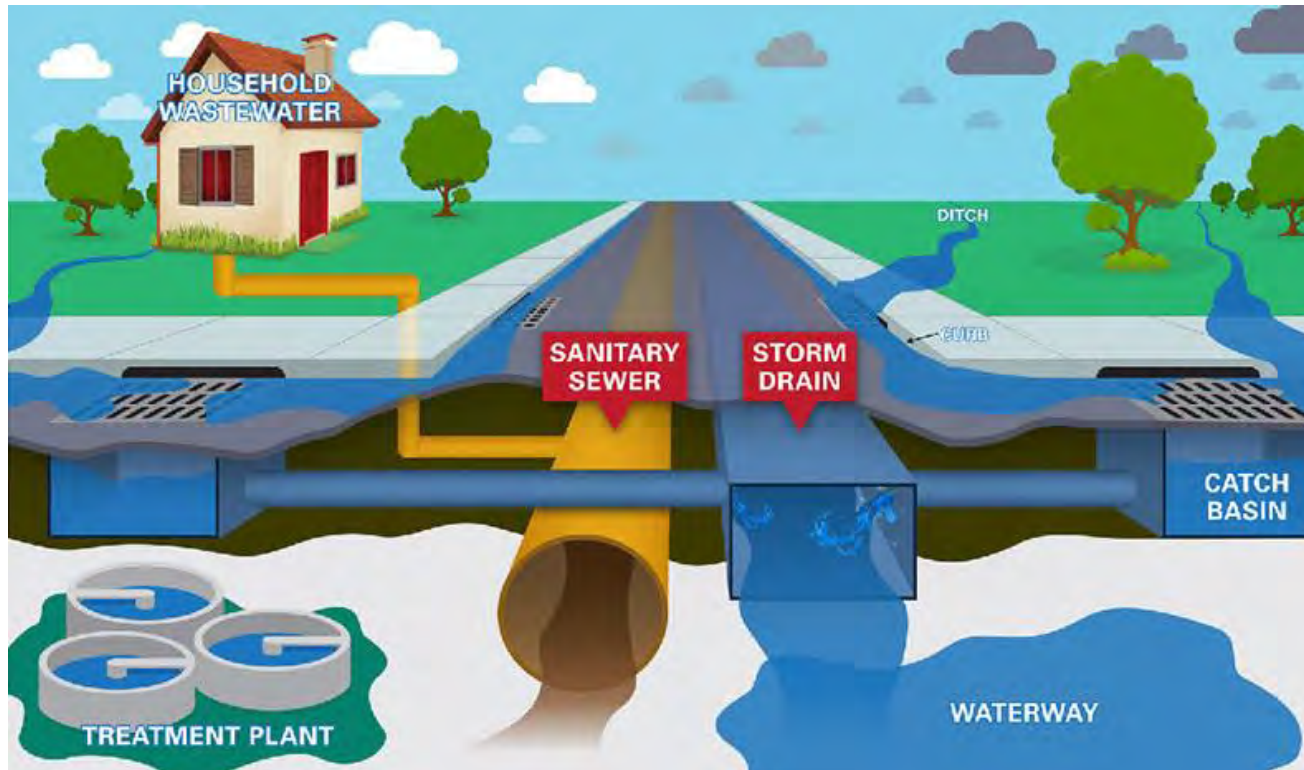
This Stormwater Pollution Prevention Training is designed to inform JBER personnel about stormwater pollution prevention, JBER's Storm Water Pollution Prevention Plan (SWPPP), and best management practices (BMPs) to prevent stormwater pollution.



Course Objectives

- Define stormwater and stormwater pollution
- Understand and comply with JBER permits/plans related to stormwater at your facility
- Identify Basic, Activity-Specific, and Sector-Specific Best Management Practices (BMPs) on JBER that can contribute to stormwater pollution
- Identify applicable SWPPP BMPs for your facility

What is Stormwater?

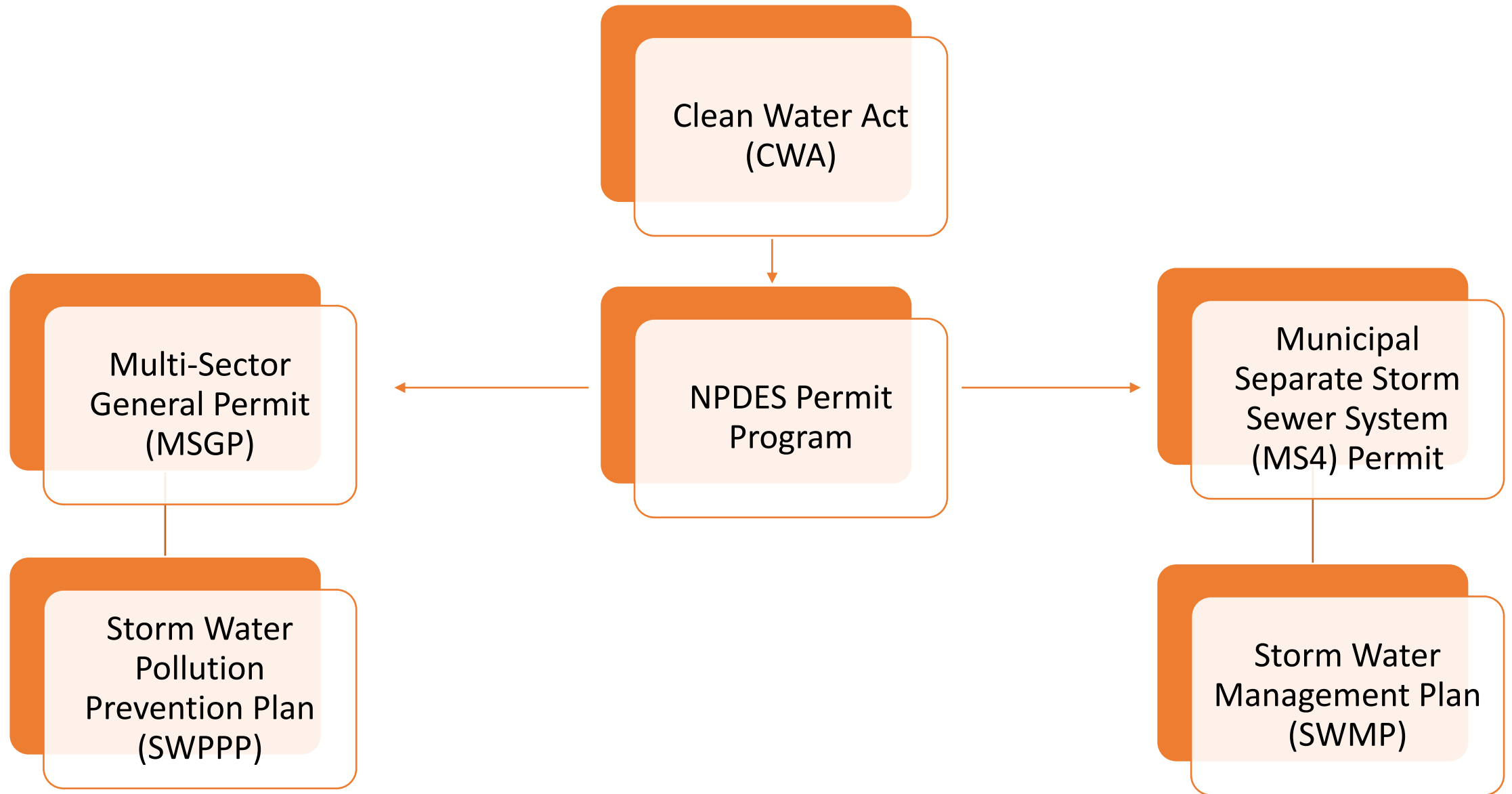


Stormwater runoff at JBER flows to natural waterbodies **without treatment or filtration**

The JBER Stormwater Pollution Prevention Plan (**SWPPP**) helps to prevent pollution of US waters

Storm Water Runoff & Pollution Prevention

JBER NPDES Permits and Plans



Municipal Separate Storm Sewer System (MS4) Permit

MS4 Permit is issued by ADEC to municipalities that discharge stormwater to waters of the US

Permit Goal: minimize the discharge of stormwater pollutants from urban areas

Non-stormwater discharges (except for discharges listed in Condition 1.4) are unauthorized and defined as:

Any discharge not composed ***entirely*** of rainfall or snowmelt runoff

Multi-Sector General Permit (MSGP)

MSGP is issued by ADEC to industrial facilities that discharge stormwater to waters of the US

Permit Goal: minimize the discharge of stormwater pollutants from industrial facilities through implementation of *stormwater control measures*

MSGP requires employees of industrial facilities to have stormwater pollution prevention awareness training

MSGP Sectors at JBER

*Sector S

Air Transportation Facilities

*Sector P

Land Transportation and Warehouse Activities

Sector K

Hazardous Waste Treatment, Storage, or Disposal Facilities

Sector N

Scrap Recycling and Waste Recycling Facilities

Sector J

Non-Metallic Mineral Mining and Dressing

Sector D

Asphalt Paving

Storm Water Pollution Prevention Plan (SWPPP)

- Developed in compliance with the MSGP
- Identifies potential pollutant sources (i.e., industrial facilities)
- Outlines stormwater BMPs
- Guides for the pollution prevention team



INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN
JOINT BASE ELMENDORF-RICHARDSON, ALASKA



UPDATE February 2021
EFFECTIVE DATES OF THIS PERMIT
April 1, 2020 TO MARCH 31, 2025

Stormwater Control Measures/ Best Management Practices (BMPs)

Devices, methods, and practices

Three categories of stormwater control measures include:

1. **Basic BMPs** (apply to all industrial facilities)
2. **Activity-Specific BMPs** (apply only to industrial facilities where specific activities outlined in the SWPPP are present)
3. **Sector-Specific BMPs** (apply to industrial facilities based on what sector they are categorized as)



Basic BMPs

- Minimize Exposure
- Good Housekeeping
- Preventive Maintenance
- Spill Prevention and Response
- Erosion and Sediment Controls
- Management of Runoff
- Salt Storage Piles or Piles Containing Salt
- Employee Training
- Non-Stormwater Discharges
- Waste, Garbage, and Floatable Debris



INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN
JOINT BASE ELMENDORF-RICHARDSON, ALASKA



UPDATE February 2021
EFFECTIVE DATES OF THIS PERMIT
April 1, 2020 TO MARCH 31, 2025

Minimize Exposure (SWPPP Section 3.1.1):

- Activities inside permanent structures
- Outdoor materials covered during wet weather
- Grading/berming/curbing to prevent/divert contaminated runoff





Good Housekeeping (SWPPP Section 3.1.2):

- No excessive waste accumulation
- Satellite accumulation areas inspected regularly
- Spills/leaks promptly cleaned
- Floor/pavement clear of sediment build-up

Battery Turn-in

- Promptly preparing waste for disposal is a good housekeeping BMP
- DLA (BLDG. 12745) requirements for **lead-acid** battery pick-up:
 - 1) Tape battery terminals
 - 2) Stack single layer of batteries on pallet
 - 3) Band or shrink wrap batteries and pallet together

DLA accepts 4 pallets per trip

- **Lithium battery** drop-off **Mon-Fri. 1300-1500** at Hazardous Waste Center (BLDG 4314, Phone: 552-3435)



What is wrong here?

Drum Turn-in

- Contact ECC for pick-up of HW, UW, and used oil containers on JBER.
- DLA accepts RCRA-empty steel drums for recycle. Process for disposal includes:
 - 1) Contact DLA for unit link to schedule drop-off
 - 2) Turn 55-gal drums over to drain (~8hrs) within secondary containment, lined with absorbent pads, and secured
 - 3) Do **NOT** drain overnight!
 - 4) Transport drums in military vehicle to DLA (BLDG. 12745) at scheduled time

Triple-rinse and crushing not required



Preventative Maintenance (SWPPP Section 3.1.3):

- Equipment inspected regularly and repaired promptly
- Regular OWS servicing
- Exterior wash racks, sediment collection tanks winterized in fall



Oil Water Separators (OWS)

- Designed to catch incidental leaks and drips only
- **ARE NOT** for secondary containment or disposal
- **DO NOT** capture non-oily chemicals (e.g., glycol)
- Can be overwhelmed by large flows of water
- Do not use emulsifying soaps!





SPILL REPORTING

REPORT ALL SPILLS TO:

JBER.Spill.Report@us.af.mil

WHEN REPORTING INCLUDE:

- Your name and contact information
- Time of spill or discovery
- Location of spill or discovery
- Type and quantity of substance spilled
- Actions taken (cleaned up, contained, evacuated area, etc.)
- Call 907-384-2478 with any questions

Spills of Petroleum, Oil, or Lubricants (POLs)
less than 10 gallons:

- First, if capable, contain and clean up the contaminated area; if in doubt call JBER Fire Department via 911
- Second, submit a report to the Environmental Element (JBER.Spill.Report@us.af.mil)
- Call the Hazardous Waste Center at 552-3435 to obtain containers for wastes and disposal

CALL 911 WHEN:

- GREATER than 10 gallons of POLs released to the environment or to floor drains
- ANY amount of hazardous waste/material is released
- ANY amount of POL or hazardous waste/material is released to waters of the U.S. (lakes, rivers, storm drains, etc.)
- The spill presents a fire, safety, or health risk
- The spill cannot be contained or spill response equipment is not available

MAKE SURE YOU STATE "NON-EMERGENCY" IF ASSISTANCE ISN'T NEEDED TO
CLEAN UP THE SPILL

Spill Prevention and Response (SWPPP Section 3.1.4):

- Post spill awareness materials and response instructions in visible locations.
- Maintain spill response materials:
 - Appropriate type and quantity for most likely types of spills
 - Where they are readily accessible, and
 - Near locations where spills are most likely to occur.
- Follow the JBER SPCC/C-Plan and HWMP for:
 - Specific spill containment and cleanup procedures
 - Spill reporting guidelines and requirements
- **If you are the first to discover a spill, follow JBER spill reporting procedures!**



Waste Management (SWPPP Section 3.1.10):

- Waste collection areas must be clearly marked and accessible.
- Provide dumpsters and cans with secure lids.
- Promptly clean loose trash.
- Enforce facility cleanup prior to scheduled garbage pickup times.
- Promptly remove debris revealed by melting snow piles.

Activity Specific BMPs

SWPPP Activity-Specific BMPs include the following categories:



Fueling and
Fuel Storage



Aircraft and
Support
Equipment
Maintenance



Aircraft and
Support
Equipment
Washing



Vehicle and
Motor Pool
Support
Equipment
Maintenance



Vehicle and
Motor pool
Support
Equipment
Washing



Loading and
Unloading
Materials



Management
of HM/HW



Outdoor
Storage Areas



Vehicle, Aircraft, and Support Equipment Maintenance (SWPPP Sections 3.2.4 & 3.2.2):

- Perform all maintenance indoors.
- Provide spill kits in maintenance areas.
- Monitor for leaks and deploy drip pans if necessary.
- Empty drip pans into appropriate container.
- Closely monitor parked equipment for leaks.
- Equipment requiring long-term storage should be placed under cover.
- Use dry-sweep methods to clean shop floors.



Vehicle, Aircraft, and Equipment Washing (SWPPP Section 3.2.5 & 3.2.3):

- Wash only at designated facilities.
- Do not discharge wash water into stormwater drainage system.
- Only use OWS-compatible soaps.
- Do not dispose of materials/waste down wash rack drains.
- Regularly inspect wash water drainage containment features.



Loading and Unloading Materials (SWPPP Section 3.2.6):

- Follow material handling procedures in HWMP
- Keep new chemical containers unopened until needed
- Do not load/unload liquids over storm drains
- Load/unload inside or in covered area if possible
- Manage traffic during loading/unloading



Hazardous Materials and Waste Management (SWPPP Section 3.2.8):

- Protect materials from stormwater run-on, run-off, and weather
- Promptly clean all spills and leaks
- Keep containers tightly closed
- Provide appropriate labels on all containers
- Provide appropriate secondary containment

Secondary containment for POL 55-gal (or greater) containers is required per 40 CFR 112.

Secondary containment for Non-POL 55-gal (or greater) containers is required per the JBER MSGP and 40 CFR 122.26.



Outdoor Storage for Materials (SWPPP Section 3.2.10):

- Store materials away from high traffic areas
- Protect materials from precipitation/weather
- Provide secondary containment for all liquids
- Perform regular visual inspections of storage areas
- Prevent excessive dirt/mud accumulation on pavement



Outdoor Storage and Parking for Equipment and Vehicles (SWPPP Section 3.2.10):

- Repair any leaks prior to long-term storage
- Store vehicles on pavement and under cover, if possible.
- Frequently inspect storage and parking areas for leaks.
- Monitor and empty drip pans regularly
- Place drip pans under leaks
- Cover parts with an oily or chemical residue
- Empty fluids prior to disposal

Sector Specific BMPs – Sector P/Sector S (SWPPP Sections 3.3.2.2 & 3.3.2.3)

- Minimize Exposure
- Good Housekeeping
- Maintenance
- Spill Prevention and Response
- Erosion and Sediment Control
- Management of Runoff
- Salt Storage Piles or Piles Containing Salt
- Employee Training
- Non-Stormwater Discharges
- Waste, Garbage, and Floatable Debris

Stormwater Inspections

- Quarterly stormwater inspections are conducted at each industrial facility to evaluate:
 - Effectiveness of BMPs
 - Need for additional BMPs
 - Assist in identifying deficiencies in SWPP compliance that could result in fines for JBER
- Failure to properly implement BMPs may result in a Corrective Action (CA)

STORMWATER POLLUTION PREVENTION PLAN INDUSTRIAL ACTIVITY POINT INSPECTION AT JOINT BASE ELMENDORF RICHARDSON			
Building Number or Location: JBER- Drainage Area and Ultimate Outfall: JBER-R-OF1 Sector: Activities: Vehicle Parking Lots, Industrial Waste, Maintenance, Aircraft Maintenance and Washing Fueling, Loading/Unloading		Inspection date and time: Quarter: Q1 Q2 Q3 Q4 Cloud cover: Clear Partially cloudy <u>Cloudy</u> Precipitation: None Rain Snow Temperature: °F	
Building tenant or organization: Detail Description: Inspector name:		Facility contact name and phone number: Inspector signature:	
Basic BMPs (SWPPP p.26/pdf p. 44)		Are BMPs being properly implemented?	
		Yes	No
Minimize exposure (SWPPP 3.1.1) • Outdoor materials covered during wet weather • Activities inside permanent structures • Grading/berming/curbing to prevent/divert contaminated runoff			
Good housekeeping (SWPPP 3.1.2) • No excessive waste accumulation • Satellite accumulation areas inspected regularly • Spills/leaks promptly cleaned • Floor/pavement clear of sediment build-up			
Preventative maintenance (SWPPP 3.1.3) • Equipment inspected regularly and repaired promptly • Regular OWS servicing • Exterior wash racks, sediment collection tanks winterized in fall			
Spill prevention and response (SWPPP 3.1.4) • Spill response materials available and accessible • Spill response instructions posted			
Erosion and sediment controls (SWPPP 3.1.5) • Erosion BMPs in place: seeding, mulching, wood chipping • Sediment BMPs in place: check dams, vegetation swales, sediment ponds, detention/retention ponds			
Runoff management (SWPPP 3.1.6) • Runoff BMPs in place: vegetative swales, berms, inlet controls, snow management, infiltration devices • No evidence of dead or rotten smelling vegetation			
Salt storage piles (SWPPP 3.1.7) • Curbing between the street and building entrance prevents run-on from entering the bays, or site grading does not allow run-on to enter the building			
Employee training (SWPPP 3.1.8) • Facility has employee trained to manage hazardous waste • Facility has storm water coordinator/unit environmental coordinator			
Non-Storm Water Discharges (SWPPP 3.1.9; exceptions p.30) • Evidence of unauthorized non-storm water discharge? • Evidence of contaminated runoff?			
Waste (SWPPP 3.1.10) • Dumpsters have lids closed and drain plugs • Garbage revealed by snow melt is promptly removed • Garbage disposal locations clearly marked and accessible • Garbage disposed of on regular basis • No loose trash			

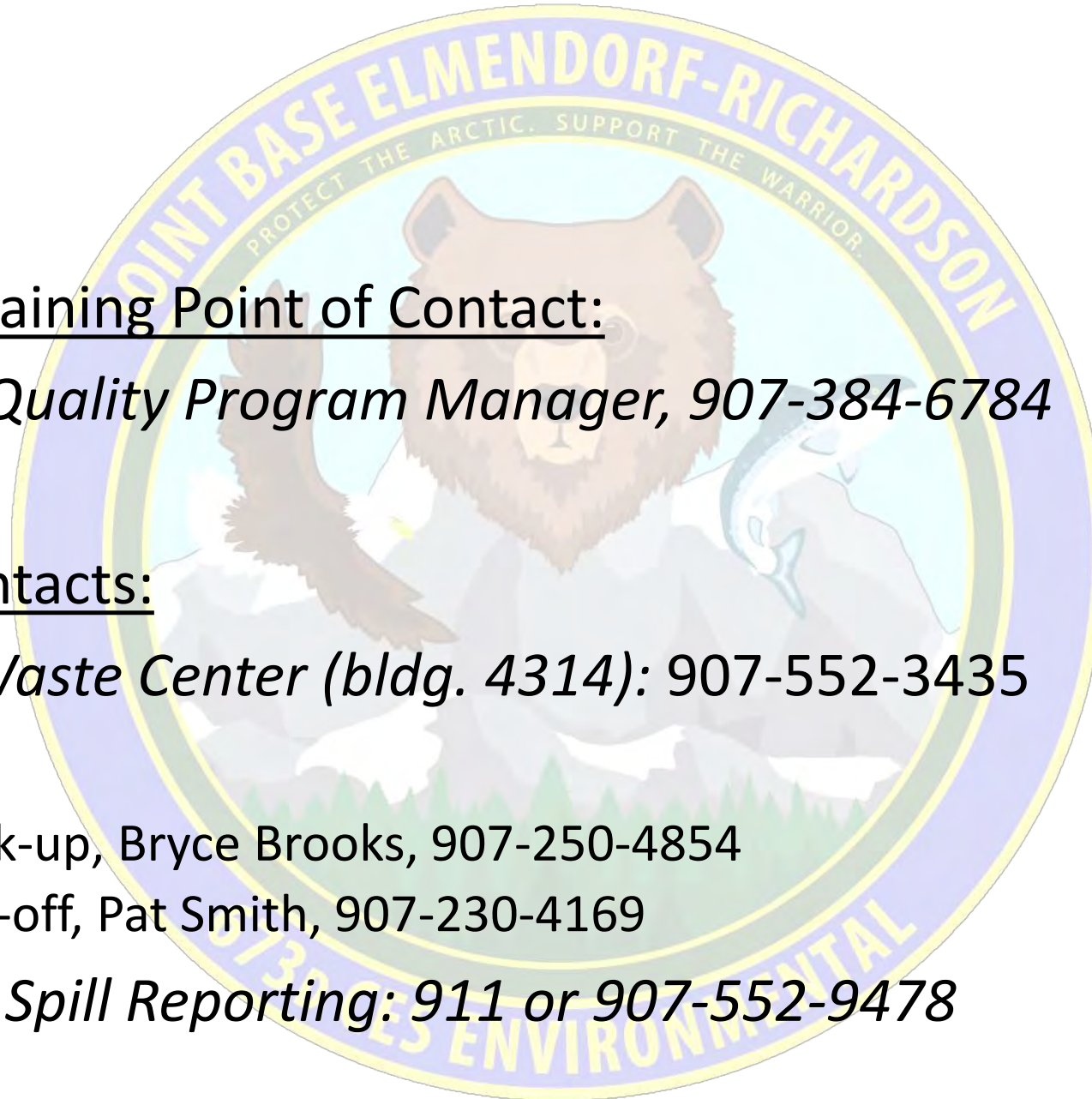
Contacts:

Stormwater Training Point of Contact:

- *JBER Water Quality Program Manager, 907-384-6784*

Additional Contacts:

- *Hazardous Waste Center (bldg. 4314): 907-552-3435*
- *DLA:*
 - Battery pick-up, Bryce Brooks, 907-250-4854
 - Drum drop-off, Pat Smith, 907-230-4169
- *JBER Fire for Spill Reporting: 911 or 907-552-9478*



Visit JBER Environmental's Website to Download the SWPPP

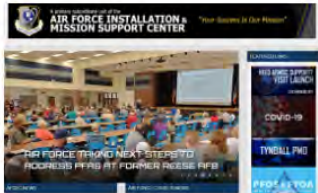
(<https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>)



JBER Environmental

The Joint Base Elmendorf-Richardson (JBER) Environmental Management Office is dedicated to providing outstanding environmental stewardship while assisting JBER to accomplish its mission. This section includes various documents and information to increase public awareness on JBER's environmental programs and initiatives. For questions, please feel free to reach out to the Environment Management Office using the contact information located on this page.

AFCEC Website

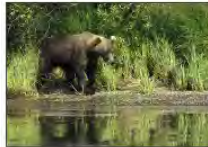


Restoration

The Environmental Restoration Section is responsible for cleaning up contamination from past operations by reducing risks to human health and the environment. The section manages the Installation Restoration Program, Military Munitions Response Program and Contaminated Sites Program.

Conservation

Joint Base Elmendorf-Richardson is responsible for the sound management and protection of more than 74,000 acres of land. These lands are relatively unspoiled and serve as a natural area for local wildlife. They also are open to the base population and general public for outdoor recreational uses. The Conservation Program is responsible for forestry, fish and wildlife management, outdoor recreation planning, as well as cultural resources management on JBER.



Explore Environmental Conservation on JBER

Planning

National Environmental Policy Act (NEPA) compliance

Menu

2022 JBER Environmental Restoration Community Involvement Plan public survey

Environmental Home

Proposed Plan for SS109 and Link to Public Comments

Compliance

Conservation

Environmental Planning

Water Quality

Contact us

Recycling

PRSC Environmental Commitment



End-of-Course Exam

To successfully complete this training, you will need to pass the end-of-course exam by 85%.

Exam consists of 11 true or false and multiple-choice questions.

If you fail the exam, you will be prompted to re-take it. A second failure will cause you to re-take the course.

Appendix E:

Public Outreach and Education Materials

**CLEAN WATER IS AT
YOUR COMMAND!**

**Prevent polluted runoff and spills
from entering JBER's waterways!**

JBER Stormwater Program

Jber.jb.mil/Services-Resources/Environmental/



PREVENT POLLUTION

BY PICKING UP YOUR DOG'S WASTE

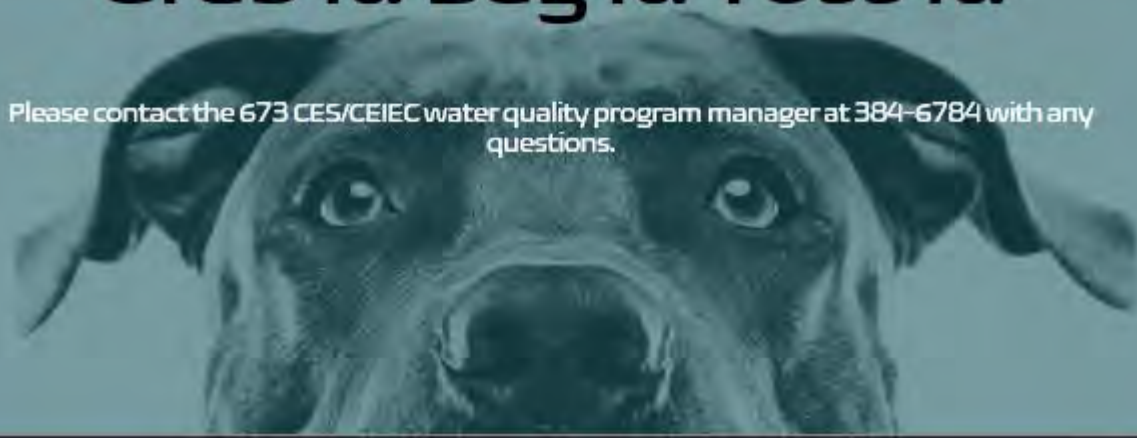
**Swimming or fishing,
anyone?**

**Dog waste is not a natural fertilizer and is full
of bacteria, viruses, and other substances.**

**When you don't collect your dog's waste,
rainfall and snowmelt washes the waste into
storm drains and overland, straight to rivers,
lakes, and ponds with
NO FILTERING OR TREATMENT.**

Grab it. Bag it. Toss it.

**Please contact the 673 CES/CEIEC water quality program manager at 384-6784 with any
questions.**



Floor Drain & Oil/Water Separator

Best Management Practices

Floor drains direct wastewater into the sanitary sewer system. Some floor drains are directly connected to the sewer, while others are routed through Oil Water Separators (OWS). An OWS is designed to *remove oil-based contaminants* before wastewater is discharged. On JBER, all wastewater flows to the municipal Wastewater Treatment Facility before discharging into Cook Inlet.

When solvents, fire foam, or other chemicals enter the sanitary sewer system, the treatment process may be disrupted, resulting in the discharge of contaminants into the ocean.

It is also illegal, and can result in expensive clean up costs, fines, and/or jail time.

In case of accidental spill, CALL **911**

Best Management Practices

Floor Drains

- Properly store all chemicals, HAZMAT, and HAZWASTE Cap/close all chemical containers when not in use Strap bulk chemical containers to the wall
- Use dry cleanup on spills ASAP
- Practice spill response frequently
- Place labeled drip pans or containment devices under all sources of drips and leaks
- Drain fluids into pans or containment devices and dispose of fluids into properly labeled containers
- Only use JBER-approved cleaners
- Use high pressure, low-volume hot wash-water
- Only wash equipment at approved washrack facilities Never wash equipment outside, where the wash-water can drain to storm drains

Oil/Water Separators

- OWSs are not secondary containment and should never be used to dispose of oil or other chemicals
- Emulsifying soaps (e.g., Simple Green, Dawn Dish Soap) are not OWS-compatible. If your facility is connected to an OWS, only use non-emulsifying soaps
- If an OWS is alarming or malfunctioning, submit a work request to the 773 CES

Never put emulsifying detergents down OWS units!

Use dry cleanup on spills,

and properly dispose of HazWastes!

Thank you for being an active member of the JBER community!

Practicing these simple strategies is crucial for preventing stormwater contamination and protecting our groundwater and surface water resources.

For more information on how you can protect our water, visit:

- <https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>
- <https://dec.alaska.gov/water/wastewater/stormwater/>

Or Contact:

JBER Water Quality Program Manager

673rd CES/CEIEC

(907) 384-6784



**STORMWATER
POLLUTION
PREVENTION**
Joint Base
Elmendorf-Richardson



What is stormwater?

Stormwater is water from rain or snow melt that flows over land. The runoff can be from building roofs or parking lots and flows along roads, ditches, swales, and through storm drain inlets and culverts. Storm water can eventually flow to larger water bodies such as the ocean, rivers, and lakes.

Why is this important?

Stormwater is untreated when it enters water bodies and can carry harmful pollutants and bacteria. When improperly managed, contaminants such as oil, antifreeze, detergent, grass clippings, pet waste, trash, sediment, and other pollutants can enter the stormwater system. JBER's stormwater system leads directly to Ship Creek, Cook Inlet, and essential wetlands.

How can YOU avoid stormwater pollution?

- 1 Don't wash your car in the street.** Go to a commercial or on-base car wash, which properly manage the wastewater to prevent pollution.

If it's in our streets, it's in our streams!



- 2 Responsible yard care.** If you must use fertilizers, use responsibly. Follow labels and avoid applying before heavy rain. Properly dispose of yard waste to avoid leaves and grass clippings clogging storm drains.

- 3 Manage household waste properly.** Know how to use, store, and recycle household waste and motor oil.

- 5 Don't litter.** If you see litter, pick it up! Dispose of trash and recyclables properly in designated receptacles.

- 6 Keep pollution out of storm drains.** No dumping! Storm drains lead to waterways without filtration or treatment.

- 4 Scoop the Poop!**

THE POOP FAIRY DOESN'T EXIST



Dog waste is full of bacteria, viruses, and other substances that are harmful to humans and the environment. When dog waste is left on the ground, runoff from snow and rain washes the waste into storm drains and water bodies, without filtration or treatment. Fishing or swimming, anyone?

Prevent water pollution; scoop the poop! Grab it, bag it, toss it! Contact JBER's water quality program manager with questions at 384-6784.

A photograph of a storm drain on a grassy area. The drain is a metal grate set into a concrete curb. The water in the drain is dark and murky, with some debris like leaves and a cigarette butt floating in it. In the foreground, there is a large, vibrant rainbow oil slick on the asphalt surface, showing various colors like blue, green, yellow, and red. The background shows a grassy area with some fallen leaves.

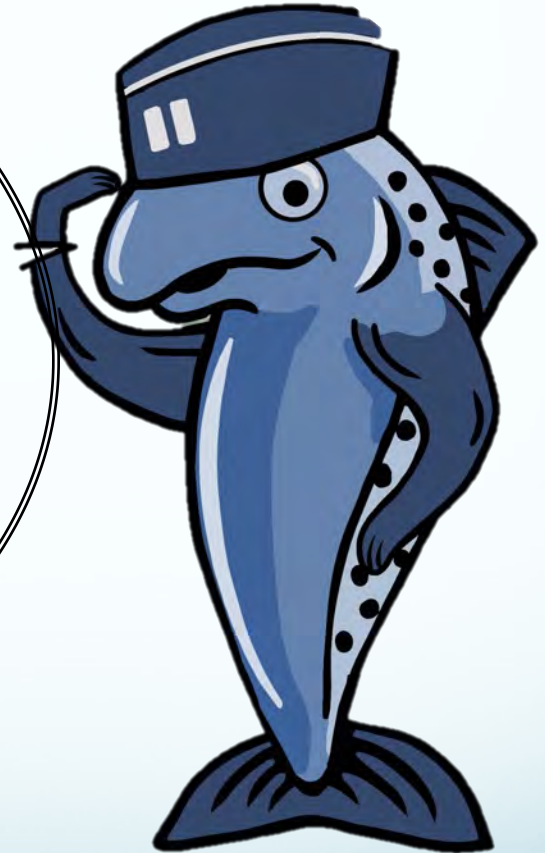
Stormwater Pollution Prevention Training

Joint Base Elmendorf-Richardson

2022 Annual Training

Goals & Objectives

- Understand what stormwater is and why it matters
- Review how JBER is regulated regarding stormwater
- Best Management Practices to prevent stormwater pollution








What is “stormwater” ?

All types of **precipitation** and **snowmelt** that flow over the surface of the ground:

- ✓ Water from building roofs, parking lots, and storage yards
- ✓ Water flowing along roads, ditches, and swales and through storm drain inlets and culverts
- ✓ Discharges you may create at your facility from hoses, water tanks, etc.



Legend

-  MS4 Monitoring points
-  Snow Disposal Areas
-  Waterbody
-  Watercourse
-  Installation Area

2018 Aerial Image

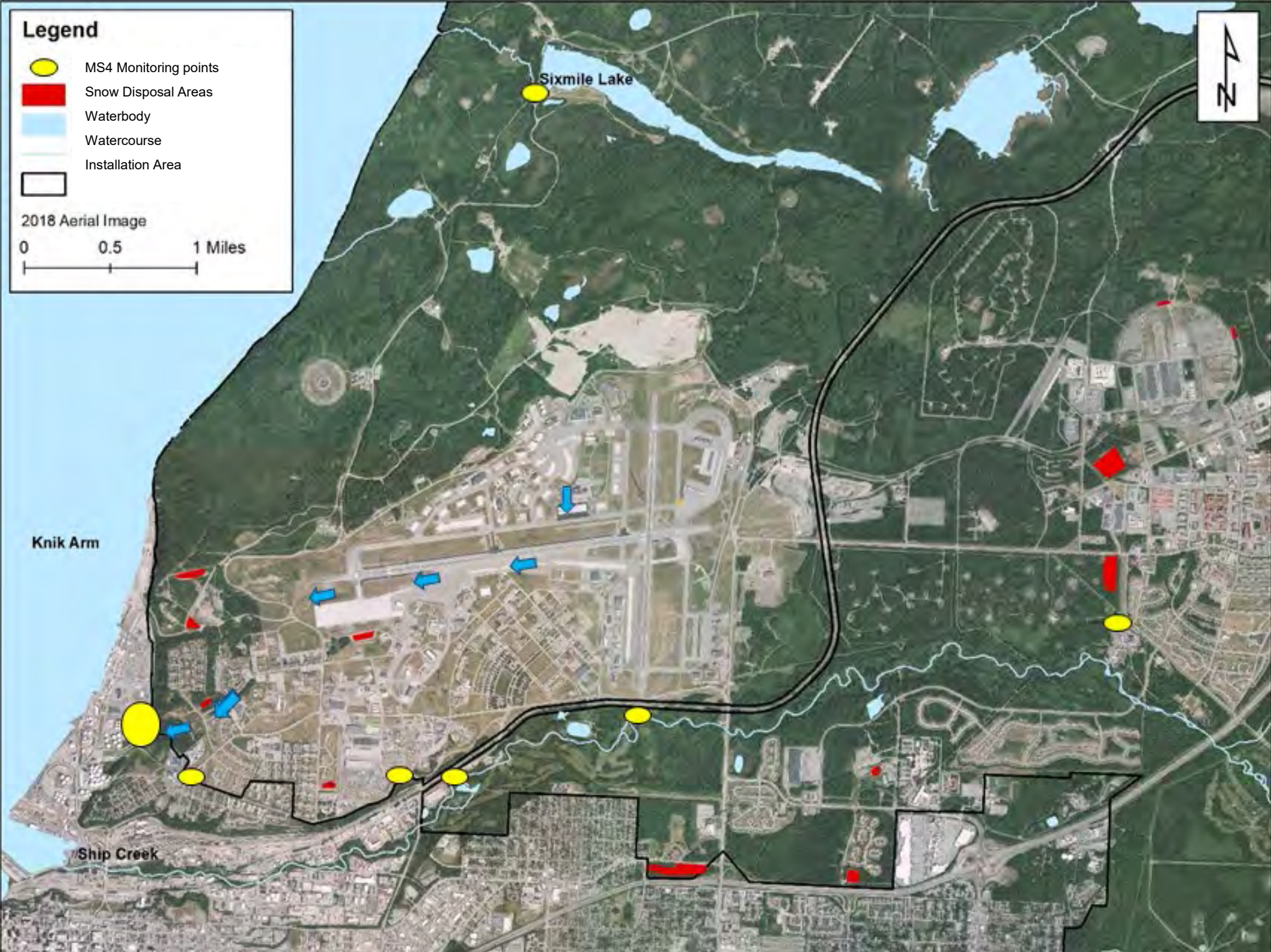
0 0.5 1 Miles



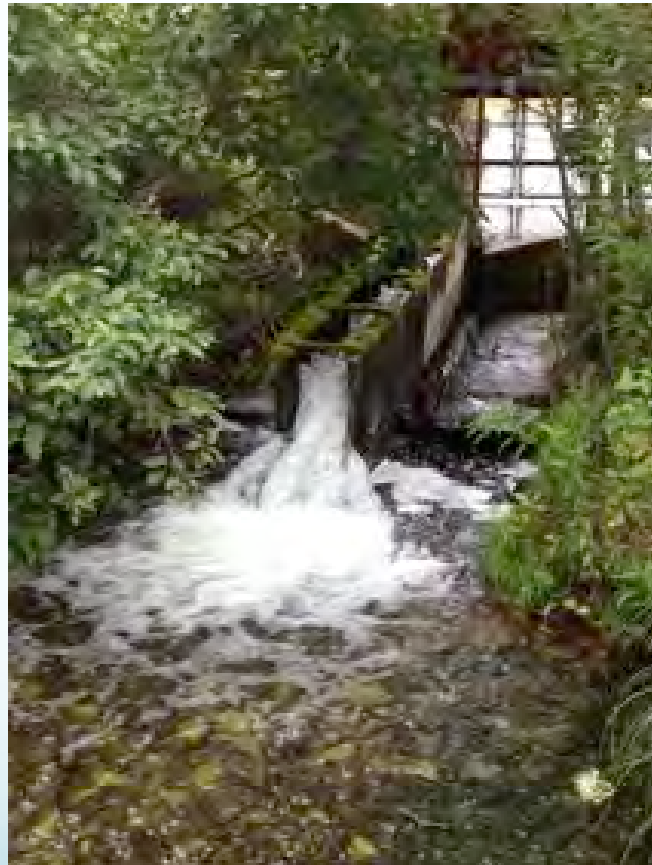
Knik Arm

Ship Creek

Sixmile Lake



Stormwater runoff at JBER flows to natural water bodies *without treatment or filtration*



What's on the ground, flows to the inlet





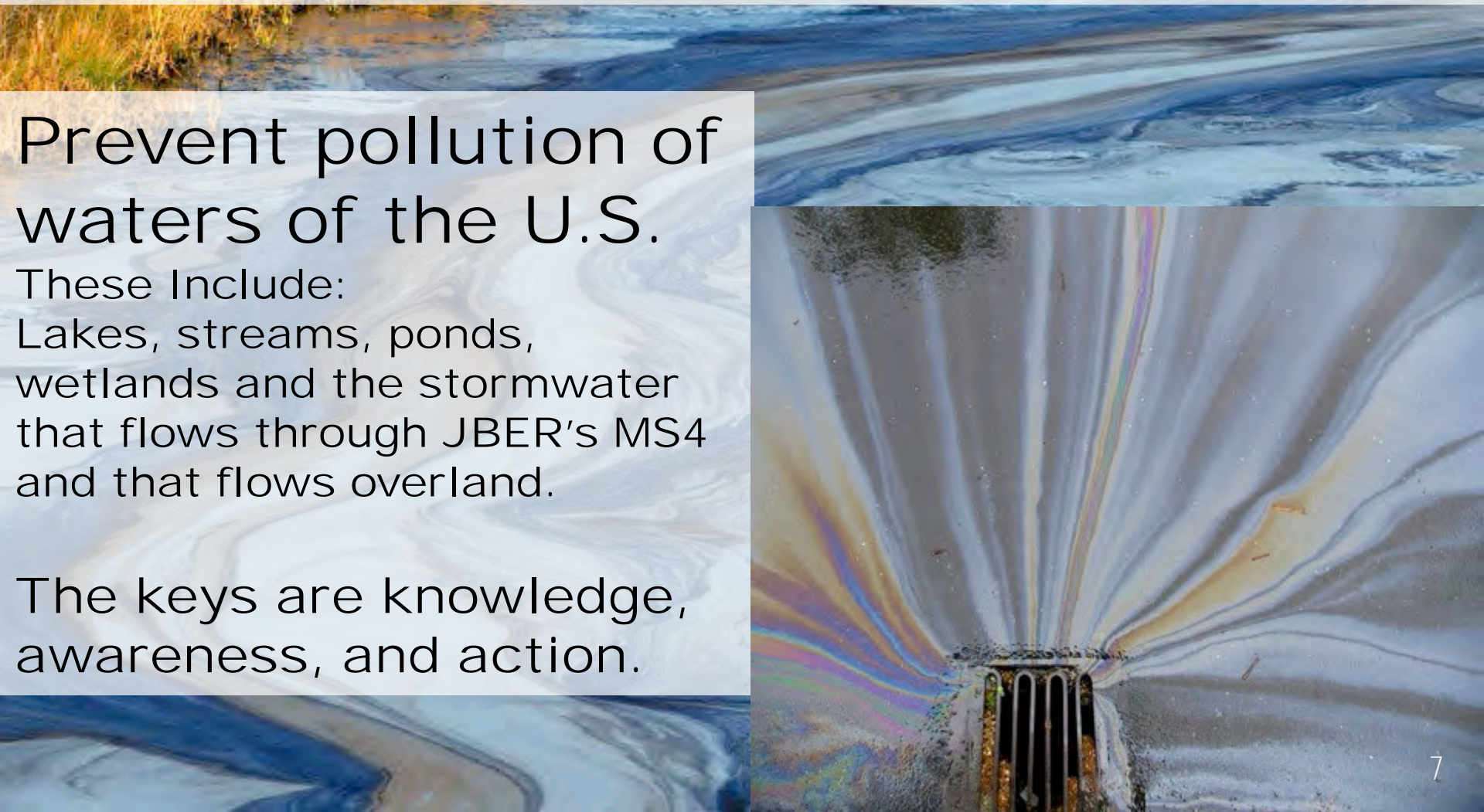
Stormwater pollution prevention goal?

Prevent pollution of
waters of the U.S.

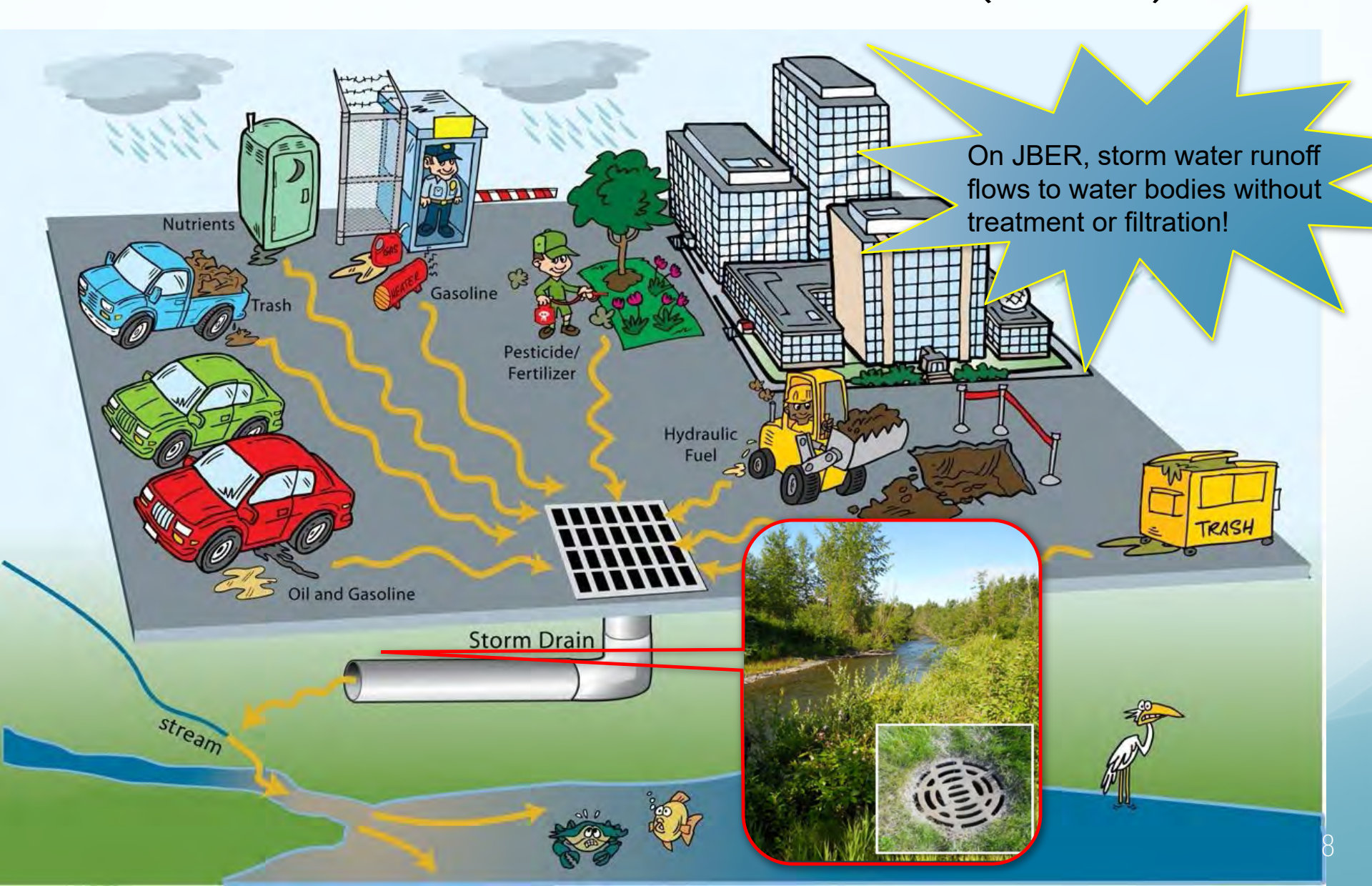
These Include:

Lakes, streams, ponds,
wetlands and the stormwater
that flows through JBER's MS4
and that flows overland.

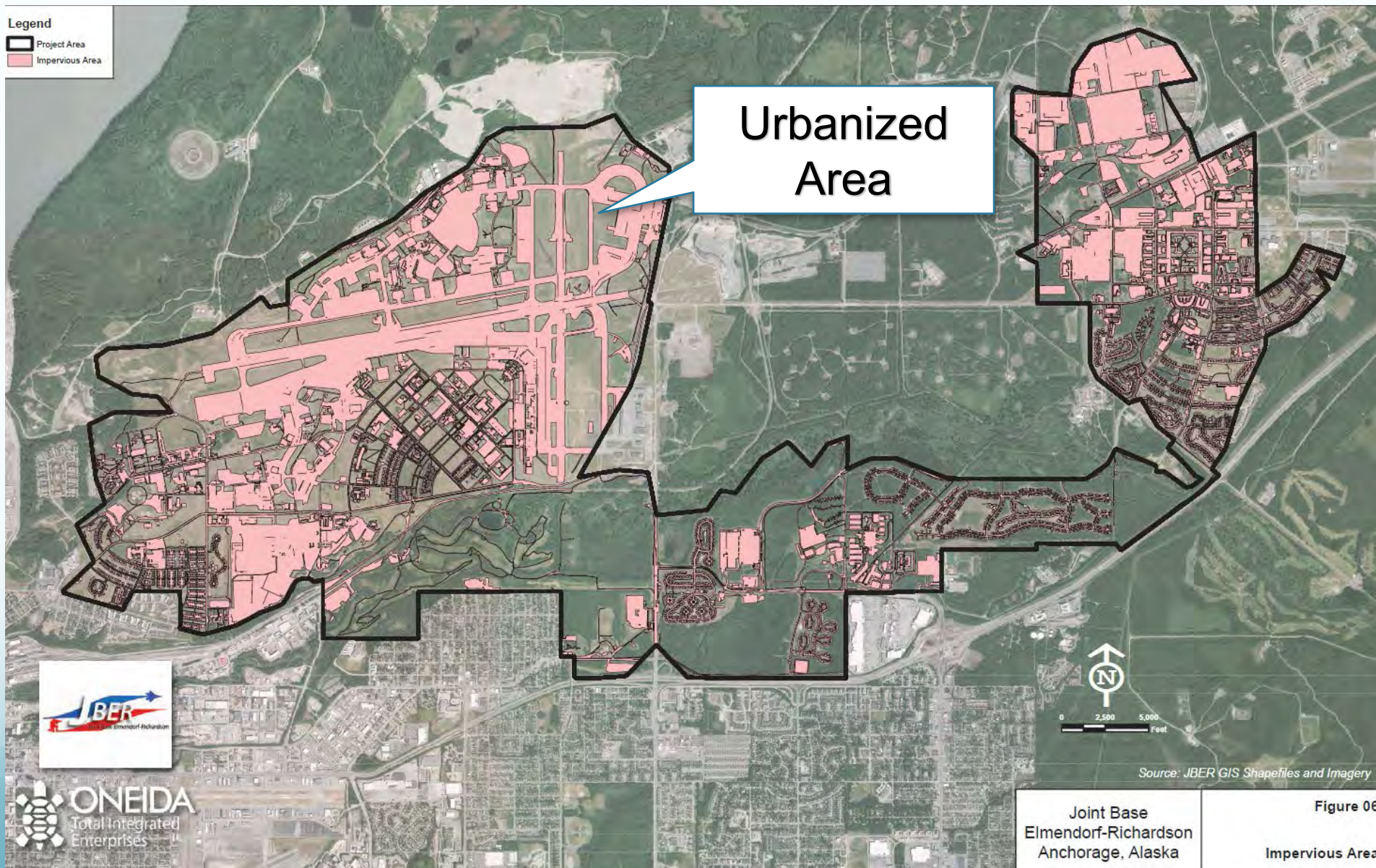
The keys are knowledge,
awareness, and action.



Municipal Separate Storm Sewer System (MS4) Multi-Sector General Permit (MSGP)



MS4 Urbanized Area



MS4 Construction Requirements

- On JBER, operators of 1 acre or larger construction projects must prepare and follow a Stormwater Pollution Prevention Plan (SWPPP)
- Operators of smaller projects (< 1 acre) must prepare and follow an Erosion and Sediment Control Plan (ESCP)
- Before starting construction, operators must provide their SWPPP or ESCP to the JBER Water Quality Program Manager for review



Please email
jessica.weikert@us.af.mil
for SWPPP & ESCP reviews

The Multi-Sector General Permit (MSGP) Program



INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN
JOINT BASE ELMENDORF-RICHARDSON, ALASKA



UPDATE February 2021
EFFECTIVE DATES OF THIS PERMIT
April 1, 2020 TO MARCH 31, 2025

- Driven by **Clean Water Act** and **Alaska Pollutant Discharge Elimination System (APDES)**
- JBER MSGP # AKR060000
- JBER's SWPPP
 - Explains stormwater pollution prevention requirements and potential pollution sources
 - Details Best Management Practices (BMPs)
 - Source of information for training

Best Management Practices (BMPs)

- The BMP's stipulated in the MSGP-SWPPP or MS4-SWMP can be **structural** or **procedural**
- BMPs allow facilities to operate efficiently and effectively without polluting stormwater
- BMPs should be regularly evaluated for effectiveness and **modified/replaced as necessary**

Best Management Practices

- Structural: a containment pallet for drums
- Procedural: vehicle inspection for leaks before use



(U.S. Air Force photo by Air Force photo A1C Jack Sanders)

Basic BMPS

- Minimize exposure
- Good housekeeping
- Preventative maintenance
- Spill prevention and response
- Management of runoff
- Salt storage pile management
- Employee training
- Properly disposing of waste, garbage, and floatable debris
- Dust generation and vehicle tracking of industrial materials



What are some specific examples of basic BMPs at JBER?



Snow Disposal

- Anchorage receives an average of 75 inches of snow each year
- Disposal of snow directly into the waters of the US is prohibited
 - Ship Creek + Cook Inlet
- All that snow needs to be managed and kept free of contamination
- JBER manages snow disposal sites where snowmelt infiltrates rather than draining to surface water
- Stockpiles are on pervious ground greater than 100 feet away from stormwater conveyances



(U.S. Air Force photo by Senior Airman Curt Beach)

What are some examples of common snow removal jobs?



Snow Disposal BMPs



- Detention basins, dikes, berms, ditches, vegetative buffers near stockpiles
- Keeping stockpiles trash and garbage free
- Remove trash from piles as snow melts
- Following snow melt, sweep outdoor areas instead of hosing them down
- Address leaks, drips, spills and trash before they are covered with snow

(U.S. Air Force photos by Staff Sgt. Westin Warburton)

Snow Disposal BMPs

- How can you protect structural BMPs?
 - Using orange snow stakes to mark BMPs, like oil socks
- Addressing oil or hydraulic fluid spills in snow
 - Keep a spill kit on your vehicle
 - Informal: garbage can, shovel, oil absorbent pads, kitty litter
 - Clean up spills before they're covered by snow

What are some other BMPs you're already using?



(U.S. Air Force photo by Senior Airman Curt Beach)

Spill Reporting and Cleanup

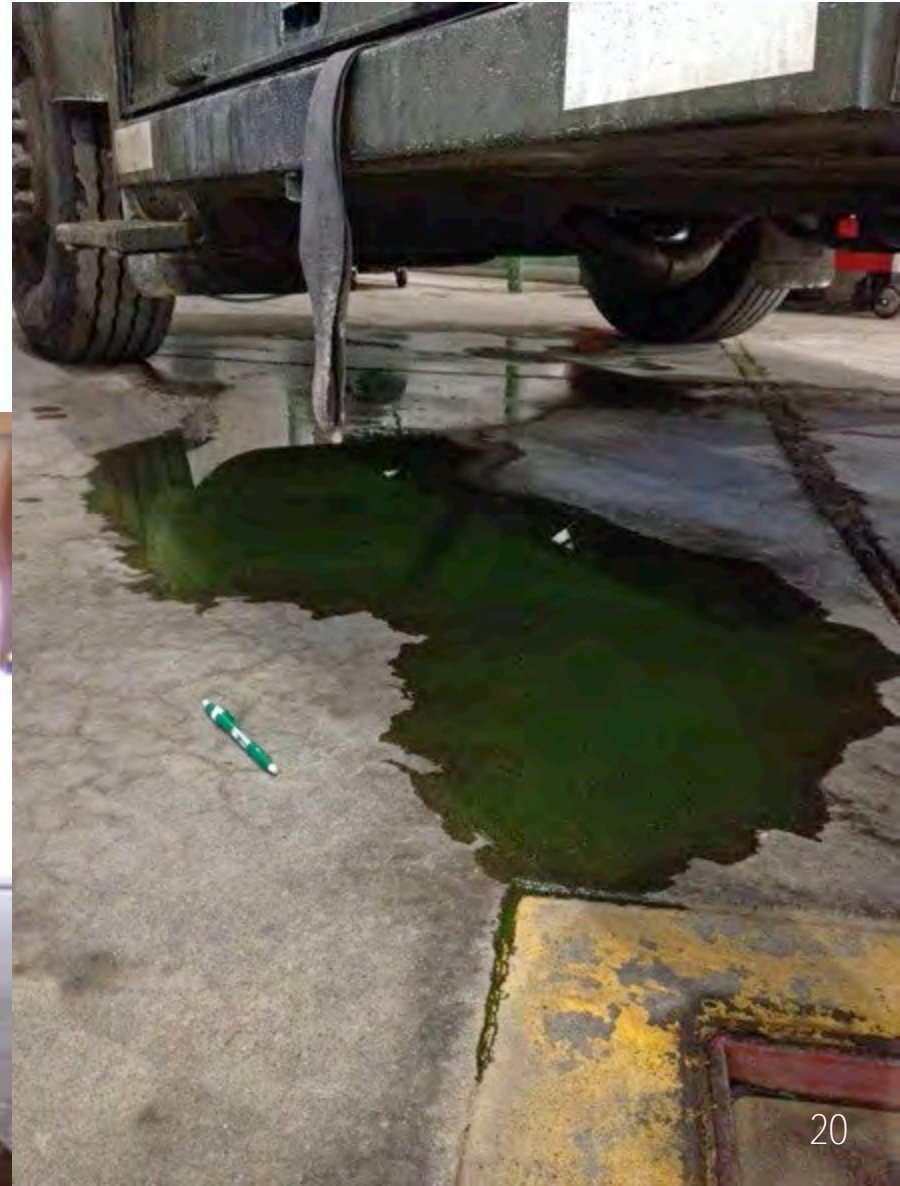
- Follow JBER spill notification and response procedures
- Maintain spill kits at key locations
- Promptly clean up small spills using dry methods when possible
 - Cleanup in snow can use simple methods: shovel material into containers or garbage bags
- Dispose of spill cleanup materials appropriately
- Notify JBER Environmental Compliance Office (384-6784) as required



Maintain leaking equipment ASAP



Address leaks and spills as soon as they are discovered!



Be Prepared to Deal with a Leak or Spill During Snow Removal Activities

- Have absorbent pads **readily available** to absorb spills or leaks onto asphalt or other impervious surfaces or into ponded meltwater
- Have shovels or scoops and containers available to remove and contain large spills of hydraulic or other fluids in the snow
- **At JBER, if a leak or spill occurs during snow removal operations, an equipment operator will call the Snow Barn for a response vehicle that will be prepared with the materials or tools needed to contain the spill and, if needed, to temporarily repair the problem**

Equipment Maintenance and Repair

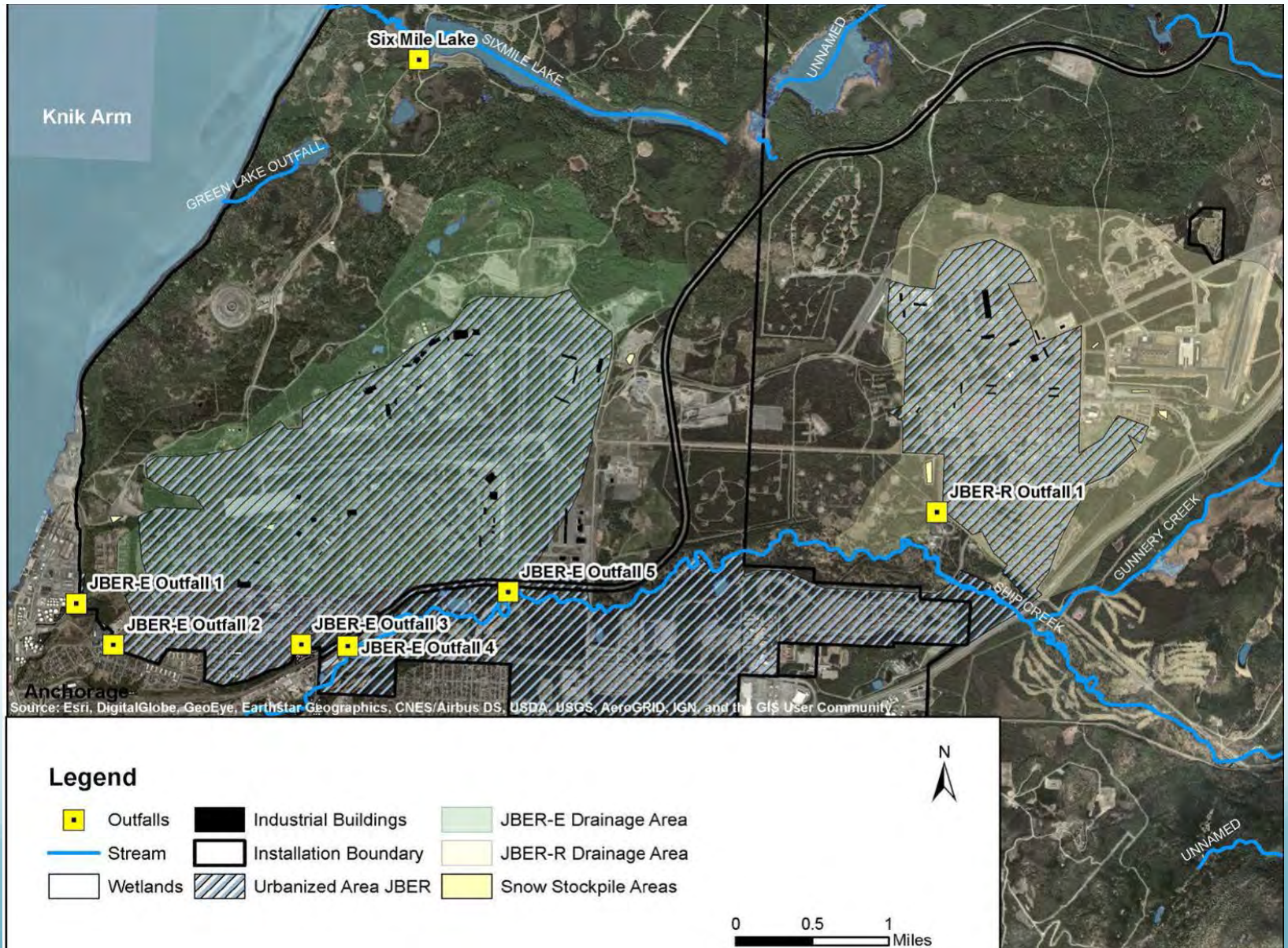
- Maintain equipment **before** bringing onto the job site
- Do not bring leaking equipment to the job site
- Report any maintenance problems as soon as possible



JBER Snow Stockpiles



JBER Drainage Areas



JBER Contacts

JBER Water Quality Program Manager

- office: 384-6784
jessica.weikert@us.af.mil, JBER-R Building 724

Battery Turn-in

- **JBER Hazardous Waste Center** 384-3322, JBER-E Building 4314

Waste Turn-in Contractor

- **Environmental Compliance Consultants (ECC)** 552-3435, JBER-E Building 4314

JBER Fire Department

- 552-9478 (or 911)



Clean water is essential for good health
and survival... *and permit compliance!*



Video Presentation

A Drop in the Bucket



What is stormwater?



(INFO)

All precipitation & snowmelt that flow over the ground's surface

- ✓ Water from building roofs, parking lots, and storage yards
- ✓ Water flowing along roads, ditches, and swales and through storm drain inlets and culverts
- ✓ Discharges you may create at your facility from hoses, water tanks, etc.



Stormwater runoff at JBER flows to natural water bodies
without treatment or filtration



The Pacific's Keystone Weapon System





Stormwater Pollution Prevention



(INFO)

- Preventing spills from entering Waters of the U.S. is **critical for maintaining healthy waters and avoiding major incidents.**
- **Waters of the U.S. include** lakes, streams, ponds, wetlands and the stormwater that flows through overland and stormwater sewer.

**The keys are
KNOWLEDGE and ACTION**



The Pacific's Keystone Weapon System





Best Management Practices for Preventing Stormwater Pollution

(INFO)



- ✓ Follow spill notification and response procedures
- ✓ Maintain emergency spill kits on site at key locations, with appropriate cleanup materials
- ✓ Display facility drainage map showing areas of potential spills, direction of stormwater flow, and location of spill response equipment

JBER Water Quality Program Manager:

Jessica Weikert, jessica.weikert@us.af.mil, (907) 384-6784



The Pacific's Keystone Weapon System



STORMWATER POLLUTION PREVENTION

JOINT BASE ELMENDORF - RICHARDSON

Stormwater is precipitation, snowmelt, and discharges you may create at your facility from hoses or water tanks that flow over the ground's surface.

On JBER, stormwater runoff flows directly to natural water bodies
WITHOUT THE BENEFIT OF TREATMENT OR FILTRATION.

All facilities on JBER are responsible for preventing illicit stormwater discharges.

Here are a few things to look out for at your facility:

1

Non-stormwater discharges

There should be no sediment or trash build up around storm drains. All wash water is prohibited from being discharged into storm drains. Check perimeter for leaking pipes or hoses.



2

Hazardous materials and waste management

Regularly dispose of trash, used rags, empty containers, aerosols, etc, in and outdoors. Outdoor storage areas should comply with hazardous material policies, including appropriate cover and containment.

3

Vehicle parking & maintenance

Spills/drips of fuel, oil, and other fluids in parking lots, storage yards, and wash areas must be cleaned up promptly. Spill reporting procedures should be available and accessible. Call 911 to report spills on JBER.



**GOOD HOUSEKEEPING & PROMPT
SPILL RESPONSE ARE KEY!**

JBER Water Quality Program // 907-384-6784

Appendix F:

Stormwater Steering Committee Meeting Summaries



Stormwater Steering Committee Meeting Agenda – 673/773rd Joint-Base Elmendorf Richardson

Client: 673 CES/CEIEC Water Quality Program Manager (via USACE AK and Prime Contractor ECC)

Date: Tuesday, 29 March 2022

Time: 9 am - 9:40 am (Alaska Time Zone)

Location: Teleconference

Attendees:

Name	Company
Jessica Weikert	673 CES/CEIEC
Matthew Beattie	673 CES/CEIEC
Ben Kopinski	673 CES/CEIEC
Nicole Warner	Army National Guard Water Quality
Sean Palmer	PACAF/AFCEC CZOP
Dennis Sessler	773 CES/CEOHP
Ann Marie Mills	673 FSS/FSO
TSgt Jean Baptiste Museau	673 AMDS/SGPB
Richard Flowers	Aurora Military Housing
Sarah Runck	PACAF/AFCEC CZOP
Charles Morgan	
Melissa Schiff	Doyon Utilities
Natasha Knight	ADEC
Katrina Chambon	ADEC
Nicholas Dobberpuhl	EA
Hannah McCue	EA
Paxson Lowther	EA

Topics and Agenda Items:

1. Introductions and purpose
 - a. What is the purpose of quarterly Stormwater Steering Committee Meetings?
 - i. Satisfy MS4 Permit requirement
 - ii. Increase effectiveness and awareness of JBER's Stormwater program
 - iii. To share ideas
 - b. Discussion:
 - i. Recommendation for two-sided flyer for staff's stormwater awareness/management on base that outlines quantitative requirements in the stormwater permits
 - ii. Recommendation to develop educational outreach for students and parents



- iii. Stormscape model noted as an effective tool for community outreach in previous years, recommended by previous JBER Water Quality Manager, Sarah Runck
- iv. Recommendation for three-fold display at BX on Earth Day and giving out free stuff to individuals
 - 1. Partnership with Cultural Resources for an event
- 2. What is stormwater on JBER?
 - a. Precipitation and snow melt that flows over land:
 - i. Water from building roofs, parking lots, and storage yards
 - ii. Water flowing along roads, ditches, and swales through storm drain inlets/culverts
 - iii. Allowable non-stormwater discharges you may create at your facility
 - b. Stormwater runoff flows to water bodies (i.e., Ship Creek, Cook Inlet) without treatment or filtration
 - c. *Prevention* is the only means in which we can prevent stormwater pollution
- 3. Water Quality Program overview of 2021:
 - a. Permanent Water Quality Manager, Jessica Weikert, has been onboard since October. Jessica was previously the Water Quality Program Intern
 - b. Industrial Wastewater Discharge Permit renewed until December 2026. Reach out to Jessica Weikert to request permit.
 - c. MS4 permit inspection by the state and ADEC conducted in December 2021
 - d. Document review, interviews, and on-site inspections of stormwater outfalls, snow dumps, and several industrial sites conducted throughout the year
- 4. Water Quality Program overview of 2022:
 - a. Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP) and Industrial Wastewater Management Plan (IWMP) are annually reviewed and updated.
 - b. Download plans on JBER's stormwater webpage:
<https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>
 - i. Or you can request the permits directly from Jessica
- 5. 2022 construction season and stormwater planning:
 - a. Operators must provide SWPPP or Erosion and Sediment Control Plan (ESCP) to Jessica Weikert (via email) for review before starting construction
 - b. Operators of one acre or larger construction projects must prepare and follow a SWPPP
 - c. Operators of less than one acre construction projects must prepare and follow an ESCP
- 6. Green infrastructure/low impact development (GI/LID) plan
 - a. GI/LID Plan developed in 2020
 - b. GI/LID Plan is required under the JBER municipal storm water permit



- c. Green infrastructure are pervious green surfaces that absorb runoff
 - d. Green infrastructure recommended in JBER's GI/LID Plan include rain gardens, vegetated swales and ditches, constructed wetlands, permeable pavers, and rainwater collection
7. Closing remarks:
- a. Please complete poll sent in follow-up email to signify attendance
 - b. Reach out to Jessica Weikert for any additional questions or comments
 - c. Final thought or questions from committee members?
 - i. Dennis Sessler recommended to utilize help desk at 773rd to assist in the distribution of stormwater materials to facility managers



Stormwater Steering Committee Meeting Agenda – 673/773rd Joint-Base Elmendorf Richardson

Client: 673 CES/CEIEC Water Quality Program Manager (via USACE AK and Prime Contractor ECC)

Date: Thursday, 16 June 2022

Time: 9:30 am - 9:50 am (Alaska Time Zone)

Location: Teleconference

Attendees:

Name	Company
Jessica Weikert	673 CES/CEIEC
Matthew Beattie	673 CES/CEIEC
Sarah Runk	PACAF/AFCEC CZOP
Hannah Myers	673 CES/CEIEC
Melissa Schiff	Doyon Utilities
James Lang	673 CES/CEIEC
Lindsey ?	?
Paxson Lowther	EA

Topics and Agenda Items:

1. Introductions and purpose
 - a. What is the purpose of quarterly Stormwater Steering Committee Meetings?
 - i. Satisfy MS4 Permit requirement
 - ii. Increase effectiveness and awareness of JBER's Stormwater program
 - iii. To share ideas
2. What is stormwater on JBER?
 - a. Precipitation and snow melt that flows over land:
 - i. Water from building roofs, parking lots, and storage yards
 - ii. Water flowing along roads, ditches, and swales through storm drain inlets/culverts
 - iii. Allowable non-stormwater discharges you may create at your facility
 - b. Stormwater runoff flows to water bodies (i.e., Ship Creek, Cook Inlet) without treatment or filtration
 - c. *Prevention* is the only means in which we can prevent stormwater pollution
3. Water Quality Program overview of 2022:
 - a. Earth Day in April



- i. Took dog waste bags to veterinarian on base with educational materials on pollution prevention of dog waste
 - ii. Distributed materials to Aurora Housing for residents, including booklets for school age kids, dog waste bags, and pamphlets
 - b. Construction season has begun
 - i. On JBER, operators of 1 acre or larger construction projects must prepare and follow a Stormwater Pollution Prevention Plan (SWPPP)
 - ii. On JBER, operators of 1 acre or larger construction projects must prepare and follow a Stormwater Pollution Prevention Plan (SWPPP)
 - iii. Before starting construction, operators must provide their SWPPP or ESCP to the JBER Water Quality Program Manager for review
 - iv. Please email Jessica Weikert for SWPPP & ESCP reviews
 - c. Stormwater training for Aero Club
 - d. Installation wide cleanup was conducted
 - e. Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP) and Industrial Wastewater Management Plan (IWMP) are annually reviewed and updated.
 - f. Download plans on JBER's stormwater webpage:
<https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>
 - i. Or you can request the permits directly from Jessica
- 4. Guest Speaker: Ms. Hannah Myers, Landfills/Toxics and EMS Program Manager
 - a. Toxic Materials in buildings:
 - i. Toxic materials include asbestos, lead, polychlorobiphenyls, per- and polyfluoroalkyl substances, formaldehyde, and mercury.
 - ii. Asbestos and Lead are both naturally occurring. PCBs and PFAS are man-made. All are dangerous to human health and the environment above certain concentrations.
 - iii. During building renovations/demolitions ACM/LBP/PCBs could be released into the environment.
 - 1. Lead and PCBs are a risk to stormwater/groundwater, while ACM is Air Quality
 - iv. During excavations PFAS contaminated soils could be encountered. Especially around buildings outfitted with fire suppression foam, and near landfills/runways
 - 1. It is important to always check with restoration before digging anywhere on base to be sure the area is free from contamination.
 - v. During construction projects it is important that all toxic materials be disposed of appropriately. Toxic substances are particularly common in buildings built before the 1990's but could be found in buildings of any age.



- vi. During construction projects it is important that all toxic materials be disposed of appropriately. Toxic substances are particularly common in buildings built before the 1990's but could be found in buildings of any age.
 - vii. EPA has announced new guidance on June 15th, 2022 for allowable levels of PFAS in drinking water. The timeline is unknown when these limits need to be met.
 - viii. <https://www.epa.gov/newsreleases/epa-announces-new-drinking-water-health-advisories-pfas-chemicals-1-billion-bipartisan>
 - b. PFAS Pre-publication Notice (Official version to be published in Federal Register):
 - i. <https://www.epa.gov/system/files/documents/2022-06/prepublication-four-pfas-june-2022.pdf>
 - c. FAQs (including discussions of final and interim health advisories):
 - i. <https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genx-chemicals-and-pfbs>
 - d. Public Water Systems Fact Sheet:
 - i. <https://www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-water-system.pdf>
5. Closing remarks:
- a. Reach out to Jessica Weikert for any additional questions or comments
 - b. Final thought or questions from committee members?



Stormwater Steering Committee Meeting Agenda – 673/773rd Joint-Base Elmendorf Richardson

Client: 673 CES/CEIEC Water Quality Program Manager (via USACE AK and Prime Contractor ECC)

Date: Thursday, 29 September 2022

Time: 9:30 am – 10:00 am (Alaska Time Zone)

Location: Teleconference

Attendees:

Name	Company
Jessica Weikert	673 CES/CEIEC
Amy Kearns	673 CES/CEIEC
Paxson Lowther	EA
Hannah McCue	EA

Topics and Agenda Items:

1. Introductions and purpose
 - a. What is the purpose of quarterly Stormwater Steering Committee Meetings?
 - i. Satisfy MS4 Permit requirement
 - ii. Increase effectiveness and awareness of JBER's Stormwater program
 - iii. To share ideas
 - iv. Prevent pollution into waters of the U.S.
2. What is stormwater on JBER?
 - a. Precipitation and snow melt that flows over land:
 - i. Water from building roofs, parking lots, and storage yards
 - ii. Water flowing along roads, ditches, and swales through storm drain inlets/culverts
 - iii. Allowable non-stormwater discharges you may create at your facility
 - b. Stormwater runoff flows to water bodies (i.e., Ship Creek, Cook Inlet) without treatment or filtration
 - c. *Prevention* is the only means by which we can prevent stormwater pollution



- d. What's on the ground, flows to Cook Inlet. Some examples of bad practices of preventing contaminated stormwater
 - i. Exposed leaks from vehicles that are not promptly cleaned
 - ii. Bad housekeeping
 - iii. Foam release or washing outdoors
 - iv. Exposed materials that may have oily residue
 - v. Batteries exposed to the elements and not in secondary containment
3. Water Quality Program overview of Quarter 3, 2022:
 - a. Construction season is wrapping up and going into winter shut down
 - b. Snow School Training. Jessica Weikert just gave the snow removal training to Snow Barn and will be giving a training to the Commander on best snow removal practices.
 - c. Snow and Ice Control Committee pre-season
 - d. TEACH training. This training will be available to anyone who interfaces with industrial operations on base. It will go into detail on the best management practices (BMPs) to prevent stormwater pollution.
 - e. Storm Water Management Plan (SWMP) and Storm Water Pollution Prevention Plan (SWPPP) updates are coming up at the end of the year. These updates will be posted on the JBER Environmental website, but no significant changes are expected to be made. These plans are expected to be published in February 2023.
4. Best Management Practices (BMPs)
 - a. The BMPs stipulated in the MSGP-SWPPP or the MS4-SWMP can be structural or procedural
 - b. Structural BMP – Employs structures to prevent stormwater pollution
 - i. Examples: snow berms around an area so no trash can wash away. A containment pallet for drums.
 - c. Procedural BMP – Employs a standard procedure to prevent stormwater pollution
 - i. Examples: having a spill kit available on site. Vehicle inspection for leaks before use.
 - d. BMPs allow facilities to operate efficiently and effectively without polluting stormwater
 - e. BMPs should be regularly evaluated for effectiveness and modified/replaced as necessary
5. Basic BMPs. These are things you can do to **prevent** stormwater pollution
6. Snow Disposal:
 - a. Anchorage receives an average of 75 inches of snow each year.
 - b. Disposal of snow directly into the waters of the US is prohibited.
 - c. All that snow needs to be managed and kept free of contamination.



- d. JBER manages snow disposal sites where snowmelt infiltrates, rather than draining to surface waters. These stockpiles are on pervious ground greater than 100 feet away from stormwater conveyances.
7. Download plans on JBER's stormwater webpage: <https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>
 - a. Or you can request the permits directly from Jessica
8. **JBER Hazardous Waste Center (ECC):**
 - a. JBER-E Building 4314
 - b. 907-552-3435
9. **Fire Department for Spills:**
 - a. 907-552-9478 (or 911)
10. Closing remarks:
 - a. When will the TEACH training module come online? We are working on it now and expecting it be up and running by the New Year
 - b. Do you recommend anyone take the new EPA released Construction General Permit Inspector Training? This training is similar to AK-CESCL and goes over stormwater BMPs specifically for construction. It is a free training and anyone who interfaces with construction sites is recommended to take it. Given by the EPA to meet EPA requirements. This training does not replace the requirement for AK-CESCL
 - i. <https://www.epa.gov/npdes/construction-general-permit-inspector-training>
 - ii. Mr. Jim Rypkema from ADEC shared that there are AK-CESCL course materials here: <https://www.ak-cescl.com/html/ak-cescl-course-materials.php>
 1. Reviewing these materials doesn't certify you as AK-CESCL – you still need to take the course and earn your certificate
 - c. Thoughts on one in-person meeting per year?
 - i. Group expressed that one in-person meeting per year would be good, while also having the teleconference option.
 - d. Reach out to Jessica Weikert for any additional questions or comments



Stormwater Steering Committee Meeting Agenda – 673/773rd Joint-Base Elmendorf Richardson

Client: 673 CES/CEIEC Water Quality Program Manager (via USACE AK and Prime Contractor ECC)

Date: Wednesday, 14 December 2022

Time: 9:30 am – 10:00 am (Alaska Time Zone)

Location: Teleconference

Attendees:

Name	Company
Jessica Weikert	673 CES/CEIEC
Sarah Runck	AFCEC/CZOP
Dennis Sessler	773 CES/CEOHP
Hannah McCue	EA

Topics and Agenda Items:

1. Introductions and purpose
 - a. What is the purpose of quarterly Stormwater Steering Committee Meetings?
 - i. Satisfy MS4 Permit requirement
 - ii. Increase effectiveness and awareness of JBER's Stormwater program
 - iii. To share ideas
 - iv. Prevent pollution into waters of the U.S.
2. What is stormwater on JBER?
 - a. Precipitation and snow melt that flows over land:
 - i. Water from building roofs, parking lots, and storage yards
 - ii. Water flowing along roads, ditches, and swales through storm drain inlets/culverts
 - iii. Allowable non-stormwater discharges you may create at your facility
 - b. Stormwater runoff flows to water bodies (i.e., Ship Creek, Cook Inlet) without treatment or filtration
 - c. *Prevention* is the only means by which we can prevent stormwater pollution



- d. What's on the ground, flows to Cook Inlet, with some amounts flowing to local lakes or infiltrating into the ground. Contaminants reaching nearby waterbodies is a violation of JBER's stormwater permits.
- e. Some examples of bad practices for preventing contaminated stormwater
 - i. Exposed leaks from vehicles that are not promptly cleaned
 - ii. Bad housekeeping
 - iii. Foam release or washing outdoors
 - iv. Exposed materials that may have oily residue
 - v. Batteries exposed to the elements and not in secondary containment
- 3. Water Quality Program overview of CYQ4 2022:
 - a. AWWU Annual Inspection 27 October 2022. In the future, AWWU expected to review oil and grease sources flowing to the sanitary sewer system.
 - b. Project reviews/charrettes.
 - c. Closing Corrective actions at industrial facilities.
 - d. TEACH training. This training will be available online to UECs, industrial facility managers, and anyone who interfaces with industrial operations on base. The training is expected to be available on TEACH January 2023.
 - e. Storm Water Management Plan (SWMP) and Storm Water Pollution Prevention Plan (SWPPP) updates are coming up at the end of the year. These updates will be posted on the JBER Environmental website, but no significant changes are expected to be made. These plans are expected to be published in February 2023.
 - f. In-person committee meeting June 2023.
- 4. Best Management Practices (BMPs):
 - a. The BMPs stipulated in the MSGP-SWPPP or the MS4-SWMP can be structural or procedural
 - b. Structural BMP – Employs structures to prevent stormwater pollution
 - i. Examples: A containment pallet for drums.
 - c. Procedural BMP – Employs a standard procedure to prevent stormwater pollution
 - i. Examples: Vehicle inspection for leaks before use.
 - d. Maintain leaking equipment promptly. Conduct preventative maintenance to avoid future problems.
 - e. Address leaks and spills when they are discovered. Contaminants spilled by a bay door have the potential to flow outside or be tracked offsite on boots or ties.
- 5. Green Infrastructure and Low Impact Development (GI/LID):
 - a. In 2020, JBER developed a GI/LID plan for strategies to improve green infrastructure to reduce stormwater runoff.
 - b. Green infrastructure recommended for JBER includes:
 - i. Biofiltration basins and swales
 - ii. Vegetated swales and ditches
 - iii. Dry infiltration basins and swales



- iv. Constructed wetlands
 - v. Permeable pavers
 - vi. Rainwater collection
- c. JBER GI/LID Plan required by the MS4 Permit.
- d. Gray infrastructure is an impervious surface with little ability to slow down or absorb runoff and can result in water quality issues.
- e. Green infrastructure is a pervious surface that absorbs runoff and is a solution for water quality issues.
- 6. Download plans on JBER's stormwater webpage: <https://www.jber.jb.mil/Services-Resources/Environmental/Water-Quality/>
 - a. Or you can request the permits directly from Jessica
- 7. JBER Restoration Program (Sarah Runck, Restoration Project Manager)
 - a. Institutional Controls:
 - i. Limit exposure to groundwater, surface water, or soil
 - ii. Required when hazardous substances remain on-site at concentrations above allowable levels
 - b. Examples of Institutional Controls at JBER:
 - i. Restricting groundwater use
 - ii. Restricting land uses to commercial, industrial, or recreational
 - iii. Limiting excavation and movement of soil
 - c. How do you know if a project is in a location with institutional controls?
 - i. Site approvals for proposed facilities
 - ii. NEPA documents
 - iii. Real Property agreements/environmental baseline surveys
 - iv. BCE Work Clearance Requests (aka "dig permits")
 - d. Restoration is updating the newest version of the JBER Restoration Atlas
 - e. Examples of restoration concerns identified during project reviews include:
 - i. Institutional controls
 - ii. Soil sampling and analysis requirements
 - iii. Presence of groundwater monitoring wells
 - f. Ground water monitoring wells are used during restoration, the two types include stick-up and flush-mount.
- 8. JBER Water Quality Program Manager**
 - a. Office: 384-6784jessica.weikert@us.af.mil, JBER-R Building 724
- 9. Hazardous Waste Turn-in**
 - a. JBER Hazardous Waste Center 552-3435, JBER-E Building 4314
- 10. JBER Fire Department**
 - a. 552-9478 (or 911)
- 11. Closing remarks:
 - a. Thoughts on an annual in-person training equivalent to the online MSGP Training?



- i. Group expressed that one in-person meeting per year would be a good option.
 - ii. Dennis Sessler suggested having a spring and fall training session.
- b. When/where will the TEACH training module be available?
 - i. The final version of the training is expected to be uploaded on the TEACH platform and be available to UECs, facility managers, and committee members by January 2023
- c. Is there a plan to host a CESCL training on JBER?
 - i. Sean Palmer is going to follow-up with Jessica about delivering the training to base personnel.
- d. Reach out to Jessica Weikert for any additional questions or comments